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PUBLICATION LIST
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Abbey AM, Besirli CG, Musch DC, Andrews CA, **Capone A, Drenser KA**, Wallace DK, Ostmo S, Chiang M, Lee PP and **Trese MT** (2016). "Evaluation of screening for retinopathy of prematurity by ROPtool or a lay reader." *Ophthalmology* 123(2): 385-390.

[Full-Text](#)

Department of Ophthalmology

Purpose: To determine if (1) tortuosity assessment by a computer program (ROPtool, developed at the University of North Carolina, Chapel Hill, and Duke University, and licensed by FocusROP) that traces retinal blood vessels and (2) assessment by a lay reader are comparable with assessment by a panel of 3 retinopathy of prematurity (ROP) experts for remote clinical grading of vascular abnormalities such as plus disease. Design: Validity and reliability analysis of diagnostic tools. Participants: Three hundred thirty-five fundus images of prematurely born infants. Methods: Three hundred thirty-five fundus images of prematurely born infants were obtained by neonatal intensive care unit nurses. A panel of 3 ROP experts graded 84 images showing vascular dilatation, tortuosity, or both and 251 images showing no evidence of vascular abnormalities. These images were sent electronically to an experienced lay reader who independently graded them for vascular abnormalities. The images also were analyzed using the ROPtool, which assigns a numerical value to the level of vascular abnormality and tortuosity present in each of 4 quadrants or sectors. The ROPtool measurements of vascular abnormalities were graded and compared with expert panel grades with a receiver operating characteristic (ROC) curve. Grades between human readers were cross-tabulated. The area under the ROC curve was calculated for the ROPtool, and sensitivity and specificity were computed for the lay reader. Main Outcome Measures: Measurements of vascular abnormalities by ROPtool and grading of vascular abnormalities by 3 ROP experts and 1 experienced lay reader. Results: The ROC curve for ROPtool's tortuosity assessment had an area under the ROC curve of 0.917. Using a threshold value of 4.97 for the second most tortuous quadrant, ROPtool's sensitivity was 91% and its specificity was 82%. Lay reader sensitivity and specificity were 99% and 73%, respectively, and had high reliability (κ , 0.87) in repeated measurements. Conclusions: ROPtool had very good accuracy for detection of vascular abnormalities suggestive of plus disease when compared with expert physician graders. The lay reader's results showed excellent sensitivity and good specificity when compared with those of the expert graders. These options for remote reading of images to detect vascular abnormalities deserve

consideration in the quest to use telemedicine with remote reading for efficient delivery of high-quality care and to detect infants requiring bedside examination. © 2015 American Academy of Ophthalmology.

Alapati S, **Krishnan A**, Arani K, **Silbergleit R** and **Dulai M** (2016). "The Meckel's cave: What hides within?" Neurographics 6(1): 20-32.

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Department of Diagnostic Radiology and Molecular Imaging

Department of Pathology

Alchammas J, Al-faham Z, Roumayah Y and **Wong CO** (2016). "The evaluation of Lupus myocarditis with N-13 ammonia and 18F-FDG PET scan." Journal of Nuclear Medicine Technology. ePub Ahead of Print.

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OUWB Medical Student Author

Department of Diagnostic Radiology and Molecular Imaging

Alghamdi S, Khan I, Beeravolu N, McKee C, Thibodeau B, **Wilson G** and Chaudhry GR (2016). "BET protein inhibitor JQ1 inhibits growth and modulates WNT signaling in mesenchymal stem cells." Stem Cell Research and Therapy 7(1).

[Full-Text](#)

Department of Radiation Oncology

Background: Efficacy and safety of anticancer drugs are traditionally studied using cancer cell lines and animal models. The thienodiazepine class of BET inhibitors, such as JQ1, has been extensively studied for the potential treatment of hematological malignancies and several small molecules belonging to this class are currently under clinical investigation. While these compounds are well known to inhibit cancer cell growth and cause apoptosis, their effects on stem cells, particularly mesenchymal stem cells (MSCs), which are important for regeneration of damaged cells and tissues, are unknown. In this study we employed umbilical cord derived MSCs as a model system to evaluate the safety of JQ1. Methods: Cord derived MSCs were treated with various doses of JQ1 and subjected to cell metabolic activity, apoptosis, and cell cycle analyses using MTT assay, Annexin-V/FITC and PI staining, and flow cytometry, respectively. The effect of JQ1 on gene expression was determined using microarray and quantitative real-time reverse transcriptase polymerase chain reaction analysis. Furthermore, protein expression of apoptotic and neuronal markers was carried out using western blot and immunostaining, respectively. Results: Our results showed that JQ1 inhibited cell growth and caused cell cycle arrest in G1 phase but did not induce apoptosis or senescence. JQ1 also down-regulated genes involved in self-renewal, cell cycle, DNA replication, and mitosis, which may have negative implications on the regenerative potential of MSCs. In addition, JQ1 interfered with signaling pathways by down regulating the expression of WNT, resulting in limiting the self-renewal. These results suggest that anticancer agents belonging to the thienodiazepine class of BET inhibitors should be carefully evaluated before their use in cancer therapy. Conclusions: This study revealed for the first time that JQ1 adversely affected MSCs, which are important for repair and regeneration. JQ1 specifically modulated signal transduction and inhibited growth as well as self-renewal. These findings suggest that perinatal MSCs could be used to supplement animal models for investigating the safety of anticancer agents and other drugs. © 2016 Alghamdi et al.

Arndt DH, Goodkin HP and Giza CC (2016). "Early posttraumatic seizures in the pediatric population." Journal of Child Neurology 31(1): 46-56.

[Full-Text](#)

Department of Pediatrics

Early posttraumatic seizure is a paramount clinical issue in pediatric traumatic brain injury patients as it is a common occurrence, yet an understudied entity at present. Recent literature recognizes several posttraumatic seizure subtypes based on time of presentation and the underlying pathophysiology: impact, immediate, delayed early, and late/posttraumatic epilepsy. Appropriate classification of pediatric posttraumatic seizure subtypes can be helpful for appropriate management and prognosis. This review will focus on early posttraumatic seizures, and the subtypes of early posttraumatic seizure. Incidence, risk factors, diagnosis, seizure semiology, status epilepticus, management, risk of recurrence, and prognosis were

reviewed. The integration of continuous electroencephalographic (EEG) monitoring into pediatric traumatic brain injury management may hold the key to better characterizing and understanding pediatric early posttraumatic seizures. Topics for future research pertaining to pediatric early posttraumatic seizure are identified. © 2015 The Author(s).

Aronow HD, Collins TJ, Gray WA, Jaff MR, Kluck BW, Patel RAG, Rosenfield KA, **Safian RD**, Sobieszczyk PS, Wayangankar SA and White CJ (2016). "SCAI/SVM Expert Consensus Statement on Carotid Stenting: Training and Credentialing for Carotid Stenting." Catheterization and Cardiovascular Interventions 87(2): 188-199.

[Full-Text](#)

Department of Internal Medicine

Carotid artery stenting (CAS) has become an integral part of the therapeutic armamentarium offered by cardiovascular medicine programs for the prevention of stroke. The purpose of this expert consensus statement is to provide physician training and credentialing guidance to facilitate the safe and effective incorporation of CAS into clinical practice within these programs. Since publication of the 2005 Clinical Competence Statement on Carotid Stenting, there has been substantial device innovation, publication of numerous clinical trials and observational studies, accumulation of extensive real-world clinical experience and widespread participation in robust national quality improvement initiatives [5]. Collectively, these advances have led to substantial evolution in the selection of appropriate patients, as well as in the cognitive, technical and clinical skills required to perform safe and effective CAS. Herein, we summarize published guidelines, describe training pathways, outline elements of competency, offer strategies for tracking outcomes, specify facility, equipment and personnel requirements, and propose criteria for maintenance of CAS competency. (c) 2015 Wiley Periodicals, Inc.

Arslanturk S, Siadat MR, Ogunyemi T, Killinger K and **Diokno A** (2016). "Analysis of incomplete and inconsistent clinical survey data." Knowledge and Information Systems 46(3): 731-750.

[Full-Text](#)

Department of Urology

It is common for clinical data in survey trials to be incomplete and inconsistent for several reasons. Inconsistent data occur when more than one set of exclusive alternative questions are answered. One objective of this study was to identify and eliminate inconsistent data as an important data mining preprocessing step. We define three types of incomplete data: missing data due to skip pattern (SPMD), undetermined missing data (UMD), and genuine missing data (GMD). Identifying the type of missing data is another important objective as all missing data types cannot be treated the same. This goal cannot be achieved manually on large data of complex surveys since each subject should be processed individually. The analyses are accomplished in a mathematical framework by exploiting graph theoretic structure inherent in the questionnaire. An undirected graph is built using mutually inconsistent responses as well as its complement. The responses not in the largest maximal clique of complement graph are considered inconsistent. This guarantees removing as few responses as possible so that remaining ones are mutually consistent. Further, all potential paths in questionnaire's graph are considered, based on the responses of subjects, to identify each type of incomplete data. Experiments are conducted on MESA data. Results show 15.4 % GMD, 9.8 % SPMD, 12.9 % UMD, and 0.021 % inconsistent data. Further utility of the approach is using a) the SPMD for data stratification, and b) inconsistent data for noise estimation. Proposed method is a preprocessing prerequisite for any data mining of clinical survey data. © 2015, Springer-Verlag London.

Auer J, Sinzinger H, **Franklin B** and Berent R (2016). "Muscle- and skeletal-related side-effects of statins: Tip of the iceberg?" European Journal of Preventive Cardiology 23(1): 88-110.

[Full-Text](#)

Department of Internal Medicine

The clinical spectrum of muscle- and skeletal-related side-effects of statins includes varied myalgias and weakness, an asymptomatic increase in the concentration of creatine kinase and other biochemical parameters, myositis and rhabdomyolysis. Currently, there is no consensus on the definition of 'statin myopathy'. Evidence suggests that deleterious effects may also be associated with the volume or dosage of structured exercise and/or the intensity of physical activity. Moreover, non-muscle adverse effects on the

joints and tendons are often overlooked and underemphasized. The incidence of myopathy associated with statin treatment typically ranges between 1.5% and 10%. Few data are available regarding the prevalence of muscle-related symptoms associated with different statins and the distribution of affected muscles. Furthermore, discrepancies between clinical trials and daily practice may emanate, in part, because of inconsistent definitions or exclusion criteria. The pathophysiology of statin-related myopathy is incompletely understood. A dose-dependent and proapoptotic effect, direct effects on mitochondria, drug interactions and genetic factors, or combinations thereof, may be involved. Recently, a rare immune-mediated myopathy triggered by statin use has been described. With the increasing number of patients treated with statins and with more patients being prescribed high doses of potent statins to achieve low-density lipoprotein targets, muscle-related side-effects will become more prevalent. Currently, the only effective treatment is the discontinuation of statin use. Further research is needed to develop alternative LDL-lowering drugs when statins are not well tolerated and to establish additional effective strategies to manage lipids and lipoproteins. © 2014 European Society of Cardiology.

Auvergne L, Bortsov AV, Ulirsch JC, Peak DA, **Jones JS, Swor RA**, Domeier RM, Lee DC, Rathlev NK, Hendry PL and McLean SA (2016). "Association of epidemiologic factors and genetic variants influencing hypothalamic-pituitary-adrenocortical axis function with postconcussive symptoms after minor motor vehicle collision." *Psychosomatic Medicine* 78(1): 68-78.

[Full-Text](#)

Department of Emergency Medicine

Objectives: To determine the influence of epidemiologic factors and the influence of genetic variants affecting FKBP5, a protein known to modulate hypothalamic-pituitary-adrenocortical axis function, on the severity of somatic symptoms commonly termed "postconcussive" 6 and 12 months after motor vehicle collision (MVC). Methods: European Americans 18 to 65 years of age who presented to one of eight emergency departments (EDs) after MVC were enrolled. Exclusion criteria included hospital admission. Blood samples were collected in the ED for genotyping. Participants completed evaluations including an adapted Rivermead Post-Concussive Symptoms Questionnaire in the ED and at 6 weeks, 6 months, and 1 year. Repeated-measures analysis of covariance was used to evaluate the association between epidemiologic factors (sociodemographic, pre-MVC health, collision characteristics, head injury, peritraumatic pain, and stress), FKBP5 genetic variants, and postconcussive symptom severity. Results: Among 943 patients recruited in the ED, follow-up was completed on 835 (88%) at 6 months and 857 (90%) at 1 year. Self-reported head impact during collision was not associated with chronic postconcussive symptom severity. After correction for multiple testing, three FKBP5 single-nucleotide polymorphisms (rs3800373, rs7753746, and rs9380526) predicted chronic postconcussive symptom severity, with an average symptom severity of 1.10 (95% confidence interval = 0.96-1.24), 1.36 (1.21-1.51), and 1.55 (1.23-1.88) for one, two, or three copies of minor allele at rs3800373 ($p = .001$). Similar effect sizes were observed for the minor alleles of rs7753746 and rs9380526. Conclusions: Postconcussive symptoms after minor MVC are not generally related to the severity of mild brain injury. This study shows that neurobiologic stress systems may play a role in the pathogenesis of postconcussive symptoms. © 2015 by the American Psychosomatic Society.

Azoury SC, Grimm JC, Tuffaha SH, Broyles JM, **Fischer AC**, Yang SC and Tufaro AP (2016). "Chest wall reconstruction: Evolution over a decade and experience with a novel technique for complex defects." *Annals of Plastic Surgery* 76(2): 231-237.

[Full-Text](#)

Department of Surgery

Background Chest wall reconstruction (CWR) with biologic matrices has gained popularity over the last decade; however, data on this topic remain sparse. The aim of this study is to review the different methods and materials used for CWR while reviewing and highlighting a novel approach using a biologic inlay and synthetic onlay technique for larger, complex high-risk defects. Methods A retrospective review was performed of all patients who underwent full thickness chest wall resection and reconstruction during a 10-year period. Patient characteristics, comorbidities, operative data, as well as postoperative wound complications and outcomes were reviewed. Different reconstructive methods and materials were reviewed and compared. Results From December 2003 to January 2014, a total of 81 patients underwent CWR. The

indications for resection/reconstruction included oncologic in 49 patients (60.5%), desmoids tumors in 10 (12.3%), bronchopleural fistula in 3 (3.7%), infection in 7 (8.6%), and anatomic deformity in 7 (8.6%) patients. Synthetic and/or acellular dermal matrices (ADM) reconstruction was used in 59 patients (10 biologic, 22 synthetic, and 27 biologic ADM inlay/synthetic onlay combination). On average, 2.5, 3.5, and 3.6 ribs were resected in the biologic, synthetic, and combination group, respectively ($P = 0.1$). A greater number of patients in the combination group had a history of chemotherapy and/or radiation therapy ($P = 0.03$) than the synthetic or biologic alone groups. Risk analysis demonstrated an association between the number of ribs resected and postoperative chest wall complications. The incidence of chest wall/wound complications in the synthetic, combination, and biologic groups was 31.8%, 22.2%, and 10%, respectively ($P = 0.47$). Conclusions In the largest single institution study comparing the use of different reconstructive materials, including ADM in CWR, the authors demonstrate that a biologic inlay/synthetic onlay may be used effectively for high-risk, large complex defects. Early outcomes with this technique are promising. The authors believe this combination highlights benefits from both materials because the ADM facilitates tissue ingrowth and revascularization, whereas the synthetic component provides structural durability. Additional studies with larger sample sizes are necessary to further explore the benefits of the combination technique to determine if outcomes are better than either material alone when used to reconstruct high-risk wounds after larger resections. © 2016 Wolters Kluwer Health, Inc. All rights reserved.

Bahado-Singh RO, Graham SF, Turkoglu O, Beauchamp K, Bjorndahl TC, Han BS, Mandal R, Pantane J, **Kowalenko T**, Wishart DS and Stahel PF (2016). "Identification of candidate biomarkers of brain damage in a mouse model of closed head injury: A metabolomic pilot study." Metabolomics 12(3): 1-13.

[Full-Text](#)

Department of Obstetrics and Gynecology

Department of Emergency Medicine

We aim to identify candidate brain biomarkers for, and to elucidate the pathophysiology of closed traumatic brain injury (TBI). Nuclear magnetic resonance (NMR) based metabolomic analysis was performed on the whole brain of mice undergoing TBI using a validated technique. There were 10 TBI mice compared to 8 sham operated controls. A total of 45 metabolites were evaluated. There was a statistically significant alteration in concentrations of 29 metabolites in TBI brains as compared to controls ($FDR < 0.05$). Profound disturbances of several metabolic pathways ($FDR < 1E-07$), including pathways associated with purine, alanine, aspartate and glutamine and glutathione metabolism were observed. Also, a significant elevation in glutamate (the main excitatory neurotransmitter) and depression of GABA (the main inhibitory neurotransmitter) was observed. Four metabolites, ADP, AMP, NAD⁺, and IMP were the most important indicators of TBI, relative to normal controls. All were elevated in the TBI mice. A combination of these 4 biomarkers produced a perfect predictor of TBI status, AUC (95 % CI) = 1.0 (1.0, 1.0). We also detected significant disturbances in mitochondrial function, energy metabolism, neurotransmitter metabolism and other important biochemical pathways in TBI mouse brains. Further studies to assess the utility of metabolomics to detect and classify the severity of and assess the prognosis of TBI is warranted. © 2016, Springer Science+Business Media New York.

Bahado-Singh RO, Syngelaki A, Mandal R, Bjorndahl TC, Li L, Maulik D, Han B, Dong E, Turkoglu O, Zeb A, **Redman M**, Wishart DS and Nicolaides KH (2016). "First-trimester metabolomics prediction of subsequent stillbirth." American Journal of Obstetrics and Gynecology 214(1): S89-S90.

[Full-Text](#)

Department of Obstetrics and Gynecology

Bahado-Singh RO, Zaffra R, Albayarak S, Chelliah A, Bolinjar R, Turkoglu O and Radhakrishna U (2016). "Epigenetic markers for newborn Congenital Heart Defect (CHD)." Journal of Maternal-Fetal and Neonatal Medicine 29(12): 1881-1887.

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Department of Obstetrics and Gynecology

Objective: Our objective was to determine whether there were significant differences in genome-wide DNA methylation in newborns with major congenital heart defect (CHD) compared to controls. We also evaluated

methylation of cytosines in CpG motifs for the detection of these CHDs. Methods: Genome-wide DNA methylation analysis was performed on DNA from 60 newborns with various CHDs, including hypoplastic left heart syndrome, ventricular septal deficit, atrial septal defect, pulmonary stenosis, coarctation of the aorta and Tetralogy of Fallot, and 32 controls. Results: Highly significant differences in cytosine methylation were seen in a large number of genes throughout the genome for all CHD categories. Gene ontology analysis of CHD overall indicated over-represented biological processes involving cell development and differentiation, and anatomical structure morphogenesis. Methylation of individual cytosines in CpG motifs had high diagnostic accuracy for the detection of CHD. For example, for coarctation one predictive model based on levels of particular cytosine nucleotides achieved a sensitivity of 100% and specificity of 93.8% (AUC = 0.974, $p < 0.00001$). Conclusion: Profound differences in cytosine methylation were observed in hundreds of genes in newborns with different types of CHD. There appears to be the potential for development of accurate genetic biomarkers for CHD detection in newborns. © 2015 Taylor & Francis.

Bartley J, Gupta P, Killinger KA, **Gillera J**, Gaines N, Wolfert C, **Boura JA** and **Peters KM** (2016). "Incidence of neuromodulation device explant for magnetic resonance imaging in a single, high volume institution." Neurourology and Urodynamics 35(23): S66.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: Magnetic resonance imaging (MRI), except for head MRI, is contraindicated with an implanted neuromodulation device. Explant, and potential device re-implant, is costly in terms of dollars as well as patient burden. We examined our large series of implanted patients to evaluate the incidence and factors related to device explant for MRI. Methods: Our prospective neuromodulation database was reviewed for patient reported demographics, and primary urologic diagnosis, explant for MRI, and re-implant data collected from medical records. Descriptive statistics were performed. Results: Of 626 patients implanted between 2004 and 2015, 20 (3.2%) were explanted for MRI (85% female; mean age 52.1 years; 90% white). Primary urological diagnoses in explanted patients were urinary urgency/frequency with urge incontinence (n=8), interstitial cystitis/bladder pain syndrome (n=7), urgency/frequency (n=2), idiopathic urinary retention (n=2) and chronic pelvic pain (n=1). Six patients had at least one secondary neurological diagnosis including multiple sclerosis (2), incomplete spinal cord injury (1), stroke (2), and others (6) such as seizures, postural orthostatic tachycardia syndrome (POTS), peripheral neuropathy, pudendal neuropathy, and cauda equina syndrome. Proportions with neurological diagnoses were similar for patients that had an MRI explant when compared to other patients not explanted for MRI (30% vs. 26.1%; $P=0.69$). Mean time to explant for MRI was 26.5 (range 2.7 to 66.9) months. Twelve patients had complete documentation for type of MRI: head (3), urethra (1) shoulder (1), and cervical, thoracic, or lumbar spine (7). In the 19 patients that had follow up records available for review, three were reimplanted at two weeks to four months after MRI, three declined re-implant (symptoms had resolved), and six that reported minimal symptom improvement after initial implant were not restaged. Reason for lack of re-implant was not documented in seven patients. Conclusion: Although patients with preexisting neurological diagnosis might be at higher risk for future MRI, the presence of neurological disease was not higher in those explanted for MRI. Overall, the number of patients explanted for MRI remained low. Predicting future need for MRI is difficult, however the possibility should be considered prior to device implant and patients counseled accordingly.

Baschnagel AM, Tonlaar NY, **Wilson GD**, Williams L and Eskandari M (2016). "The relationship between CD44, EGFR, and c-MET expression in patients with locally advanced p16-positive and p16-negative head and neck squamous cell carcinoma." International Journal of Radiation Oncology Biology Physics 94(4): 938.

[Full-Text](#)

Department of Radiation Oncology

Bedi DS, Krenzien F, Quante M, Uehara H, Edtinger K, Liu G, Denecke C, Jurisch A, Kim I, Li H, Yuan X, Ge X, ElKhal A and Tullius SG (2016). "Defective CD8 signaling pathways delay rejection in older recipients." Transplantation 100(1): 69-79.

[Full-Text](#)

Department of Surgery

CD8+ T cells play a cardinal feature in response to alloantigens and are able to generate effector/memory T cells independently from CD4+ T cells. To investigate the impact of aging on CD8+ T cells, we used a fully mismatched mouse skin transplant model. Our findings showed a prolonged allograft survival in older recipients associated with a significant increase of CD4+ and CD8+CD44^{high}CD62L^{low} effector/memory T cells and a reduced systemic IFN γ production. When reconstituting young CBA Rag-1^{-/-} mice that lack mature T and B cells with old CD8+ T cells expressing clonal anti-H2Kb T cell receptor (TCR) alloreactive for MHC I, graft survival was significantly prolonged and comparable to those receiving young CD8+ T cells. Moreover, our data showed that reduced systemic IFN γ levels observed in old recipients had been linked to a compromised expression of the IL-2R β subunit (CD122) by old CD8+ T cells. In addition, we observed an impaired IFN γ production on IL-2 receptor activation. At the same time, gene profiling analysis of old CD8+ T cells demonstrated reduced chemokine ligand-3 and CD40L expression that resulted in compromised CD8+ T cell/dendritic cell communication, leading to impaired migratory and phagocytic activity of CD11c+ cells. Collectively, our study demonstrated that aging delays allograft rejection. CD8+ T cells play a critical role in this process linked to a compromised production of IFN γ , in addition to a defective IL-2 receptor signaling machinery and a defective communication between CD8+ T cells and dendritic cells. © Copyright 2015 Wolters Kluwer Health, Inc. All rights reserved.

Benesh EC, Gill J, **Lamb LE** and Moley KH (2016). "Maternal obesity, cage density, and age contribute to prostate hyperplasia in mice." Reproductive Sciences 23(2): 176-185.

[Full-Text](#)

Department of Urology

Identification of modifiable risk factors is gravely needed to prevent adverse prostate health outcomes. We previously developed a murine precancer model in which exposure to maternal obesity stimulated prostate hyperplasia in offspring. Here, we used generalized linear modeling to evaluate the influence of additional environmental covariates on prostate hyperplasia. As expected from our previous work, the model revealed that aging and maternal diet-induced obesity (DIO) each correlated with prostate hyperplasia. However, prostate hyperplasia was not correlated with the length of maternal DIO. Cage density positively associated with both prostate hyperplasia and offspring body weight. Expression of the glucocorticoid receptor in prostates also positively correlated with cage density and negatively correlated with age of the animal. Together, these findings suggest that prostate tissue was adversely patterned during early life by maternal overnutrition and was susceptible to alteration by environmental factors such as cage density. Additionally, prostate hyperplasia may be acutely influenced by exposure to DIO, rather than occurring as a response to worsening obesity and comorbidities experienced by the mother. Finally, cage density correlated with both corticosteroid receptor abundance and prostate hyperplasia, suggesting that overcrowding influenced offspring prostate hyperplasia. These results emphasize the need for multivariate regression models to evaluate the influence of coordinated variables in complicated animal systems. © The Author(s) 2015.

Bennett JA, **Lamb C** and Young RH (2016). "Apoplectic leiomyomas: A morphologic analysis of 100 cases highlighting unusual features." American Journal of Surgical Pathology 40(4): 563-568.

[Full-Text](#)

Department of Pathology

Leiomyomas with apoplectic change related to progestational effect have not received much attention in the literature and in our experience frequently cause diagnostic difficulty. We reviewed 100 apoplectic leiomyomas to characterize their broad histologic spectrum. The tumors occurred over a wide age range (mean, 41 y), and although 2 patients were pregnant, in the vast majority the apoplectic changes were likely due to progestins administered to help control symptoms related to the leiomyomas. Leiomyomas were multiple in 77% of patients, averaged 6 cm, and frequently showed gross features of hemorrhage, necrosis, cyst formation, softening, or color different than the usual banal leiomyoma. Microscopic examination

typically revealed multiple stellate to ovoid zones with a hypercellular periphery and central hemorrhage, necrosis, or hyalinization. The hypercellular areas were often dominated by cells with eosinophilic cytoplasm, pyknotic nuclei, and increased mitoses (up to 14/10 high-power fields), but most tumors showed no appreciable cytologic atypia in these regions. Edema was noted in 95%, a hyalinized and/or myxoid matrix in 92%, and cyst formation in 42%. Because of these unusual features, difficulty often arose in determining whether the tumors were benign, malignant, or of uncertain malignant potential. Recognition of their wide morphologic spectrum will enable classification in the benign category and avoid undue patient anxiety and potentially unnecessary aggressive management. © 2015 Wolters Kluwer Health, Inc. All rights reserved.

Bezjak A, Paulus R, Gaspar LE, Timmerman RD, Straube WL, Ryan WF, Garces Y, Pu AT, Singh AK, Videtic GM, McGarry RC, Iyengar P, Pantarotto JR, Urbanic JJ, Sun A, Daly ME, **Grills IS**, Normolle DP, Bradley JD and Choy H (2016). "Primary study endpoint analysis for NRG oncology/RTOG 0813 trial of Stereotactic Body Radiation Therapy (SBRT) for centrally located Non-Small Cell Lung Cancer (NSCLC)." International Journal of Radiation Oncology Biology Physics 94(1): 5-6.

[Full-Text](#)

Department of Radiation Oncology

Bhutani VK, Poland R, Meloy LD, Hegyi T, Fanaroff AA and **Maisels MJ** (2016). "Clinical trial of tin mesoporphyrin to prevent neonatal hyperbilirubinemia." Journal of Perinatology. ePub Ahead of Print.

[Request Form](#)

Department of Pediatrics

OBJECTIVE: To assess the efficacy of the heme oxygenase inhibitor, tin mesoporphyrin (SnMP), to reduce total bilirubin (TB) levels. STUDY DESIGN: Masked, SnMP (4.5 mg kg⁻¹), placebo-controlled, multicenter trial of single intramuscular injection to newborns 35 weeks gestational age whose predischarge screening transcutaneous bilirubin (TcB) was >75th percentile. RESULTS: Two hundred and thirteen newborns (median age 30 h) were randomized to treatment with SnMP (n=87) or 'sham' (n=89). We found that the duration of phototherapy was halved. Within 12 h of SnMP administration, the natural TB trajectory was reversed. At age 3 to 5 days, TB in the SnMP-treated group was +8% but sixfold lower than the 47% increase in the sham-treated group (P<0.001). At age 7 to 10 days, mean TB declined 18% (P<0.001) compared with a 7.1% increase among controls. No short-term adverse events from SnMP treatment were noted other than photoreactivity due to inadvertent exposure to white light phototherapy. CONCLUSION: Early, predischarge SnMP administration decreased the duration of phototherapy, reversed TB trajectory and reduced the severity of subsequent hyperbilirubinemia. Journal of Perinatology advance online publication, 3 March 2016; doi:10.1038/jp.2016.22.

Bilollikar AN, Goldstein JA, Madder RD and Chinnaiyan KM (2016). "Plaque disruption by coronary computed tomographic angiography in stable patients vs. acute coronary syndrome: A feasibility study." European Heart Journal Cardiovascular Imaging 17(3): 247-259.

[Full-Text](#)

Department of Internal Medicine

AIMS: This study was designed to determine whether coronary CT angiography (CTA) can detect features of plaque disruption in clinically stable patients and to compare lesion prevalence and features between stable patients and those with acute coronary syndrome (ACS). METHODS: We retrospectively identified patients undergoing CTA, followed by invasive coronary angiography (ICA) within 60 days. Quantitative 3-vessel CTA lesion analysis was performed on all plaques \geq 25% stenosis to assess total plaque volume, low attenuation plaque (LAP, <50 HU) volume, and remodelling index. Plaques were qualitatively assessed for CTA features of disruption, including ulceration and intra-plaque dye penetration (IDP). ICA was employed as a reference standard for disruption. A total of 145 (94 ACS and 51 stable) patients were identified. By CTA, plaque disruption was evident in 77.7% of ACS cases. Although more common among those with ACS, CTA also detected plaque disruption in 37.3% of clinically stable patients (P < 0.0001). CONCLUSIONS: Clinically stable patients commonly manifest plaques with features of disruption as determined by CTA. Though the prevalence of plaque disruption is less than patients with ACS, these findings support the concept that some clinically stable patients may harbour 'silent' disrupted plaques. These findings may have implications for

detection of 'at risk' plaques and patients.

Bilollikar AN, Madder R and **Goldstein J** (2016). "Plaque disruption by coronary CTA, not apparent by invasive coronary angiography." Journal of the American College of Cardiology 67(13): 1745.

[Full-Text](#)

Department of Internal Medicine

Background: By invasive coronary angiography (ICA), unstable lesions are designated "complex" by features of haziness, ulceration and dye-staining ('Ambrose' criteria). Coronary computed tomographic angiography (CTA) can delineate concordant unstable features, including ulceration and intra-plaque dye penetration (IDP). Since early plaque instability may precede clinical manifestations of plaque rupture, the present study was designed to determine whether CTA can detect early features of instability in plaques not yet frankly disrupted by ICA. Methods: In 145 patients undergoing CTA and then ICA within 60 days, we analyzed CTA lesions >25% stenosis for features of plaque disruption (UC and IDP), and compared them to disrupted features by ICA "Ambrose" complexity. Results: 177 lesions were found to be disrupted by CTA. Of these, 104 (58.8%) were concordantly complex by ICA. However, CTA identified 73 lesions (41.2%) with features of disruption which by ICA were non-complex (figure 1, left panel CTA with areas of possible intra-plaque dye penetration), right panel corresponding ICA). CTA features of disruption in such lesions included ulceration in 16 lesions (8.2%) and IDP in 57 lesions (78.1%). Conclusions: CTA documents signs of plaque instability in >40% of lesions not frankly ruptured by ICA. We can only speculate whether these reflect subtle erosions, ruptures or intra-plaque hemorrhage beyond the resolution of ICA. (Figure presented).

Boyanton BL, Jr., Darnell EM, Prada AE, Hansz DM and **Robinson-Dunn B** (2016). "Evaluation of the Lyra Direct Strep assay to detect group A streptococcus and group C and G beta-hemolytic streptococcus from pharyngeal specimens." Journal of Clinical Microbiology 54(1): 175-177.

[Full-Text](#)

Department of Pathology

The Lyra Direct strep assay was compared to culture for its ability to detect Streptococcus group A and β -hemolytic groups C/G using rapid antigen-negative pharyngeal specimens (n=161). The Lyra assay correctly detected all β -hemolytic streptococci (group A, n=19; group C/G, n=5). In batch mode, the Lyra assay reduced intralaboratory turnaround time by 60% (18.1 h versus 45.0 h) but increased hands-on time by 96% (3 min 16 s versus 1 min 40 s per specimen). © 2015, American Society for Microbiology. All Rights Reserved.

Boyanton BL, Jr., Freij BJ, Robinson-Dunn B, Makin J, Runge JK and Luna RA (2016). "Neonatal pasteurilla multocida subsp. Septica meningitis traced to household cats: Molecular linkage analysis using repetitive-sequence-based PCR." Journal of Clinical Microbiology 54(1): 230-232.

[Full-Text](#)

Department of Pathology

Department of Pediatrics

Pasteurella multocida is a rare cause of neonatal bacterial meningitis. We describe such a case and verify two household cats as the source of infection using repetitive-element PCR (rep-PCR) molecular fingerprinting. © 2015, American Society for Microbiology. All Rights Reserved.

Brown JR, **Rezaee ME**, Nichols EL, Marshall EJ, Siew ED and Matheny ME (2016). "Incidence and in-hospital mortality of Acute Kidney Injury (AKI) and dialysis-requiring AKI (AKI-D) after cardiac catheterization in the national inpatient sample." Journal of the American Heart Association 5(3): 1-11.

[Full-Text](#)

OUIWB Medical Student Author

BACKGROUND: Acute kidney injury (AKI) and dialysis-requiring AKI (AKI-D) are common, serious complications of cardiac procedures. METHODS AND RESULTS: We evaluated 3 633 762 (17 765 214 weighted population) cardiac catheterization or percutaneous coronary intervention (PCI) hospital discharges from the nationally representative National Inpatient Sample to determine annual population incidence rates for AKI and AKI-D in the United States from 2001 to 2011. Odds ratios for both conditions and associated

in-hospital mortality were calculated for each year in the study period using multiple logistic regression. The number of cardiac catheterization or PCI cases resulting in AKI rose almost 3-fold from 2001 to 2011. The adjusted odds of AKI and AKI-D per year among cardiac catheterization and PCI patients were 1.11 (95% CI: 1.10-1.12) and 1.01 (95% CI: 0.99-1.02), respectively. Most importantly, in-hospital mortality significantly decreased from 2001 to 2011 for AKI (19.6-9.2%) and AKI-D (28.3-19.9%), whereas odds of associated in-hospital mortality were 0.50 (95% CI: 0.45-0.56) and 0.70 (95% CI: 0.55-0.93) in 2011 versus 2001, respectively. The population-attributable risk of mortality for AKI and AKI-D was 25.8% and 3.8% in 2001 and 41.1% and 6.5% in 2011, respectively. Males and females had similar patterns of AKI increase, although males outpaced females. CONCLUSIONS: The Incidence of AKI among cardiac catheterization and PCI patients has increased sharply in the United States, and this should be addressed by implementing prevention strategies. However, mortality has significantly declined, suggesting that efforts to manage AKI and AKI-D after cardiac catheterization and PCI have reduced mortality.

Burla MJ and **Benjamin J** (2016). "Pediatric urinary retention in the emergency department: A concerning symptom with etiology outside the bladder." Journal of Emergency Medicine 50(2): e53-e56.

[Full-Text](#)

Department of Emergency Medicine

Background Urinary retention in an otherwise healthy adolescent is a concerning symptom, in which etiology can range from an extracystic mass to central nervous system involvement (CNS). One possibility is acute disseminated encephalomyelitis (ADEM), a rare inflammatory autoimmune disease that affects the CNS via demyelination. The disease usually is preceded by an acute viral infection, and commonly presents with multifocal neurological deficits. The diagnosis for ADEM is made based on clinical presentation, correlating with findings characterized on magnetic resonance imaging (MRI) in the CNS. Case Report Our case involves a 16-year-old boy who presented to the Emergency Department (ED) with urinary retention. The patient was an otherwise healthy adolescent who was experiencing intermittent fevers for 1 week, and was found to be monospot positive when seen by his pediatrician. When presenting to the ED, the patient's primary complaint was urinary retention, which he experienced acutely in the middle of the night. Due to the suspicious nature of the patient's symptoms and history of present illness, the patient received a thorough workup including magnetic resonance imaging (MRI) of the patient's brain and spinal cord, which demonstrated findings consistent with ADEM. Why Should an Emergency Physician Be Aware of This? There is very little literature describing a case of ADEM in the ED where the primary manifesting symptom was urinary retention. In addition, it is important that clinicians address acute urinary retention in an otherwise healthy adolescent as a red flag, with the need to rule out concerning etiology. Copyright © 2016 Elsevier Inc. Printed in the USA. All rights reserved.

Cappell MS (2016). "Major bibliographic errors in PubMed: Personal experience among 240 publications and proposed remediation process for errors." Journal of the Medical Library Association 104(1): 83-84.

[Full-Text](#)

Department of Internal Medicine

Cappell MS, Singh D, Sage R and **Amin MB** (2016). "Resolution of isolated, aspergillus colonization in a deep esophageal ulcer in an immunocompetent patient with ulcer healing without specific antifungal therapy." Digestive Diseases and Sciences: 1-6. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Department of Pathology

Chancellor MB (2016). "Advance technology," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 155-161.

[Full-Text](#)

Department of Urology

Chancellor MB (2016). "Current drug therapy for underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 83-93.

[Full-Text](#)

Department of Urology

Chancellor MB (2016). "Epidemiology and demographics of underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 1-11.

[Full-Text](#)

Department of Urology

Chancellor MB (2016). "Neuromodulation treatment of underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 115-134.

[Full-Text](#)

Department of Urology

Chancellor MB (2016). "Surgery for underactive bladder treatment," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 135-154.

[Full-Text](#)

Department of Urology

Chancellor MB (2016). "Urodynamics evaluation of underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 25-50.

[Full-Text](#)

Department of Urology

Chancellor MB and **Diokno AC**, Eds. (2016). The Underactive Bladder. Switzerland, Springer.

[Full-Text](#)

Department of Urology

Chancellor MB, Yehoshua A, Waweru C, Globe D, Cheng IN, Campbell KL, Joshi M and Pulicharam R (2016). "Limitations of anticholinergic cycling in patients with Overactive Bladder (OAB) with urinary incontinence (UI): Results from the CONsequences of Treatment Refractory Overactive bLadder (CONTROL) study." International Urology and Nephrology: 1-8. ePub Ahead of Print.

[Full-Text](#)

Department of Urology

Purpose: To describe treatment patterns and outcomes in wet-overactive bladder (OAB) patients treated with anticholinergics. Methods: This study was a retrospective claims analysis linked to a one-time patient survey of members of a regional medical group located in California. Participants met the following criteria: received anticholinergic therapy between January 2008 and May 2012, based on pharmacy claims; had a diagnosis of OAB; and reported having ≥ 1 urinary incontinence (UI) episode per day at the time of the survey. Outcomes included the number of anticholinergics cycled through from treatment initiation until the end of follow-up (May 31, 2013); frequency of UI episodes; and patient requests for additional help for their OAB symptoms. Results: A total of 620 patients were enrolled into the study. During the follow-up period, patients cycled through 1 to 6 unique anticholinergics; 65 % of the study population used only 1 anticholinergic, while 35 % used ≥ 2 anticholinergics. Patients reported experiencing an average of 3.5 UI episodes per day (3.6, 3.3, and 3.4 episodes for 1, 2, and ≥ 3 anticholinergics used, respectively), and over 80 % of patients requested additional help for their OAB symptoms, irrespective of how many anticholinergics were attempted. Conclusion: UI symptom burden and adherence to therapy did not change as patients attempted more anticholinergic therapies. These results suggest that for patients who remain incontinent after attempting an anticholinergic, cycling on additional anticholinergics may not provide any additional benefit, resulting in sub-optimal care. © 2016 Springer Science+Business Media Dordrecht

Chehab M, Friedlander JA, **Handel J, Vartanian S, Krishnan A, Wong CYO, Korman H, Seifman B** and **Ciacchi J** (2016). "Percutaneous cryoablation vs partial nephrectomy: Cost comparison of T1a tumors." Journal of Endourology 30(2): 170-176.

[Request Form](#)

Department of Diagnostic Radiology and Molecular Imaging

Department of Urology

Purpose: To compare cost of percutaneous cryoablation vs open and robot-assisted partial nephrectomy of T1a renal masses from the hospital perspective. Materials and Methods: We retrospectively compared cost, clinical and tumor data of 37 percutaneous cryoablations to 26 open and 102 robot-assisted partial nephrectomies. Total cost was the sum of direct and indirect cost of procedural and periprocedural variables. Clinical data included demographics, Charlson Comorbidity Index (CCI), hospitalization time, complication rate, ICU admission rate, and 30-day readmission rates. Tumor data included size, RENAL nephrometry score, and malignancy rate. Student's t-test was used for continuous variables and Fisher's exact or chi-square tests for categorical data. Results: Mean total cost was lower for percutaneous cryoablation than open or robot-assisted partial nephrectomy: \$6067 vs \$11392 or \$11830 ($p < 0.0001$) with lower cost of procedure room: \$1516 vs \$3272 or \$3254 ($p < 0.0001$), room and board: \$95 vs \$1907 or \$1106 ($p < 0.0001$), anesthesia: \$684 vs \$1223 or \$1468 ($p < 0.0001$), and laboratory/pathology fees: \$205 vs \$804 or \$720 ($p < 0.0001$). Supply and device cost was higher than open: \$2596 vs \$1352 ($p < 0.0001$), but lower than robot-assisted partial nephrectomy: \$3207 ($p = 0.002$). Mean hospitalization times were lower for percutaneous cryoablation ($p < 0.0001$), while age and CCI were higher ($p < 0.0001$). No differences in tumor size, nephrometry score, malignancy rate complication, ICU, or 30-day readmission rates were observed. Conclusion: Percutaneous cryoablation can be performed at significantly lower cost than open and robotic partial nephrectomies for similar masses. © Copyright 2016, Mary Ann Liebert, Inc. 2016.

Chehab M, **Jafri S**, Richards M and **Roy A** (2016). "Transosseous biopsy: Techniques, outcomes, and complications in 50 cases." Journal of Vascular and Interventional Radiology 27(3): S169.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Purpose: The goal of this study was to describe the techniques, outcomes and complication rates of trans-osseous biopsy via several different approaches. Materials: Data from 50 consecutive transosseous biopsies performed in 50 patients (mean age 66.1 years, 69% female) were retrospectively compiled into a HIPAA compliant database. Biopsy adequacy was defined as sufficient tissue sample according to the original pathology report and retrospective radiologic-pathologic concordance between final tissue diagnosis and pre-procedure imaging. The amount of anesthetic, radiologist contact and total encounter time were reported as mean +/- range. Complications included rates of: pneumothorax, pneumo mediastinum, hemoptysis, hospital admission, additional percutaneous or surgical intervention, fracture, osteomyelitis, 30 day readmission and tract seeding. Results: For each approach, the number of adequate biopsies per attempt was: trans sternal: 14/17, transrib: 6/7, trans scapular: 6/6, trans spinal: 8/9 (trans transverse process: 4/4, trans vertebral: 3/4, trans spinous process: 1/1), trans iliac: 7/7 and trans sacral: 4/4. Mean anesthetic dose was 3.4 mg Midazolam (range 1-12mg) and 177 mcg Fentanyl (range 50-500mg). Mean radiologist contact time was 45 minutes (range 30-75 minutes). Mean total encounter time was 3.6 hours (range 2.4-5.9 hours). Pneumothoracies were seen in 10/39 transthoracic cases with 5 patients requiring autologous blood patches between 3-7ml. 8 patients had pneumomediastinum, 7 of which were of no clinical significance. There was zero incidence of chest tube placement, surgical intervention or 30-day admission. Cross sectional imaging through the biopsy site was available in 43/50 patients (mean follow 17.9 months, range 1-62 months) with zero cases of osteomyelitis, fracture or tract seeding. Conclusions: Transosseous biopsy is a safe and effective means tissue sampling various lesions and can be utilized in cases where a routine approach is not possible. In our case series, we report a 90% accuracy rate with only minor complications, reasonable anesthetic requirements and operator time.

Chermansky CJ and **Chancellor MB** (2016). "Use of botulinum toxin in urologic diseases." Urology 91(May Supplement): 21-32.

[Full-Text](#)

Department of Urology

OnabotulinumtoxinA (onaBoNTA) is approved by the US Food and Drug Administration for the treatment of urinary incontinence due to neurogenic detrusor overactivity and for the treatment of refractory overactive bladder. As a treatment for benign prostatic hyperplasia, onaBoNTA showed no difference over placebo in recently published studies. In contrast, treating interstitial cystitis/bladder pain syndrome with onaBoNTA has shown efficacy, and the current American Urological Association guideline for the diagnosis and treatment of interstitial cystitis/bladder pain syndrome lists onaBoNTA as fourth-line treatment. This comprehensive review will present all studied applications of onaBoNTA within the lower urinary tract.

Cheruvu C, Precious B, Naoum C, Blanke P, Ahmadi A, Soon J, Arepalli C, Gransar H, Achenbach S, Berman DS, Budoff MJ, Callister TQ, Al-Mallah MH, Cademartiri F, **Chinnaiyan K**, Rubinshtein R, Marquez H, DeLago A, Villines TC, Hadamitzky M, Hausleiter J, Shaw LJ, Kaufmann PA, Cury RC, Feuchtner G, Kim YJ, Maffei E, **Raff G**, Pontone G, Andreini D, Chang HJ, Min JK and Leipsic J (2016). "Long term prognostic utility of coronary CT angiography in patients with no modifiable coronary artery disease risk factors: Results from the 5 year follow-up of the CONFIRM International Multicenter Registry." Journal of Cardiovascular Computed Tomography 10(1): 22-27.

[Full-Text](#)

Department of Internal Medicine

Background: Coronary computed tomography angiography (coronary CTA) can prognosticate outcomes in patients without modifiable risk factors over medium term follow-up. This ability was driven by major adverse cardiovascular events (MACE). Objective: Determine if coronary CTA could discriminate risk of mortality with longer term follow-up. In addition we sought to determine the long-term relationship to MACE. Methods: From 12 centers, 1884 patients undergoing coronary CTA without prior coronary artery disease (CAD) or any modifiable CAD risk factors were identified. The presence of CAD was classified as none (0% stenosis), mild (1% to 49% stenosis) and obstructive ($\geq 50\%$ stenosis severity). The primary endpoint was all-cause mortality and the secondary endpoint was MACE. MACE was defined as the combination of death, nonfatal myocardial infarction, unstable angina, and late target vessel revascularization (>90 days). Results: Mean age was 55.6 ± 14.5 years. At mean 5.6 ± 1.3 years follow-up, 145(7.7%) deaths occurred. All-cause mortality demonstrated a dose-response relationship to the severity and number of coronary vessels exhibiting CAD. Increased mortality was observed for >1 segment non-obstructive CAD (hazard ratio [HR]:1.73; 95% confidence interval [CI]: 1.07-2.79; $p = 0.025$), obstructive 1&2 vessel CAD (HR: 1.70; 95% CI: 1.08-2.71; $p = 0.023$) and 3-vessel or left main CAD (HR: 2.87; 95% CI: 1.57-5.23; $p = 0.001$). Both obstructive CAD (HR: 6.63; 95% CI: 3.91-11.26; $p < 0.001$) and non-obstructive CAD (HR: 2.20; 95% CI: 1.31-3.67; $p = 0.003$) predicted MACE with increased hazard associated with increasing CAD severity; 5.60% in no CAD, 13.24% in non-obstructive and 36.28% in obstructive CAD, $p < 0.001$ for trend. Conclusions: In individuals being assessed for CAD with no modifiable risk factors, all-cause mortality in the long term (>5 years) was predicted by the presence of more than 1 segment of non-obstructive plaque, obstructive 1- or 2-vessel CAD and 3 vessel/left main CAD. Any CAD, whether non-obstructive or obstructive, predicted MACE over the same time period. © 2015 Society of Cardiovascular Computed Tomography.

Chittick P, Koppisetty S, Lombardo L, Vadhavana A, Solanki A, Cumming K, Agbotov V, Karl C and **Band J** (2016). "Assessing patient and caregiver understanding of and satisfaction with the use of contact isolation." American Journal of Infection Control. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Background: Contact isolation is a method used for limiting the spread of antimicrobial-resistant organisms when caring for patients. This policy has been linked to several adverse outcomes and less patient satisfaction. We assessed patient and caregiver understanding and satisfaction with the use of contact isolation. Methods: A prospective survey of >500 patients in contact isolation at our institution was performed during 2014. Participants responded to a series of statements relating to contact isolation, using a 5-point Likert scale. Responses were assessed for overall positivity or negativity and further compared

according to floor type or designation. Results: Of the patients, 48.7% responded to the survey; 70 caregivers also responded. Patient and caregiver responses were similar and were positive overall. Most respondents felt safer because of the use of contact isolation and because it prevented infections. A smaller majority of respondents also thought the policy was adequately explained to them and adhered to by staff. Conclusions: In the largest collection of respondents surveyed to date about contact isolation and its impact on them, the policy was viewed positively, both by patients and caregivers. There is still room for improvement in the area of patient education regarding the use of contact isolation. © 2015 Association for Professionals in Infection Control and Epidemiology, Inc.

Citil-Dogan A, Wayne S, **Bauer S**, **Ogunyemi D**, Kulkarni SK, Maulik D, **Carpenter CF** and **Bahado-Singh RO** (2016). "The Zika virus and pregnancy: Evidence, management, and prevention." Journal of Maternal-Fetal & Neonatal Medicine: 1-41. ePub Ahead of Print.

[Full-Text](#)

Department of Obstetrics and Gynecology

Department of Internal Medicine

OBJECTIVE: To comprehensively review the available evidence and existing consensus reports and guidelines regarding the pregnancy and reproductive implications of the mosquito transmitted Zika virus infection. A primary focus was to provide pertinent information to aid clinicians in the management of pregnancies at risk for, exposed to or with confirmed Zika virus infection (ZIV). METHOD: An extensive literature review was performed using Pubmed. Practice guidelines, and consensus reports were accessed from international, national and professional organizations' websites. The clinical articles for ZIKV infection testing varied from case reports to small epidemiologic studies. RESULTS: A ZIKV epidemic has been declared in several countries in the Americas. Fifty-two travel associated ZIKV infection cases have been reported throughout the United States (as of February 10, 2016). The consequences of congenital fetal/newborn ZIKV infection could potentially have devastating consequences including miscarriage, fetal death, and major anomalies such as microcephaly, brain and brain-stem defects and long-term neurologic sequelae. While not definitive, current evidence suggest the existence of non-vector-borne transmission through sexual activity with an infected male partner. For women at risk for sexual transmission condom use is advised, especially during pregnancy. CONCLUSION: While ZIKV infection appears to be a mild disease in the general population the potential consequences to the fetus and newborn could be profound. Management guidelines are currently evolving and will be significantly impacted as new evidence develops. It is therefore imperative that obstetric health care providers keep abreast of this rapidly evolving information landscape that has so far characterized this outbreak.

Clark D, McLaughlin P, Woo E, **Hwang K**, Hurtz S, Ramirez L, Eastman J, Dukes R-M, Kapur P and DeRamus T (2016). "Novel verbal fluency scores and structural brain imaging for prediction of cognitive outcome in mild cognitive impairment." Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring. ePub Ahead of Print.

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OUIWB Medical Student Author

Codino J, Torres ME, **Rubin A** and Jackson-Menaldi C (2016). "Automated electroglottographic inflection events detection. A pilot study." Journal of Voice. ePub Ahead of Print.

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Department of Surgery

Dajee KP, Abbey AM and **Williams GA** (2016). "Management of dislocated intraocular lenses in eyes with insufficient capsular support." Current Opinion in Ophthalmology 27(3): 191-195.

[Full-Text](#)

Department of Ophthalmology

PURPOSE OF REVIEW: To review the different techniques for management of dislocated intraocular lenses in eyes with insufficient capsular support with a focus on recent studies and techniques reported in the literature. RECENT FINDINGS: Visual outcomes generally improve regardless of intraocular lens selection and surgical techniques. New techniques include sutureless scleral fixation with the use of posterior segment

tools and use of hybrid instrumentation for 25-/27-gauge vitrectomy. SUMMARY: IOL selection and surgical technique should be tailored to each patient based on the preexisting disorder that led to the dislocation. The decision ultimately depends on surgeon comfort and experience with the procedure, and the presenting pathology. Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved.

David JA and **Huang JZ** (2016). "Diagnostic utility of flow cytometry analysis of reactive T cells in nodular lymphocyte-predominant hodgkin lymphoma." *American Journal of Clinical Pathology* 145(1): 107-115.

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Department of Pathology

Objectives: This study aims to define the diagnostic utility of flow cytometric features of T cells in nodular lymphocyt predominant Hodgkin lymphoma (NLP HL). Methods: Cases were retrospectively identified based on diagnosis with NLP HL (n=30 samples), classic Hodgkin lymphoma (CHL; n=33), and reactive lymphoid hyperplasia (RLH; n=43). Pathology slides were reviewed. Flow cytometry list mode data were reanalyzed. Results: The mean proportion of CD4CD8T cells (8.4%) in cases of NLP HL was significantly higher than seen in CHL (1.0%) or RLH (0.6%). Of the T cells, 28.4% were CD57in NLP HL, significantly higher (P.05) than in CHL (3.2%) or RLH (3.2%). Based on receiver operating characteristic curve analysis, when using a cutoff of 3.0% of CD4CD8T cells, the diagnostic sensitivity for NLP HL is 83.3% with a specificity of 97.4%. The diagnostic sensitivity was 96.7% with a specificity of 98.7% when using a cutoff of 12% for CD57T cells. Conclusions: Increased portions of CD57T cells and CD4CD8T cells are highly suggestive of the possibility of NLP HL. In addition, NLP HL diagnosis appears unlikely if neither CD57T cells nor CD4CD8T cells are increased. Future prospective studies including cases of progressive transformation of germinal center and T-cell/histiocyte-rich large B-cell lymphoma will further define the utility of flow cytometry of T cells in NLP HL. © American Society for Clinical Pathology, 2016. All rights reserved.

Davila-Grijalva H, Troya AH, Kring E, DeRidder J and **Maisels MJ** (2016). "How much do formula-fed infants take in the first 2 days?" *Clinical Pediatrics*. ePub Ahead of Print.

[Full-Text](#)

Department of Pediatrics

OBJECTIVE: To document the intake of exclusively formula-fed newborns during the first 2 days of life. METHODS: We enrolled a cohort of 50 healthy newborns ≥ 37 weeks' gestation and documented their daily formula intake until discharge. We surveyed pediatricians regarding their assessment of the intake of formula fed infants. RESULTS: In all, 37 of 50 newborns stayed for at least 48 hours. The mean \pm SD gestational age was 39.5 \pm 0.88 weeks. Mean \pm SD formula intake for the first 48 hours (n = 37) was 57.2 \pm 20.4 mL/kg/d and mean weight loss at 45.7 \pm 8.8 hours, was 2.7% of birth weight. Pediatricians underestimated the amounts taken by these infants. CONCLUSIONS: In the first 2 days, healthy term newborns, fed formula ad lib, consume about 115 mL/kg, about 2 to 3 times as much as breastfed infants, and they lose only 2.7% of their birthweight by 48 hours. Most pediatricians underestimate the intake of formula-fed infants.

De Souza Silva CG, **Franklin BA**, Forman DE and Araújo CGS (2016). "Influence of age in estimating maximal oxygen uptake." *Journal of Geriatric Cardiology* 13(2): 126-131.

[Request Form](#)

Department of Internal Medicine

Objective To assess the influence of age on the error of estimate (EE) of maximal oxygen uptake ($VO_2\max$) using sex and population specific-equations in cycle ergometer exercise testing, since estimated $VO_2\max$ is associated with a substantial EE, often exceeding 20%, possibly due to intrinsic variability of mechanical efficiency. Methods 1850 adults (68% men), aged 18 to 91 years, underwent maximal cycle ergometer cardiopulmonary exercise testing. Cardiorespiratory fitness (CRF) was assessed relative to sex and age [younger (18 to 35 years), middle-aged (36 to 60 years) and older (≥ 60 years)]. $VO_2\max$ [mL.(kg.min)⁻¹] was directly measured by assessment of gas exchange and estimated using sex and population specific-equations. Measured and estimated values of $VO_2\max$ and related EE were compared among the three age- and sex-specific groups. Results Directly measured $VO_2\max$ of men and women were 29.5 ± 10.5 mL.(kg.min)⁻¹ and 24.2 ± 9.0 mL.(kg.min)⁻¹ (P ≤ 0.01). EE [mL.(kg.min)⁻¹] and percent errors (%E) for men

and women had similar values, 0.5 ± 3.2 and 0.4 ± 2.9 mL.(kg.min)⁻¹, and $0.8 \pm 13.1\%$ and $-1.7 \pm 15.4\%$ (P > 0.05), respectively. EE and %E for each age-group were, respectively, for men: younger = 1.9 ± 4.1 mL.(kg.min)⁻¹ and $3.8 \pm 10.5\%$, middle-aged = 0.6 ± 3.1 mL.(kg.min)⁻¹ and $0.4 \pm 10.3\%$, older = 0.2 ± 2.7 mL.(kg.min)⁻¹ and $-4.2 \pm 16.6\%$ (P < 0.01); and for women: younger = 1.2 ± 3.1 mL.(kg.min)⁻¹ and $2.7 \pm 10.0\%$, middle-aged = 0.7 ± 2.8 mL.(kg.min)⁻¹ and $0.5 \pm 11.1\%$, older = -0.8 ± 2.3 mL.(kg.min)⁻¹ and $-9.5 \pm 22.4\%$ (P < 0.01). Conclusion VO₂max were underestimated in younger age-groups and were overestimated in older age groups. Age significantly influences the magnitude of the EE of VO₂max in both men and women and should be considered when CRF is estimated using population specific equations, rather than directly measured. © 2016 JGC All rights reserved.

de Vries PS, Chasman DI, Sabater-Lleal M, Chen MH, Huffman JE, Steri M, Tang WH, Teumer A, Marioni RE, Grossmann V, Hottenga JJ, Trompet S, Muller-Nurasyid M, Zhao JH, Brody JA, Kleber ME, Guo XQ, Wang JJ, Auer PL, Attia JR, Yanek LR, Ahluwalia TS, Lahti J, Venturini C, Tanaka T, Bielak LF, Joshi PK, Rocanin-Arjo A, Kolcic I, Navarro P, Rose LM, Oldmeadow C, Riess H, Mazur J, Basu S, **Goel A**, Yang Q, Ghanbari M, Willemsen G, Rumley A, Fiorillo E, de Craen AJM, Grotevendt A, Scott R, Taylor KD, Delgado GE, Yao J, Kifley A, Kooperberg C, Qayyum R, Lopez LM, Berentzen TL, Raikonen K, Mangino M, Bandinelli S, Peyser PA, Wild S, Tregouet DA, Wright AF, Marten J, Zemunik T, Morrison AC, Sennblad B, Tofler G, de Maat MPM, de Geus EJC, Lowe GD, Zoledziewska M, Sattar N, Binder H, Volker U, Waldenberger M, Khaw KT, McKnight B, **Huang J**, Jenny NS, Holliday EG, Qi LH, McEvoy MG, Becker DM, Starr JM, Sarin AP, Hysi PG, Hernandez DG, Jhun MA, Campbell H, Hamsten A, Rivadeneira F, McArdle WL, Slagboom PE, Zeller T, Koenig W, Psaty BM, Haritunians T, Liu JM, Palotie A, Uitterlinden AG, Stott DJ, Hofman A, Franco OH, Polasek O, Rudan I, Morange PE, Wilson JF, Kardia SLR, Ferrucci L, Spector TD, Eriksson JG, Hansen T, Deary IJ, Becker LC, Scott RJ, Mitchell P, Marz W, Wareham NJ, Peters A, Greinacher A, Wild PS, Jukema JW, Boomsma DI, Hayward C, Cucca F, Tracy R, Watkins H, Reiner AP, Folsom AR, Ridker PM, O'Donnell CJ, Smith NL, Strachan DP and Dehghan A (2016). "A meta-analysis of 120 246 individuals identifies 18 new loci for fibrinogen concentration." *Human Molecular Genetics* 25(2): 358-370.

[Full-Text](#)

Department of Internal Medicine

Department of Pathology

Genome-wide association studies have previously identified 23 genetic loci associated with circulating fibrinogen concentration. These studies used HapMap imputation and did not examine the X-chromosome. 1000 Genomes imputation provides better coverage of uncommon variants, and includes indels. We conducted a genome-wide association analysis of 34 studies imputed to the 1000 Genomes Project reference panel and including similar to 120 000 participants of European ancestry (95 806 participants with data on the X-chromosome). Approximately 10.7 million single-nucleotide polymorphisms and 1.2 million indels were examined. We identified 41 genome-wide significant fibrinogen loci; of which, 18 were newly identified. There were no genome-wide significant signals on the X-chromosome. The lead variants of five significant loci were indels. We further identified six additional independent signals, including three rare variants, at two previously characterized loci: FGB and IRF1. Together the 41 loci explain 3% of the variance in plasma fibrinogen concentration.

Dereski M and **Engwall K** (2016). "Tips for effectively presenting your research via slide presentation (Peer Reviewed)." MedEdPortal Publication No. 10355

[Full-Text](#)

Department of Biomedical Sciences (OU)

Medical Library

The Oakland University William Beaumont (OUWB) School of Medicine is a relatively new medical school that graduated its inaugural class in May of 2015. As OUWB was developed, it was decided that we would institute a mandatory scholarly concentration discipline for all students. This program was called the Capstone Program. During the previous 4 years, a research design course was instituted for the first-year students. During the second-year curriculum, the program director developed a series of sessions that would facilitate the students disseminating the findings resulting from their research projects. The materials submitted here were developed as resources for the Capstone sessions. These materials have been utilized and refined for the past 2 years with the classes of 2016 and 2017.

Dereski MO (2016). "Medical student research: Program structure, feedback, and outcomes at a new medical school." Medical Science Educator: 1-8. ePub Ahead of Print.

[Request Form](#)

Department of Biomedical Sciences (OU)

Ding D, Starke RM, Kano H, Mathieu D, Huang P, Kondziolka D, Feliciano C, Rodriguez-Mercado R, Almodovar L, **Grills IS**, Silva D, Abbassy M, Missios S, Barnett GH, Lunsford LD and Sheehan JP (2016). "Radiosurgery for cerebral arteriovenous malformations in a randomized trial of unruptured brain arteriovenous malformations (ARUBA)-eligible patients: A multicenter study." Stroke 47(2): 342-349.

[Full-Text](#)

Department of Radiation Oncology

BACKGROUND AND PURPOSE— The benefit of intervention for patients with unruptured cerebral arteriovenous malformations (AVMs) was challenged by results demonstrating superior clinical outcomes with conservative management from A Randomized Trial of Unruptured Brain AVMs (ARUBA). The aim of this multicenter, retrospective cohort study is to analyze the outcomes of stereotactic radiosurgery for ARUBA-eligible patients. **METHODS—** We combined AVM radiosurgery outcome data from 7 institutions participating in the International Gamma Knife Research Foundation. Patients with ≥ 12 months of follow-up were screened for ARUBA eligibility criteria. Favorable outcome was defined as AVM obliteration, no postradiosurgery hemorrhage, and no permanently symptomatic radiation-induced changes. Adverse neurological outcome was defined as any new or worsening neurological symptoms or death. **RESULTS—** The ARUBA-eligible cohort comprised 509 patients (mean age, 40 years). The Spetzler–Martin grade was I to II in 46% and III to IV in 54%. The mean radiosurgical margin dose was 22 Gy and follow-up was 86 months. AVM obliteration was achieved in 75%. The postradiosurgery hemorrhage rate during the latency period was 0.9% per year. Symptomatic and permanent radiation-induced changes occurred in 11% and 3%, respectively. The rates of favorable outcome, adverse neurological outcome, permanent neurological morbidity, and mortality were 70%, 13%, 5%, and 4%, respectively. **CONCLUSIONS—** Radiosurgery may provide durable clinical benefit in some ARUBA-eligible patients. On the basis of the natural history of untreated, unruptured AVMs in the medical arm of ARUBA, we estimate that a follow-up duration of 15 to 20 years is necessary to realize a potential benefit of radiosurgical intervention for conservative management in unruptured patients with AVM.

Diokno AC (2016). "Evaluation and diagnosis of underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). The Underactive Bladder. Springer. pp: 13-24.

[Full-Text](#)

Department of Urology

Folberg R (2016). "Naming the precursors of conjunctival melanoma." American Journal of Ophthalmology 162(Feb): 1-2.

[Full-Text](#)

Administration

Foluso O, Glick A, **Stender M** and **Jaiyesimi I** (2016). "Ibrutinib as a bruton kinase inhibitor in the management of chronic lymphocytic leukemia: A new agent with great promise." Clinical Lymphoma, Myeloma and Leukemia 16(2): 63-69.

[Full-Text](#)

Department of Internal Medicine

The recent discovery of the role of the B-cell antigen receptor (BCR) signaling pathway in the propagation and maintenance of both normal B-cell function and in B-cell malignancies has highlighted the importance of many protein kinases involved in BCR signal propagation. Considerable research attention has focused on the Bruton tyrosine kinase (BTK) as a potential therapeutic target in B-cell malignancies. Treatment paradigms including ibrutinib, a potent inhibitor of the BTK recently approved by the US Food and Drug Administration, have significantly improved disease outcome among high-risk and relapsed/refractory cases

of chronic lymphocytic leukemia. This has provided additional treatment options, especially among the elderly, where improved disease response has been accompanied by more manageable treatment-associated toxicity than commonly found with chemoimmunotherapy. In this review, we provide a synopsis of the current data on the efficacy and clinical utilization of ibrutinib and management of its resistance in the treatment of chronic lymphocytic leukemia. © 2015 Elsevier Inc.

Fong A, Yang D, Zaki MN, Duffy J, King E, Pan D and **Ogunyemi DA** (2016). "Teen pregnancy, substandard access to prenatal care, and adverse pregnancy outcome." [American Journal of Obstetrics and Gynecology](#) 214(1): S222-S223.

[Full-Text](#)

Department of Obstetrics and Gynecology

OBJECTIVE: To describe sociodemographic and obstetrical outcomes of teen compared to non-teen pregnancies. STUDY DESIGN: A retrospective cohort study was performed using California discharge data. Over 4.4 million deliveries from 2001- 2009 were analyzed. Teen pregnancies were defined as those occurring at ≥ 19 years of age. Outcomes were identified via ICD-9-CM codes. Logistic regression was performed to adjust for confounders. RESULTS: 8.9% of all deliveries were to teen pregnancies (n=393,132). African-Americans (5.1% vs. 3.8%) and Hispanics (56.0% vs 41.1%) each comprised a higher proportion of teen pregnancies. Few teens had private insurance (18%) compared to non-teens (52%). Teens were more likely to have insufficient prenatal care (3.5% vs. 1.6%). After covariate adjustment, teens had lower rates of certain adverse obstetrical outcomes compared to non-teens; gestational diabetes (GDM) (OR 0.2), previa (OR 0.7), macrosomia (OR 0.6), shoulder dystocia (OR 0.7), and thromboembolism (0.6). The cesarean delivery (CD) rate was lower in teens (19% vs. 30%, OR 0.6). Several adverse outcomes were found to be increased in teens; preterm delivery (OR 1.2), fetal growth restriction (FGR) (OR 1.4), chorioamnionitis (OR 1.3), and endometritis (OR 1.8). All hypertensive diseases were increased, including gestational hypertension (OR 1.3), mild preeclampsia (OR 1.6), severe preeclampsia, (OR 1.3), and eclampsia (OR 2.9). CONCLUSION: Nearly 10% of all pregnancies in California are teen pregnancies. The majority of teens lack insurance, likely leading to increased rates of poor prenatal care. Historically, pregnancies at a younger age have been thought to carry less risk of pregnancy-related morbidity. Our results demonstrate that although certain perinatal outcomes are improved such as CD rates and GDM in teen pregnancies, several morbidities are increased, including all hypertensive disorders of pregnancy, with most notably a nearly 3-fold higher rate of eclampsia. This may be related to poor access to prenatal care; hence, optimization of access to care for teen pregnancies is of utmost importance, especially given that several of these conditions (preeclampsia, FGR) can be screened for and managed by obstetrical care. (Table Presented).

Fortunato J, Wasserman J and Hankin M (2016). "Students' understandings of their ethical obligations to their cadavers after their first anatomy lab: A qualitative study." [The FASEB Journal](#) 30(1 Supplement): 88.81.

[Full-Text](#)

OUWB Medical Student Author

Department of Biomedical Sciences (OU)

First year medical students completed video-recorded reflections as an assignment for their ethics course. They were prompted to reflect on both their initial feelings as they started their first dissection and their ethical responsibilities to their cadavers. These reflections were analyzed using a schema akin to Grounded Theory, a qualitative methodology that allows data driven findings to systematically emerge from narrative data without specifying hypothesis in advance. This approach sheds light on themes related to complex social and emotional experiences that quantitative research methodologies (like surveys) have difficulty capturing because they necessarily reduce students' holistic experiences to a narrower set of generalizable constructs measured with predetermined multiple-choice options. This research showed that initial reactions to first dissection tend to follow one of two patterns: Some students showed an initial sense of concern, worry, or uneasiness as they entered the cadaver lab and began the dissection. However, the technical aspects of dissection eased their concerns as time went on. In contrast, other students report being focused on the technical demands and learning objectives such that they had no reservations upon entering the lab or beginning the dissection. However, at some point later on, an awareness of cadaveric humanity and the gravity of donation came upon them. In regards to ethical obligations, a responsibility to "respect" the cadaver, though for various underlying reasons, was nearly unanimous amongst students. Additionally, an

obligation to maintain donor privacy, an obligation to treat the cadaver "like a patient," and reverence toward the donor's family members were among the more commonly referenced reasons for respect of the cadaver. Other commonly cited ethical responsibilities included a duty to be academically prepared for the anatomy dissection in an effort to learn as much as possible from the gift of cadaveric donation. These reported ethical obligations, when understood against the broader backdrop of a number of other potential ethical duties, suggests that students' ethical relationship with the cadaver is developmental and could be encouraged in its growth and maturity. This analysis of student narrative provides unique insight into the first-year medical student's sense of ethical obligation and emotional response in the cadaver lab. Moving forward, anatomical sciences faculty can use this research in an effort to tailor the methodology in which they address medical students' sensitivities and emotional awareness within anatomy programs. Support or Funding Information none

Francesco C, Angelo L, Di Pasquale Roberto SB, Emanuele S, Providenza D, Jurjus R, Gerges-Geagea A, **Hajj Hussein I** and Mallat S (2016). "Association between *helicobacter pylori* infection and pathological oral manifestations." Journal of International Translational Medicine 4(1): 9-15.

[Request Form](#)

Department of Biomedical Sciences (OU)

Francis JH, Wiesner T, Milman T, Won H, Lin A, Lee V, Albert D, **Folberg R**, Berger M and Char D (2016). "Investigation of somatic GNAQ, GNA11, BAP1 and SF3B1 mutations in ophthalmic melanocytomas." Ocular Oncology and Pathology 2(3): 171-177.

[Request Form](#)

Administration

Franklin BA (2016). "Simulated performance testing to determine the aortic dissection patient's potential for vigorous physical activity." Baylor University Medical Center Proceedings 29(2): 154-156.

[Full-Text](#)

Department of Internal Medicine

Gaines N, Gupta P, **Hu JC**, Killinger KA, **Boura JA**, **Bartley J**, **Gilleran J** and **Peters KM** (2016). "Does uppermedial placement of a sacral lead affect neuromodulation outcomes? A radiologic study." Neurourology and Urodynamics 35(23): S65.

[Full-Text](#)

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Department of Urology

Introduction: Significant emphasis has been placed on ideal radiologic placement of the sacral tined lead in the upper medial aspect of the S3 foramen. However, no study has examined radiologic parameters to determine how placement impacts treatment response. In this study we examined the location of sacral leads compared to outcomes. Methods: Radiologic images from patients enrolled in our prospective neuro modulation database were analyzed. Patients with incomplete data or x-rays where the foramen were not clearly visible were excluded. A standardized approach was used to determine the lead location within the S3 foramen. Lead location was compared to clinical outcomes including voltage data, Interstitial Cystitis Symptom/Problem Index (ICSIPI), Overactive Bladder Symptom Severity and Health Related Quality of Life questionnaires (OAB-q SS, OABq-HRQOL) 6 months post-implant. Descriptive statistics, Pearson's Chi-square, Fischer's Exact, Wilcoxon rank tests, and repeated measures were performed. Results: Of 86 patients with complete radiologic data, 38 leads were placed in the upper medial aspect of the foramen and 48 were not. All leads were located in the medial half of the foramen. A lead was considered to be in the but those in the upper medial aspect were within the medial 1/10th of the for a men when it was located above the hillock and within the medial-most 10% of the foramen. No significant differences were noted in baseline demographics or rate of conversion to stage II implantation. In both cohorts, > 75% of the leads implanted had motor response on four electrodes. Median voltage did not significantly differ and was 2 V for leads 0, 1, and 2 and 4V for lead 3 in both cohorts. ICSI-PI, OABq-SS and OABq-HRQOL scores were significantly worse

in the upper medial group at baseline, but all groups improved over 6 months ($p < 0.0001$, $p < 0.002$ and $P = 0.0018$, respectively). In both cohorts, approximately 55% of patients were moderately/ markedly improved on a global response assessment at 6 months and the majority would recommend the treatment to a friend. Conclusion: This is the first study to analyze the impact of lead position in the foramen on clinical outcomes. Placement of a sacral lead in the upper medial aspect of the foramen does not appear to affect overall neuro modulation outcomes.

Gaines N, Gupta P, Khourdaji IS, Parikh K, Killinger KA, Ehlert M and **Sirls LT** (2016). "Radiographic misdiagnoses after periurethral bulking agents." *Neurourology and Urodynamics* 35(23): S103-S104.

[Full-Text](#)

Department of Urology

Introduction: Injectable urethral bulking agents are utilized in managing stress urinary incontinence (SUI). Urological or other symptoms may prompt pelvic imaging at a later date. Radiographic findings pertaining to these injectables may be incorrectly interpreted leading to unnecessary follow-up imaging, urologic consultation or even procedures. Methods: We identified patients that underwent periurethral injection for SUI at our institution between the years 2005 to 2015. Patient charts were reviewed for any pelvic imaging with plain X-ray (XR), computed tomography (CT), magnetic resonance imaging (MRI) or ultrasound (US) performed after their injection therapy. Radiologic reports were reviewed for any description that either alluded to the injection therapy or misdiagnosed the injections. Results: 541 patients were identified that underwent a total of 766 injection sessions. Injections were performed with either calcium hydroxyapatite (Coaptite) or pyrolytic carbon-coated beads (Durasphere). 28 were excluded due to incorrect coding or incomplete information. 223/513 (43%) patients had no additional imaging after their injections. 214/513 (42%) patients had additional imaging but injectables were not mentioned in the reports. 76/513 (15%) patients had 109 abdominal or pelvic imaging studies, which commented on findings associated with injection therapy: 83 CT images, 7 MRI images, 14 X-ray images, and 5 ultrasound images were reviewed. In 43/109 (39%) images radiology correctly interpreted findings as associated with periurethral injection therapy. 66/109 (61%) incorrect diagnoses based on imaging included: bladder calculus (18), calcifications near urethra (23), urethral diverticulum (8), hypodense areas suspicious for abscess or soft tissue density (7), unknown nodular densities in pelvis (3), mass near bladder concerning for tumor (3), cystic structure near the urethra that may be a dilated periurethral gland (1), calcification in urethra that may be chronic inflammation (1), hypodense cystic area (1), bladder diverticulum (1). Conclusion: Periurethral bulking agent injections are commonly misdiagnosed by radiologists as bladder calculi, urethral diverticula with or without stones, or other pelvic pathology. This occurred across different imaging modalities and reflects the lack of familiarization by radiologists with the radiologic characteristics of periurethral bulking agents.

Gaines N, Gupta P, Killinger KA, **Boura JA** and **Sirls LT** (2016). "Surgical outcomes after pelvic organ prolapse repair with hysteropexy using transvaginal mesh." *Neurourology and Urodynamics* 35(23): S85.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Urology

Introduction: Instead of pursuing concomitant hysterectomy, some women are opting for uterine-preservation when undergoing pelvic organ prolapse (POP) repair. At our institution we have significant experience with transvaginal mesh repair (TVM). In this study, we examine outcomes for TVM repair of POP in patients who have intact uteri. Methods: Our retrospective transvaginal mesh database was queried for women who underwent consecutive pelvic prolapse repair with no history of hysterectomy and no concomitant hysterectomy from 7/2009 to 12/2013. Demographics, baseline characteristics, perioperative outcomes, recurrent prolapse, and need for additional surgeries were evaluated. Descriptive statistics were performed. Results: Sixty-six patients with no history of hysterectomy and no concomitant hysterectomy were identified that underwent TVM pelvic organ prolapse repair with Elevate™. 47/66 underwent anterior compartment repair, 7/66 had posterior repair, and 12/66 had anterior and posterior compartments repaired. Mean age was 70.9 yrs ± 9.3. The majority of patients (59/60; 98%) were postmenopausal and 10/66 (15%) had a history of prior prolapse repair. At baseline, 58/63 had anterior prolapse (46/53 Grade 3 or 4), 26/62 had posterior prolapse, and 23/62 had uterine prolapse. The first follow-up visit occurred at an

average of 33 days postoperatively. 61/66 patients returned for the first postoperative visit; 1 patient was noted to have Grade 1 anterior prolapse, 2 patients had Grade 1 posterior prolapse, and no patients had recurrent uterine prolapse. At an average follow-up of 231 days, 6/52 had anterior prolapse (5 Grade 1 and 1 Grade 2), 7/52 had posterior prolapse (7 Grade 1), and 2/52 had uterine prolapse (2 Grade 2). 3/51 patients complained of symptomatic bulge at the second visit. 13/57 patients underwent a reoperation for any reason and the majority were related to stress urinary incontinence treatment. Only 1 patient underwent a robotic sacrohysteropexy for recurrent apical prolapse. Conclusion: Patients who choose uterine sparing transvaginal mesh POP repair can have good surgical outcomes 6-8months postoperatively. In our cohort, only one patient required reoperation for recurrent uterine prolapse. Further study is needed regarding long-term outcomes with uterine-sparing surgery.

Gaines N, Gupta P and **Sirls LT** (2016). "Pelvic prolapse repair in the era of mesh." *Current Urology Reports* 17(3): 1-9.

[Full-Text](#)

Department of Urology

Pelvic organ prolapse repair with mesh remains the gold standard for advanced prolapse. There are several surgical approaches available to the pelvic reconstructive surgeon. Prolapse repair can be performed vaginally or abdominally using native tissue or may be augmented with a biologic or mesh patch. In this article, we will review the different approaches to prolapse repair, the role of mesh, and the risks and benefits of each option. Patient selection, surgical technique, and the rationale for using mesh will be explored. Complications from prolapse repair with mesh including dyspareunia, pelvic pain, mesh exposure, and reoperation will be discussed. © 2016, Springer Science+Business Media New York.

Gaines N, Han E, Gupta P, Farrah M, Killinger KA, **Boura JA, Bartley J, Gilleran J, Sirls LT** and **Peters KM** (2016). "Pelvic floor muscle injections for hypertonicity in women." *Neurourology and Urodynamics* 35(23): S76.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Urology

Introduction: Pelvic floor dysfunction is a common cause of chronic pelvic pain. While pelvic floor physical therapy (PFPT) is a mainstay of treatment, many patients benefit from an additional modality of pain relief. Injections of local anesthetics and steroids to the levator muscles have been shown to provide short-term relief of acute pain and permit additional manipulation by the physical therapist. Here we evaluate outcomes after pelvic floor muscle injections in women at a tertiary-care center. Methods: This is a retrospective review of women with chronic pelvic pain conditions who were treated with in-office pelvic floor muscle injections from January 2012 to August 2015 by six clinicians. Lidocaine 1% and 2%, bupivacaine 0.5%, and ropivacaine 0.5% were all used with or without triamcinolone 40mg. Patients reported pain on a 0-10 scale (none to most severe) for the right and left levators before and 15 min after injection. Location, number of injections, and volume administered were recorded. Results: 101 women with a mean age of 47 years had a total of 256 separate visits for pelvic floor muscle injections. 201/256 (78%) were undergoing concurrent PFPT. Median number of visits was 2 with a median of 28 days between visits. A standard template of up to six injections into the obturators / levators, three on the right side and three on the left was performed. Indications for pelvic floor injections included pelvic pain, interstitial cystitis with pelvic pain, pelvic floor dysfunction, pelvic floor muscle spasm, and vulvar vestibulitis syndrome. At each visit, a mean of five injections with an average total of 19 cc of anesthetic-steroid was administered. 65% of patients received bilateral pelvic floor muscle injections. Mean pain scores decreased by 6.3 and 6.7 on the VAS scale in the first two visits, respectively. Minor side effects including leg numbness, dizziness, nausea, bleeding, and headache occurred in 26/256 visits (10%). Conclusion: Pelvic floor muscle injections can be an adjunct in women with pelvic floor dysfunction to control pain and may aid in manual PFPT.

Garg L, Garg J, Krishnamoorthy P, Ahnert A, **Shah N**, Dusaj RS and Bozorgnia B (2016). "The influence of pregnancy in patients with congenital long QT syndrome." *Cardiology in Review*. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Congenital long QT syndrome (LQTS) is a disorder of myocardial repolarization and is characterized by a prolonged QT interval on AN electrocardiogram. A prolonged QT predisposes patients to an increased risk of syncope and sudden cardiac death secondary to polymorphic ventricular tachycardia. Several mutations linked to the LQT syndrome have been identified, the most common of which have been found in the potassium channel KCNQ1 (LQT1) and hERG (LQT2) genes and in the sodium channel SCN5A (LQT3) gene. Female gender is an independent risk factor for the development of torsades de pointes (TdP) in LQTS. Furthermore, while pregnancy may be associated with protection against cardiac events in LQTS, the 9-month post-partum period represents a time of increased arrhythmogenicity. Interestingly, these cardiac events during the post-partum period are more common in patients with LQT2. The precise mechanisms that influence the cardiac repolarization during the post-partum period are unclear. Beta-blockers are considered reasonably safe during pregnancy and should be continued or initiated in patients with LQTS to reduce the risk of cardiac events. Implantable cardioverter defibrillators are safe in pregnancy, and there is no evidence that pregnant women with these devices are at any greater risk for adverse complications solely on the grounds of having the device.

Garg L, **Pow T, Gallagher M, Abbas A, Hanzel G, Safian R, Shannon F**, Agrawal S and Hanson I (2016). "Iliopsoas area as an objective frailty assessment tool for TAVR." *Journal of the American College of Cardiology* 67(13): 246.

[Full-Text](#)

OUWB Medical Student Author

Department of Internal Medicine

Department of Surgery

Background: Frailty is a powerful predictor of outcomes after trans-catheter aortic valve replacement (TAVR). Sarcopenia as assessed by iliopsoas muscle area (IPA) has been validated as a tool to assess frailty prior to surgical procedures. We evaluated IPA as a predictor of outcomes after TAVR. Methods: 103 patients underwent TAVR at our institution between 2011-2014. Baseline characteristics are listed in Table. Preoperative CT scans were used to calculate body surface adjusted IPA as a measure of sarcopenia. Outcomes evaluated included: 1) early poor outcome (30d death, stroke, dialysis, and prolonged ventilation), 2) 1 year mortality and 3) high resource utilization (length of stay >7 days, discharge to rehabilitation, or readmission within 30 days). Results: Early poor outcome in our cohort was independently predicted by preoperative STS mortality score (OR= 4.3, CI=1.5-12.3; p=0.003), and IPA (OR=3.7, CI= 1.3- 10.3; p=0.01). STS score was the only predictor of 1-year mortality in our cohort (OR= 3.6, CI= 1.2- 10.8; p= 0.02). Independent predictors of high resource utilization included female gender (OR=3.22, CI= 1.4-7.6; p=0.006), estimated GFR < 60 mL/min (OR= 2.7, CI=1.2-6.2; P=0.016), and IPA (OR= 2.8, CI= 1.2-6.5; p=0.016). High resource utilization was observed in 73% of patients with IPA less than the median, compared to 49% of patients with an IPA greater than the median. Conclusions: Use of CT scan derived measurement of IPA predicts early poor outcome and high resource utilization after TAVR. (Table Presented).

Gjeorgjievski M and **Cappell MS** (2016). "Portal hypertensive gastropathy: A systematic review of the pathophysiology, clinical presentation, natural history and therapy." *World Journal of Hepatology* 8(4): 231-262.

[Full-Text](#)

Department of Internal Medicine

AIM: To describe the pathophysiology, clinical presentation, natural history, and therapy of portal hypertensive gastropathy (PHG) based on a systematic literature review. METHODS: Computerized search of the literature was performed via PubMed using the following medical subject headings or keywords: "portal" and "gastropathy"; or "portal" and "hypertensive"; or "congestive" and "gastropathy"; or "congestive" and "gastroenteropathy". The following criteria were applied for study inclusion: Publication in peer-reviewed journals, and publication since 1980. Articles were independently evaluated by each author and selected for inclusion by consensus after discussion based on the following criteria: Well-designed, prospective trials; recent studies; large study populations; and study emphasis on PHG. RESULTS: PHG is diagnosed by

characteristic endoscopic findings of small polygonal areas of variable erythema surrounded by a pale, reticular border in a mosaic pattern in the gastric fundus/body in a patient with cirrhotic or non-cirrhotic portal hypertension. Histologic findings include capillary and venule dilatation, congestion, and tortuosity, without vascular fibrin thrombi or inflammatory cells in gastric submucosa. PHG is differentiated from gastric antral vascular ectasia by a different endoscopic appearance. The etiology of PHG is inadequately understood. Portal hypertension is necessary but insufficient to develop PHG because many patients have portal hypertension without PHG. PHG increases in frequency with more severe portal hypertension, advanced liver disease, longer liver disease duration, presence of esophageal varices, and endoscopic variceal obliteration. PHG pathogenesis is related to a hyperdynamic circulation, induced by portal hypertension, characterized by increased intrahepatic resistance to flow, increased splanchnic flow, increased total gastric flow, and most likely decreased gastric mucosal flow. Gastric mucosa in PHG shows increased susceptibility to gastrototoxic chemicals and poor wound healing. Nitrous oxide, free radicals, tumor necrosis factor-alpha, and glucagon may contribute to PHG development. Acute and chronic gastrointestinal bleeding are the only clinical complications. Bleeding is typically mild-to-moderate. Endoscopic therapy is rarely useful because the bleeding is typically diffuse. Acute bleeding is primarily treated with octreotide, often with concomitant proton pump inhibitor therapy, or secondarily treated with vasopressin or terlipressin. Nonselective β -adrenergic receptor antagonists, particularly propranolol, are used to prevent bleeding after an acute episode or for chronic bleeding. Iron deficiency anemia from chronic bleeding may require iron replacement therapy. Transjugular-intrahepatic-portal-systemic-shunt and liver transplantation are highly successful ultimate therapies because they reduce the underlying portal hypertension. CONCLUSION: PHG is important to recognize in patients with cirrhotic or non-cirrhotic portal hypertension because it can cause acute or chronic GI bleeding that often requires pharmacologic therapy. © The Author(s) 2016.

Goldstein JA (2016). "Statin attenuation of stent inflammatory response." [Catheterization and Cardiovascular Interventions](#) 87(2): 230-231.

[Full-Text](#)

Department of Internal Medicine

Goldstein JA, Kommuri N and **Dixon SR** (2016). "Left ventricular systolic dysfunction is associated with adverse outcomes in acute right ventricular infarction." [Coronary Artery Disease](#) 27(4): 277-286.

[Full-Text](#)

Department of Internal Medicine

BACKGROUND: In patients with acute right ventricular infarction (RVI), global right ventricular (RV) performance is dependent on compensatory left ventricular (LV)-septal contractile contributions. This study was designed to assess the influence of depressed left ventricular ejection fraction (LVEF) on hemodynamics and clinical outcomes in patients with RVI. **METHODS AND RESULTS:** We retrospectively identified 338 patients with acute inferior ST elevation myocardial infarction (STEMI) undergoing a primary percutaneous coronary intervention. RVI was determined echocardiographically by right ventricular free wall motion abnormalities and depressed global RV performance (fractional area change); LV function was similarly calculated. RVI was documented in 185 (55%) cases. Compared with those with inferior myocardial infarction alone, patients with RVI suffered more hemodynamic compromise (need for inotropes or vasopressors 39 vs. 15%, $P < 0.0001$, and intra-aortic balloon pump 32 vs. 13%, $P < 0.0001$) and higher in-hospital mortality (14 vs. 3%, $P = 0.0006$). In cases without RVI, the status of LV function did not influence in-hospital mortality (ejection fraction $\leq 40\% = 7.3\%$ vs. ejection fraction $> 40\% = 1.8$, $P = 0.12$). In contrast, in patients with RVI, LVEF was an important determinant of outcome: those with LVEF of up to 40% suffered more hemodynamic compromise (need for inotropes or vasopressors 63 vs. 30%, $P < 0.0001$, and intra-aortic balloon pump 59 vs. 22%, $P < 0.0001$) and had markedly higher in-hospital mortality (33 vs. 7%, $P < 0.0001$). **CONCLUSION:** In patients with acute inferior myocardial infarction complicated by RVI, depressed LVEF is associated with greater hemodynamic compromise and higher in-hospital mortality. These findings may have clinical implications for supportive efforts in such cases. Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved.

Gonçalves LF (2016). "Three-dimensional ultrasound of the fetus: How does it help?" [Pediatric Radiology](#) 46(2): 177-189.

[Full-Text](#)

Department of Obstetrics and Gynecology

Three-dimensional ultrasonography (3-D US) was introduced to the field of fetal imaging in the early 1990s. Since then several publications have described potential applications for the diagnosis of congenital malformations as well as organ volumetry. This article reviews basic principles of 3-D US as well as its clinical applicability to prenatal diagnosis of abnormalities involving the face, spine and skeletal system, as well as potential applications of 3-D US for fetal cardiovascular and neuroimaging. Limitations related to motion artifacts, acoustic shadowing and barriers to clinical implementation of 3-D US in clinical practice are addressed. © 2015, Springer-Verlag Berlin Heidelberg.

Gonçalves LF (2016). "Three-dimensional ultrasound: A role in early pregnancy?," In Abramowicz JS (ed). [First-Trimester Ultrasound](#). Springer. pp: 213-221.

[Full-Text](#)

Department of Obstetrics and Gynecology

Gonzalez-Hernandez J, Daoud Y, **Fischer AC**, Barth B and Piper HG (2016). "Endoscopic button gastrostomy: Comparing a sutured endoscopic approach to the current techniques." [Journal of Pediatric Surgery](#) 51(1): 72-75.

[Full-Text](#)

Department of Surgery

Purpose Button gastrostomy is the preferred feeding device in children and can be placed open or laparoscopically (LBG). Alternatively, a percutaneous endoscopic gastrostomy (PEG) can be placed initially and exchanged for a button. Endoscopic-assisted button gastrostomy (EBG) combines both techniques, using only one incision and suturing the stomach to the abdominal wall. The long-term outcomes and potential costs for EBG were compared to other techniques. Methods Children undergoing EBG, LBG, and PEG (2010-2013) were compared. Patient demographics, procedure duration/complications, and clinic and emergency room (ER) visits for an eight-week follow-up period were compared. Results Patient demographics were similar (32 patients/group). Mean procedure time (min) for EBG was 38 ± 9 , compared to 58 ± 20 for LBG and 31 ± 10 for PEG ($p < 0.0001$). The most common complications were granulation tissue and infection with a trend toward fewer infections in EBG group. Average number of ER visits was similar, but PEG group had fewer clinic visits. 97% of PEG patients had subsequent visits for exchange to button gastrostomy. Conclusions EBG is safe and comparable to LBG and PEG in terms of complications. It has a shorter procedure time than LBG and does not require laparoscopy, device exchange, or subsequent fluoroscopic confirmation, potentially reducing costs.

Gould D and Brueckner-Collins J (2016). [High-Yield Neuroanatomy](#). Philadelphia, Lippincott Williams & Wilkins.

[Request Form](#)

Department of Biomedical Sciences (OU)

Graham SF, Chevallier OP, Kumar P, Turkoglu O and **Bahado-Singh RO** (2016). "High resolution metabolomic analysis of ASD human brain uncovers novel biomarkers of disease." [Metabolomics](#) 12(4).

[Full-Text](#)

Department of Obstetrics and Gynecology

Introduction Autism spectrum disorders (ASD) is a group of neurodevelopmental disorders believed to have a multifactorial basis. Presently, diagnosis is based on behavioral and developmental signs in children before the age of 3 and no reliable clinical biomarkers are available for early detection. Objectives This study aimed to biochemically profile the cerebellum from post-mortem human brain from ASD sufferers ($n = 11$) and compare their profiles to that of age-matched controls ($n = 11$) with no known brain disorder. Methods Using liquid chromatography combined with LTQ-Orbitrap mass spectrometry we detected 14,328 features in ESI+ mode in polar extracts of post-mortem brain. Results Of these only 37 were found to be statistically significantly different between ASD and controls ($p < 0.05$; $fdr < 0.05$). A panel of four features had a predictive power of 96.64 %, following statistical cross validation, for ASD detection. This model produced an

AUC = 0.874 (CI 0.768-0.944) and a Fisher's exact score of $p = 4.50E-29$. Conclusion Whilst at this time we were unable to chemically identify the four features of interest we believe that this study underscores the potential value of high resolution metabolomics for the study of ASD. Further characterization of the polar metabolome of post mortem ASD brains could lead to the identification of potential biomarkers and novel therapeutics for the disease. The development of accurate biomarkers could assist in the early detection of ASD and promote early intervention strategies to improve outcome.

Grysiewicz R, Glaser A, Kotzen L and Weissman H (2016). "Lower NIHSS score on presentation to the emergency center delays head CT turnaround times." *Stroke* 47.

[Request Form](#)

Department of Neurology

Background: Rapid assessment of patients that present to the emergency center with acute stroke symptoms is crucial to the timely administration of intravenous thrombolysis. The "golden hour" is recognized by the American Heart Association as the standard of care for treatment of acute ischemic stroke [1]. Door to treatment in ≤ 60 minutes can be difficult to achieve, and in 2010 $< 30\%$ of hospitals participating in GWTG attained this goal [2]. One step that can be particularly challenging during the expedited stroke assessment is door to head CT interpretation time in ≤ 45 minutes. We sought to determine factors that delay head CT turnaround times > 45 minutes. Methods: A retrospective stroke database review was completed on 165 patients presenting to the emergency center with acute stroke symptoms in the 0-4.5 hour time window from January 2014 to May 2015. Inclusion criteria was age 18-95 years with an initial NIHSS of 1-42, and a head CT completed at our hospital. Inpatients that developed acute stroke symptoms were excluded from the study. Patients were further stratified by NIHSS and age. Results: The mean age was 75 years and 50% were female. The average head CT turnaround time was 38.1 minutes and the average NIHSS was 8.11. Fifty three patients (32.1%) received acute reperfusion therapy. The average head CT turnaround time for a NIHSS of 1-3 was 47.4 minutes; NIHSS of 4-9 was 38.4 minutes; NIHSS of 10-24 was 25.2 minutes; NIHSS ≥ 25 was 34.5 minutes. There was no significant difference in the head CT turnaround time based on age. Conclusion: Patients presenting to the emergency center with a NIHSS of 1-3 had delayed head CT turnaround times compared to patients presenting with more severe stroke symptoms, and furthermore, did not meet the goal head CT interpretation time of ≤ 45 minutes. One possible reason for this finding is that patients with minor stroke symptoms are less likely to receive intravenous thrombolysis. However, expanding literature suggests that nearly 30% of patients with lower NIHSS scores at discharge have significant disability at 90 days [3]. Multiple educational interventions will be implemented in the emergency center to improve head CT turnaround times in patients with low NIHSS scores on presentation.

Gupta P, Ehlert M, **Sirls LT** and **Peters KM** (2016). "Confirmation of transvaginal pelvic floor muscle injection template: A cadaver study." *Neurourology and Urodynamics* 35(23): S89-S90.

[Full-Text](#)

Department of Urology

Introduction: Women with pelvic floor dysfunction may present with tender areas on vaginal examination, which can be treated with pelvic floor muscle injection. There are no publications on the accuracy of drug delivery, location of fluid injected or fluid dispersion after injection. Methods: Our standard pelvic floor muscle injection template is two sets of injections passing through the vaginal wall into the pelvic floor muscles at the 1, 3, and 5 o'clock positions, a proximal set at the level of the ischial spine, and a distal set immediately behind the pubic bone (Figure 1). We use a curved nasal cannula guide and seven-inch spinal needle. The efficacy and accuracy of this template was evaluated on two fresh cadavers. Each injection site used different colored pathology dye diluted in two cc of saline. At 1 o'clock distally the needle was advanced one cm beyond the end of the cannula guide and at all other positions advanced two cm. The first pelvis was dissected to examine dye location and penetration. Based on these results we modified our technique and repeated injections on the second cadaver. We dissected the second pelvis and compared our findings. Results: The one o'clock proximal and distal injections stained the obturator internus and externus near the insertion at the ischiopubic ramus. The 3 o'clock injections stained the pubococcygeus and puborectalis. The distal 5 o'clock position was too deep and stained the fat of the ischioanal space, while the proximal 5 o'clock injection was near the ischial spine and stained the area of the pudendal nerve. Our

goal at the distal 5 o'clock position was to infuse the iliococcygeus muscle, so for the second pelvis we shortened the needle depth from two cm to one cm beyond the cannula tip. In our second dissection the distal 5 o'clock injection remained entirely in the fat of the ischioirectal space. Conclusion: Our transvaginal injection template delivers medication to the proximal and distal obturator internus, externus, levator animuscles and the pudendal nerve. We could not reliably inject the levator muscles at the distal 5 o'clock site even after modifications. This is the first study to locate distribution of pelvic floor muscle injections in a cadaver model.

Gupta P, Gaines N, **Bartley J**, Ehlert M, **Gilleran J**, **Fischer M**, Killinger KA and **Sirls LT** (2016). "Stress urinary incontinence after robotic assisted prolapse repair." Neurourology and Urodynamics 35(23): S102-S103.

[Full-Text](#)

Department of Urology

Introduction: Advanced pelvic organ prolapse (POP) repair is associated with development of denovo stress urinary incontinence (SUI). Significant controversy exists regarding which patients to treat preoperatively and how best to counsel patients regarding outcomes. In this study we review our experience with robotic assisted prolapse repair (RAPS) and SUI outcomes. Methods: Review of our retrospective longitudinal RAPS database with patients that have undergone RAPS procedures between 2006-2014 by five fellowship-trained surgeons. Patients were separated into two cohorts; those that underwent MUS at the time of RAPS and those that did not. Demographics, history, operative, and peri-operative outcomes were compared. Descriptive statistics, Pearson's Chi-square test, and Fisher's Exact tests were performed. Results: We identified 196 patients that underwent RAPS procedures between 2006-2014. Mean follow-up was 13.6 months. 91 patients had SUI at baseline and underwent a SUI procedure concomitantly (SUITX+). 105 patients did not have SUI at baseline and did not have a concomitant SUI procedure (SUITX-). In the SUITX+ cohort, 79 had a transobturator sling, 3 retropubic sling, 7 retropubic bladder neck suspension, and two miniarc sling. Persistent SUI was reported by 4/89 (4.5%) of the SUITX+ cohort and denovo SUI by 22/101 (22%) of the SUITX- cohort, P=0.0005. 1/89 SUI+ and 2/100 SUI- patients developed worse SUI. 2/91 (2.2%) women in the SUITX+ cohort had a subsequent SUI procedure, one periurethral injection and 1 midurethral sling. 9/105 (8.6%) women in the SUITX- cohort had subsequent SUI procedure, two periurethral injection and seven midurethral sling. In the SUITX+ cohort sling specific complications included 1/91 (1%) woman that required sling revision for obstructed voiding and 1/91 (1%) woman that had sling mesh exposure treated with estrogen. Conclusion: We observed a 22% de novo SUI rate after RAPS procedures, yet less than half of these chose to have another SUI procedure. Women who had a concurrent sling had a very low rate of SUI persistence or of sling specific complications.

Gupta P, Gaines N, Ehlert M, Lavin J and **Sirls LT** (2016). "Recovery of urinary function after robotic-assisted laparoscopic prostatectomy versus radical perineal prostatectomy for early stage prostate cancer." Neurourology and Urodynamics 35(23): S70.

[Full-Text](#)

Department of Urology

Introduction: Robotic-assisted laparoscopic prostatectomy (RALP) has largely replaced open radical prostatectomy in many markets. Radical perineal prostatectomy (RPP) is an alternative, less invasive open approach that has been widely ignored. There is little data on the recovery of urinary function between RALP and RPP. Methods: Retrospective review of a prospective radical prostatectomy database at Beaumont Health System. Urinary modules from the Expanded Prostate Cancer Index Composite- Urinary Function (EPIC-UF) questionnaire were used to determine preoperative baseline urinary symptom summary score, and subscale scores of urinary incontinence, bother, irritative/obstructive, and function and at six, 12, 18, and 24 months after surgery. Results: 508 of 733 men had complete EPIC-UF data, 419 underwent RALP and 89 RPP. Baseline clinical and prostate cancer data were similar between groups. At baseline, mean EPIC scores were similar between RALP and RPP groups (88.9 vs. 89.8) but at six months, overall urinary symptom score recovery was greater for RALP than RPP (82.17 vs. 77.7; P=0.028), but there was no significant difference at 12, 18, and 24 months. Post RALP urinary incontinence and function were also significantly improved but only at 6 months (P= 0.021, P=0.006). Both RALP and RPP patients showed significant improvement in urinary incontinence and function over 12 to 24 months. There was no significant difference between RALP

and RPP at any time point for urinary bother or irritative/ obstructive symptoms. Conclusion: RALP had more rapid recovery of EPIC-UF data at 6 months compared to RPP. However, at 12 to 24 months postoperatively RALP and RPP had similar recovery of urinary function in all urinary domains. Further study is needed to investigate long-term urinary outcomes in patients that undergo RALP and RPP.

Gupta P, Gaines N, Killinger KA, **Boura JA** and **Sirls LT** (2016). "Sexual function in patients undergoing posterior compartment repair compared to those undergoing anterior or apical repairs." Neurourology and Urodynamics 35(23): S44.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Urology

Introduction: Studies have reported increased dyspareunia in patients that undergo transvaginal posterior compartment pelvic organ prolapse repair. In this study we compare sexual function in patients with posterior repairs compared to other compartments at one year after transvaginal prolapse repair. Methods: Women from our prospective, longitudinal prolapse database that had transvaginal repair of POP between 12/19/ 2008 through 6/4/2014 were reviewed. Patients were divided into two cohorts: those that had posterior compartment repair (either alone or concomitantly) and those who had anterior± apical compartment repair without posterior repair. Patients were assessed with the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) pre- and post-operatively at six months and one year. Data were analyzed with Pearson's Chi square, Fisher's Exact, Wilcoxon rank sum tests, and repeated measures. Results: 130 women were identified. 50 women had a posterior repair (PR+). 28 were combined with anterior±apical repair, and 22 only had a posterior repair. 80 women had anterior ±apical repair without posterior repair (PR-). There was no significant difference in mean age (PR+ 63, PR- 64 years, P=0.66) or placement of transvaginal mesh (PR+ 56%, PR- 73%). Being sexually active at baseline was similar (PR+ 48%, PR- 50%) and remained similar at 6 months (PR+ 52%, PR- 57%) and one year (PR+ 53%, PR- 47%). Answers to PISQ question #5 showed that dyspareunia was not different at baseline (PR+ 23%, PR- 10%, p=0.26), 6 months (PR+ 12% PR- 13%, p=1.0), or 1 year (PR+ 12%, PR - 17%, p=1.0). Baseline PISQ scores were similar and remained so at six months and one year (Table 1). PISQ scores improved significantly in both groups over time (PR+ P=0.0013, PR- P=0.0014). Conclusion: At six-month and one-year follow ups, women with posterior compartment repair have similar rates of being sexually active, dyspareunia, and similar improvement in PISQ scores as women with anterior±apical compartment repairs.

Gupta P, **Gilleran J**, Killinger KA, **Bartley J**, Gaines N, Wolfert C, **Boura JA** and **Peters KM** (2016). "Does sex matter? A matched pairs analysis of neuromodulation outcomes in women and men." Neurourology and Urodynamics 35(23): S101.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: There is a lack of understanding regarding differences in response to neuromodulation between women and men. We aim to evaluate whether baseline symptoms and outcomes are influenced by sex in a matched cohort. Methods: Patients in our prospective database that had a tined lead placed were reviewed. Those that had initial success and subsequent implantable pulse generator (IPG) were matched on age and urologic diagnosis. History, voiding diaries, Interstitial Cystitis Symptom/Problem Index (ICSIPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) at baseline, three and six months, and one, two, and three years were evaluated using descriptive statistics, repeated measures, and matched pair GEE or Mixed analyses. Results: Of all 590 patients in the database, more women than men received an IPG (452/488; 92.6% vs. 84/102 men; 82.4%; P=0.0011). More women had interstitial cystitis/bladder pain syndrome and more men had urgency/frequency (p<0.0001). Eighty matched pairs (n=160; 81% age ≥50 years; 56.25% had urgency/frequency with urge incontinence-UI) were identified and evaluated. 19/79 (24.1%) of women had prior bladder suspension and 6/23 men (26%) had prior prostate surgery. In women vs. men, follow up (median 30.0 vs. 27.3 months; P=0.040), history of Parkinson's (2.6% vs. 14.5%; P=0.012), and heart disease (36.3% vs. 55.7%; P=0.016) differed significantly. On voiding diaries, volume/void was greater in women at baseline (P=0.040); both groups improved over time (p <0.0001).

Urinary frequency improved in both women/men (P=0.0010; P=0.0025). Incontinence severity improved only in women (p<0.0001); only men had significant decreases in incontinence episodes/day (P=0.017). The interaction between gender/time point suggested that women/men responded differently over time for voided volume (P=0.0111) and HRQOL (P=0.0131). ICSIPI, OABq ss, and HRQOL scores improved similarly in both groups (p<0.0001 for all measures in both groups) and treatment satisfaction did not differ. Conclusion: More women undergo neuromodulation, have initial success and subsequent IPG implantation. Equal numbers in each cohort had UI at baseline, but UI episodes improved only in men and UI severity improved only in women. Both women and men experienced similar levels of symptom improvement on other measures and treatment satisfaction.

Gupta R and **Soto R** (2016). "Prophylaxis and management of postoperative nausea and vomiting in enhanced recovery protocols: Expert opinion statement from the American Society for Enhanced Recovery (ASER)." Perioperative Medicine (Lond) 5(9): 4.

[Full-Text](#)

Department of Anesthesiology

International experience and evidence-based practices have shown that reduction in variability through use of protocolized perioperative care improves surgical outcomes and reduces costs to patients and healthcare systems. In this series of Expert Opinions, we provide consensus recommendations for the various components of perioperative care to aid with the development of enhanced recovery after surgery protocols.

Gurm HS, Sanz-Guerrero J, Johnson DD, Jensen A, Seth M, Chetcuti SJ, Lalonde T, Greenbaum A, **Dixon SR** and Shih A (2016). "Using simulation for teaching femoral arterial access: A multicentric collaboration." Catheterization and Cardiovascular Interventions 87(3): 376-380.

[Full-Text](#)

Department of Internal Medicine

Objective To assess the impact of simulation training on complications associated with femoral arterial access obtained by first year cardiology fellows. Background: Prior studies demonstrate a higher incidence of arterial access related complications among patients undergoing invasive cardiac procedures. Methods First year cardiology fellows at four teaching hospitals in Michigan tracked their femoral access experience and any associated complications between July 2011 and June 2013. Fellows starting their academic training in July 2012 were first trained on a specially developed simulator before starting their rotation in the catheterization laboratory. The primary outcome was access proficiency, defined as five successful femoral access attempts without any complication or need to seek help from a more experienced team member. Results A total of 1,278 femoral access attempts were made by 21 fellows in 2011-2012 compared with 869 femoral access attempts made by 21 fellows in 2012-2013. There was a lower rate of access related complications in patients undergoing access attempts by first year fellows in year 2 compared with year 1 (2.1% versus 4.5%, P=0.003). The number of procedures to achieve procedural proficiency was significantly higher in year 1 compared with year 2 (median 20 versus 10, P=0.007). Conclusions Incorporation of simulation in the training of first year fellows was associated with an improvement in proficiency and a clinically meaningful reduction in vascular complications. (C) 2015 Wiley Periodicals, Inc.

Haines DE (2016). "Heparin bolus or infusion: Can we draw a conclusion?" JACC: Clinical Electrophysiology. ePub Ahead of Print.

[Request Form](#)

Department of Internal Medicine

Handelsman Y, Henry RR, Bloomgarden ZT, Dagogo-Jack S, DeFronzo RA, Einhorn D, Ferrannini E, Fonseca VA, Garber AJ, **Grunberger G**, LeRoith D, Umpierrez GE and Weir MR (2016). "American Association of Clinical Endocrinologists and American College of Endocrinology position statement on the association of sglt-2 inhibitors and diabetic ketoacidosis." Endocrine Practice. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Harriott M (2016). "Medical parasitology laboratory: A self-directed learning module (Peer Reviewed)." MedEdPortal Publication No. 10345

[Full-Text](#)

Department of Biomedical Sciences (OU)

This resource includes a 46-minute video that reviews the major microscopic features of select medically relevant parasites as well as a postmodule quiz. The video covers select nematodes, cestodes, trematodes, and protozoa.

Hawasli A, Reyes M, Hare B, Meguid A, Harriott A, Almahmeed T, Thatimatla N and Szpunar S (2016). "Can morbidly obese patients with reflux be offered laparoscopic sleeve gastrectomy? A case report of 40 patients." *American Journal of Surgery* 211(3): 571-575.

[Full-Text](#)

Department of Surgery

BACKGROUND: The incidence of reflux in obesity can reach greater than 35%. Most surgeons recommend Roux-en-y gastric bypass to patients with pre-existing reflux. One alternative to Roux-en-y gastric bypass is the addition of anterior fundoplication (AF) with posterior crural approximation (pCA) to laparoscopic sleeve gastrectomy (LSG) in patients with documented reflux. **METHODS:** Between February 2011 and April 2013 we reviewed data from the bariatric registry on weight loss, resolution of symptoms, and quality of life presurgery and postsurgery for all patients who consented to participate in the registry and underwent LSG with AF/pCA. **RESULTS:** Forty patients met inclusion criteria; 78%(31) were female. The mean initial weight was 298 +/- 64 lbs. with mean BMI of 49 +/- 8 kg/m(2). The mean DeMeester score was 36 +/- 27 (normal < 14.7). Nine (22.5%) patients had esophagitis. Thirty-six (90%) patients had hiatal hernia. There were no intraoperative complications. The mean operative time was 84 +/- 20 minutes and the mean hospital stay was 1.6 +/- .9 days. Postoperative complications included 1 fluid collection, 1 narrowing, 4 admissions for nausea and dehydration, 1 for pancreatitis, and 1 for deep vein thrombosis. Thirty-eight (95%) patients had immediate resolution of reflux, whereas 2 (5%) patients complained of worsening symptoms. On short-term follow-up of 24 +/- 6 months, 55% of patients responded to the gastroesophageal reflux disease-health related quality of life questionnaire with improvement in their median score from 31/75 interquartile range (IQR 25) preoperatively to 0/75 (IQR 6.5) postoperatively (P < .0001). Their % excess body mass index loss was 69 +/- 27%. **CONCLUSIONS:** Morbidly obese patients with documented reflux can be offered LSG with the addition of AF/pCA. (C) 2016 Elsevier Inc. All rights reserved.

Herring WJ, Connor KM, Ivgy-May N, Snyder E, Liu K, Snively DB, Krystal AD, Walsh JK, Benca RM, Rosenberg R, **Sangal RB**, Budd K, Hutzelmann J, Leibensperger H, Froman S, Lines C, Roth T and Michelson D (2016). "Suvorexant in patients with insomnia: Results from two 3-month randomized controlled clinical trials." *Biological Psychiatry* 79(2): 136-148.

[Full-Text](#)

Department of Family Medicine

Background Suvorexant is an orexin receptor antagonist for treatment of insomnia. We report results from two pivotal phase 3 trials. **Methods** Two randomized, double-blind, placebo-controlled, parallel-group, 3-month trials in nonelderly (18-64 years) and elderly (≥ 65 years) patients with insomnia. Suvorexant doses of 40/30 mg (nonelderly/elderly) and 20/15 mg (nonelderly/elderly) were evaluated. The primary focus was 40/30 mg, with fewer patients randomized to 20/15 mg. There was an optional 3-month double-blind extension in trial 1. Each trial included a 1-week, randomized, double-blind run-out after double-blind treatment to assess withdrawal/rebound. Efficacy was assessed at week 1, month 1, and month 3 by patient-reported subjective total sleep time and time to sleep onset and in a subset of patients at night 1, month 1, and month 3 by polysomnography end points of wakefulness after persistent sleep onset and latency to onset of persistent sleep (LPS). One thousand twenty-one patients were randomized in trial 1 and 1019 patients in trial 2. **Results** Suvorexant 40/30 mg was superior to placebo on all subjective and polysomnography end points at night 1/week 1, month 1, and month 3 in both trials, except for LPS at month 3 in trial 2. Suvorexant 20/15 mg was superior to placebo on subjective total sleep time and wakefulness after persistent sleep onset at night 1/week 1, month 1, and month 3 in both trials and at most

individual time points for subjective time to sleep onset and LPS in each trial. Both doses of suvorexant were generally well tolerated, with <5% of patients discontinuing due to adverse events over 3 months. The results did not suggest the emergence of marked rebound or withdrawal signs or symptoms when suvorexant was discontinued. Conclusions Suvorexant improved sleep onset and maintenance over 3 months of nightly treatment and was generally safe and well tolerated. © 2016 Society of Biological Psychiatry.

Hollander JB and Dave CN (2016). "The developing paradigm of urologic training in the USA." International Urology and Nephrology 48(1): 1-3.

[Full-Text](#)

Department of Urology

Honaker M, **Scouten S**, **Sacksner J**, Ziegler M and **Wasvary H** (2016). "A medial to lateral approach offers a superior lymph node harvest for laparoscopic right colectomy." International Journal of Colorectal Disease 31(3): 631-634.

[Full-Text](#)

OUWB Medical Student Author

Department of Surgery

Purpose: Studies have shown improved survival with increasing amounts of harvested lymph nodes. The purpose of this study was to evaluate two laparoscopic techniques to right colectomy, laparoscopic medial to lateral (MtL) approach and laparoscopic lateral to medial (LtM) approach, in patients undergoing a right colectomy for either endoscopically unresectable polyps or carcinoma and determine which technique offers the optimal lymph node harvest. Methods: Patients that underwent a laparoscopic right colectomy over a 5-year period were identified. Charts were reviewed with regards to demographics, surgical approach, length of stay (LOS) and number of lymph nodes harvested. Variables were statistically analyzed and outcomes compared between the two groups. A p value of less than 0.05 was considered statistically significant. Results: Two hundred thirty-three patients underwent a laparoscopic right colectomy over a 5-year period for endoscopically unresectable polyps or carcinoma. Seventy-nine patients underwent a MtL approach and 154 patients underwent a LtM approach. When comparing the two groups, there were more females in the MtL group relative to the LtM group (78 % vs 66 %; p = 0.0015). When the outcome of number of lymph nodes harvested was examined, there was a significantly larger number of nodes harvested in the MtL (median = 24) approach compared to the LtM approach (median = 19; p = 0.0002). LOS was similar between the MtL and LtM group (median 4 days for both). Conclusions: The laparoscopic MtL approach to right colectomy yields a larger lymph node harvest compared to the laparoscopic LtM approach. © 2016, Springer-Verlag Berlin Heidelberg.

Honda M, Hikita K, Kawamoto B, Muraoka K, Shimizu S, Saito M, Sejima T, **Chancellor MB**, Yoshimura N and Takenaka A (2016). "Spinal glycine transporter-1 inhibition influences the micturition reflex in urethane-anesthetized rats." International Urology and Nephrology 48(3): 349-354.

[Full-Text](#)

Department of Urology

Purpose: Glycine is an inhibitory neurotransmitter in the central nervous system. So far, two types of glycine transporters (GlyTs), GlyT-1 and GlyT-2, have been cloned. The aim of this study is to investigate the effects of a selective GlyT-1 inhibitor that can increase endogenous glycine concentration on the micturition reflex in urethane-anesthetized rats. Methods: Continuous cystometrograms (0.04 ml/min) were performed in female Sprague–Dawley rats (232–265 g) under urethane anesthesia. After stable micturition cycles were established, ALX5407, a selective GlyT-1 inhibitor, was administered intrathecally or intracerebroventricularly to evaluate changes in bladder activity. Cystometric parameters were recorded and compared before and after drug administration. Results: Intrathecal administration of ALX5407 (1, 3, 10 and 30 µg) increased intercontraction intervals at doses of 3 µg or higher in a dose-dependent fashion. Intrathecal administration of ALX5407 (1, 3, 10 and 30 µg) also increased pressure threshold at doses of 3 µg or higher in a dose-dependent fashion. However, when ALX5407 (1, 3, 10 and 30 µg) was administered intracerebroventricularly, there were no significant changes in intercontraction intervals, pressure threshold, maximum voiding pressure or baseline pressure or post-void residual urine volume at any doses tested. Conclusion: The results of our study indicate that GlyT-1 plays an important role in the modulation of

micturition. Furthermore, these findings indicate that in urethane-anesthetized rats suppression of GlyT-1 can inhibit the micturition reflex at the spinal cord level. Thus, GlyT-1 could be a potential target for the treatment of bladder dysfunction such as overactive bladder. © 2016, Springer Science+Business Media Dordrecht.

Hong RS, Metz CM, Bojrab DI, Babu SC, Zappia J, Sargent EW, Chan EY, Naumann IC and Larouere MJ (2016). "Acoustic reflex screening of conductive hearing loss for third window disorders." Otolaryngology - Head and Neck Surgery (United States) 154(2): 343-348.

[Full-Text](#)

Department of Surgery

Objective This study examines the effectiveness of acoustic reflexes in screening for third window disorders (eg, superior semicircular canal dehiscence) prior to middle ear exploration for conductive hearing loss. **Study Design** Case series with chart review. **Setting** Outpatient tertiary otology center. **Subjects and Methods** A review was performed of 212 ears with acoustic reflexes, performed as part of the evaluation of conductive hearing loss in patients without evidence of chronic otitis media. The etiology of hearing loss was determined from intraoperative findings and computed tomography imaging. The relationship between acoustic reflexes and conductive hearing loss etiology was assessed. **Results** Eighty-eight percent of ears (166 of 189) demonstrating absence of all acoustic reflexes had an ossicular etiology of conductive hearing loss. Fifty-two percent of ears (12 of 23) with at least 1 detectable acoustic reflex had a nonossicular etiology. The positive and negative predictive values for an ossicular etiology were 89% and 57% when acoustic reflexes were used alone for screening, 89% and 39% when third window symptoms were used alone, and 94% and 71% when reflexes and symptoms were used together, respectively. **Conclusion** Acoustic reflex testing is an effective means of screening for third window disorders in patients with a conductive hearing loss. Questioning for third window symptoms should complement screening. The detection of even 1 acoustic reflex or third window symptom (regardless of reflex status) should prompt further workup prior to middle ear exploration. © 2015 American Academy of Otolaryngology-Head and Neck Surgery Foundation.

Hu J, Bortsov AV, Ballina L, Orrey DC, **Swor RA**, Peak D, Jones J, Rathlev N, Lee DC, Domeier R, Hendry P, Parry BA and McLean SA (2016). "Chronic widespread pain after motor vehicle collision typically occurs through immediate development and nonrecovery: Results of an emergency department-based cohort study." Pain 157(2): 438-444.

[Full-Text](#)

Department of Emergency Medicine

Motor vehicle collision (MVC) can trigger chronic widespread pain (CWP) development in vulnerable individuals. Whether such CWP typically develops through the evolution of pain from regional to widespread or through the early development of widespread pain with nonrecovery is currently unknown. We evaluated the trajectory of CWP development (American College of Rheumatology criteria) among 948 European-American individuals who presented to the emergency department (ED) for care in the early aftermath of MVC. Pain extent was assessed in the ED and 6 weeks, 6 months, and 1 year after MVC on 100%, 91%, 89%, and 91% of participants, respectively. Individuals who reported prior CWP at the time of ED evaluation (n 53) were excluded. Trajectory modeling identified a 2-group solution as optimal, with the Bayes Factor value (138) indicating strong model selection. Linear solution plots supported a nonrecovery model. Although the number of body regions with pain in the non-CWP group steadily declined, the number of body regions with pain in the CWP trajectory group (192/895, 22%) remained relatively constant over time. These data support the hypothesis that individuals who develop CWP after MVC develop widespread pain in the early aftermath of MVC, which does not remit. © 2015 International Association for the Study of Pain.

Huang J, Chen N and Press RD (2016). "Molecular methodologies and molecular pathology of hematolymphoid neoplasms," In Cheng L and Bostwick DG (ed). Essentials of Anatomic Pathology. Springer. pp: 529-555.

[Full-Text](#)

Department of Pathology

Hung J, Taylor AR, Divine GW, **Hafron JM** and Hwang C (2016). "The effect of time to castration-resistance on outcomes with abiraterone and enzalutamide in metastatic prostate cancer." [Clinical Genitourinary Cancer](#). ePub Ahead of Print.

[Request Form](#)

OUWB Medical Student Author

Department of Urology

Jae SY, **Franklin BA**, Choo J, Yoon ES, Choi YH and Park WH (2016). "Fitness, body habitus, and the risk of incident type 2 diabetes mellitus in Korean men." [American Journal of Cardiology](#) 117(4): 585-589.

[Full-Text](#)

Department of Internal Medicine

The relative contributions of cardiorespiratory fitness (CRF) and body habitus to predict incident type 2 diabetes mellitus (T2DM) remain unclear. We prospectively investigated the relation of CRF and body habitus on the risk of developing T2DM in men. Participants included 3,770 apparently healthy men who initially presented without baseline evidence of diabetes, cardiovascular disease, and hypertension. Participants were divided into 3 groups as normal weight (18.5 to 24.9 kg/m²), obese I (25.0 to 29.9 kg/m²), and obese II (\geq 30.0 kg/m²). CRF was directly measured by peak oxygen uptake (VO₂peak) and categorized into unfit and fit cohorts based on the median value of age-specific VO₂peak. Diabetes was defined as a glycated hemoglobin \geq 6.5% and/or a fasting glucose \geq 126 mg/dl at baseline and follow-up examinations. During a median follow-up of 5 years, 170 men (4.5%) developed diabetes. After adjusting for age and fasting glucose, the relative risk and 95% confidence interval (CI) for incident T2DM were 1.52 (95% CI 1.11 to 2.07) for obese I and 3.11 (95% CI 1.35 to 7.16) for obese II versus normal weight and 0.69 (95% CI 0.51 to 0.95) for fit versus unfit. However, these associations were no longer statistically significant after adjusting for potential confounders with VO₂peak (1.32; 95% CI 0.96 to 1.83 for obese I and 1.61, 95% CI 0.64 to 4.06 for obese II vs normal weight) or body mass index (0.75, 95% CI 0.54 to 1.05 for fit vs unfit). In the joint analysis, obese-unfit men had 1.81 times (95% CI 1.22 to 2.69) greater risk of incident T2DM, but obese-fit men were not at increased risk of incident T2DM (0.95, 95% CI 0.57 to 1.58) compared with fit-normal weight men. In conclusion, these results suggest that both CRF and obesity predict the incidence of T2DM independent of potential confounders; however, CRF appears to attenuate the risk of developing diabetes in obese men. © 2015 Elsevier Inc.

Jawad MS, **Dilworth JT**, **Gustafson GS**, Ye H, Wallace M, Martinez A, **Chen PY** and **Krauss DJ** (2016). "Outcomes associated with 3 treatment schedules of high-dose-rate brachytherapy monotherapy for favorable-risk prostate cancer." [International Journal of Radiation Oncology Biology Physics](#) 94(4): 657-666.

[Full-Text](#)

Department of Radiation Oncology

Purpose: We report the outcomes associated with 3 high-dose-rate (HDR) brachytherapy regimens used as monotherapy for favorable-risk prostate cancer. Methods and Materials: Four hundred ninety-four patients with stage \leq T2b prostate cancer, Gleason score \leq 7, and prostate-specific antigen levels \leq 15 ng/mL underwent HDR brachytherapy as monotherapy. Of those, 319 received 38 Gy in 4 fractions, 79 received 24 Gy in 2 fractions, and 96 received 27 Gy in 2 fractions. Acute and chronic genitourinary (GU) and gastrointestinal (GI) toxicities were defined as side effects occurring \leq 6 and $>$ 6 months, respectively, after radiation therapy (RT) and were graded according to the Common Terminology Criteria for Adverse Events version 3.0. The time to toxicity was calculated from the date of RT completion. Variables were analyzed with chi(2) test. P values $<$.05 were considered significant. Results: The median overall follow-up time was 4 years (range, 5.5, 3.5, and 2.5 years for 38 Gy, 24 Gy, and 27 Gy, respectively, P $<$.001). Acute and chronic grade \geq 2 GU and GI toxicity profiles were similar among groups. Acceptable rates of grade 2 GU toxicities were seen with overall acute/chronic frequency/urgency, dysuria, retention, incontinence, and hematuria rates of 14%/20%, 6%/7%, 7%/4%, 1.5%/2%, and 1.5%/7%, respectively. Minimal grade 3 and no grade 4 or 5 toxicities were seen. Grade 1, 2, and 3 chronic urethral stricture rates were 0.3%, 2%, and 1%, respectively. All GI toxicities were similar between groups, with overall rates of acute/chronic grade 2 diarrhea, rectal pain/tenesmus, rectal bleeding, and proctitis of 1%/1%, $<$ 1%/0.5%, 0%/2%, and $<$ 1%/1%, respectively. No grade 3, 4, or 5 toxicities were seen. All comparisons were similar for hormone-naïve patients. The median

time to maximal GU/GI toxicity was similar between groups, ranging from 1 to 1.6 to 0.9 to 1.2 years, respectively. There were no differences in clinical outcomes between the 3 groups at 5 years. Conclusions: The acute and chronic toxicity profiles associated with these 3 HDR brachytherapy schedules were similar and were well tolerated. Acceptable grade 2, minimal grade 3, and no grade 4 or 5 toxicities were seen. This, combined with the fact that the clinical outcomes were similar, leads to the conclusion that all 3 regimens may be acceptable options for the management of low-risk to intermediate-risk prostate cancer. (c) 2016 Elsevier Inc. All rights reserved.

Jawad MS, **Fahim DK**, Gerszten PC, Flickinger JC, Sahgal A, **Grills IS**, Sheehan J, Kersh R, Shin J and Oh K (2016). "Vertebral compression fractures after stereotactic body radiation therapy: A large, multi-institutional, multinational evaluation." *Journal of Neurosurgery: Spine*: 1-9. ePub Ahead of Print.

[Request Form](#)

Department of Neurosurgery

Department of Radiation Oncology

Jhang JF, Birder LA, **Chancellor MB** and Kuo HC (2016). "Patient characteristics for different therapeutic strategies in the management ketamine cystitis." *Neurourology and Urodynamics*. ePub Ahead of Print.

[Request Form](#)

Department of Urology

Johnson MD, Avksholt V, Baschnagel AM, Meyer K, Ye H, **Grills IS**, **Chen PY**, Maitz A, **Olson RE**, Pieper DR and **Krauss DJ** (2016). "Surgical resection of brain metastases and the risk of leptomeningeal recurrence in patients treated with stereotactic radiosurgery." *International Journal of Radiation Oncology Biology Physics* 94(3): 537-543.

[Full-Text](#)

Department of Radiation Oncology

Department of Neurosurgery

Purpose: Recent prospective data have shown that patients with solitary or oligometastatic disease to the brain may be treated with upfront stereotactic radiosurgery (SRS) with deferral of whole-brain radiation therapy (WBRT). This has been extrapolated to the treatment of patients with resected lesions. The aim of this study was to assess the risk of leptomeningeal disease (LMD) in patients treated with SRS to the postsurgical resection cavity for brain metastases compared with patients treated with SRS to intact metastases. Methods and Materials: Four hundred sixty-five patients treated with SRS without upfront WBRT at a single institution were identified; 330 of these with at least 3 months' follow-up were included in this analysis. One hundred twelve patients had undergone surgical resection of at least 1 lesion before SRS compared with 218 treated for intact metastases. Time to LMD and overall survival (OS) time were estimated from date of radiosurgery, and LMD was analyzed by the use of cumulative incidence method with death as a competing risk. Univariate and multivariate analyses were performed with competing risk regression to determine whether various clinical factors predicted for LMD. Results: With a median follow-up time of 9.0 months, 39 patients (12%) experienced LMD at a median of 6.0 months after SRS. At 1 year, the cumulative incidence of LMD, with death as a competing risk, was 5.2% for the patients without surgical resection versus 16.9% for those treated with surgery (Gray test, $P < .01$). On multivariate analysis, prior surgical resection ($P < .01$) and breast cancer primary ($P = .03$) were significant predictors of LMD development. The median OS times for patients undergoing surgery compared with SRS alone were 12.9 and 10.6 months, respectively (log-rank $P = .06$). Conclusions: In patients undergoing SRS with deferral of upfront WBRT for intracranial metastatic disease, prior surgical resection and breast cancer primary are associated with an increased risk for the development of LMD. (C) 2016 Elsevier Inc. All rights reserved.

Jurjus A, Eid A, Al Kattar S, Zeenny MN, Gerges-Geagea A, Haydar H, Hilal A, Oueidat D, Matar M, Tawilah J, **Hajj Hussein I**, Schembri-Wismayer P, Cappello F, Tomasello G, Leone A and Jurjus RA (2016). "Inflammatory bowel disease, colorectal cancer and type 2 diabetes mellitus: The links." *BBA Clinical* 5(Jun): 16-24.

[Full-Text](#)

Department of Biomedical Sciences (OU)

The co-occurrence of the three disease entities, inflammatory bowel disease (IBD), colorectal cancer (CRC),

type 2 diabetes mellitus (T2DM) along with inflammation and dysbiosis has been frequently reported. Some authors have even suggested that dysbiosis could be the link through a molecular crosstalk of multiple inflammatory loops including TGF β , NF κ B, TNF α and ROS among others. This review focuses on the inflammatory process along with the role of microbiota in the pathophysiology of the three diseases. The etiology of IBD is multifactorial, and like CRC and T2DM, it is associated with a widespread and sustained GI inflammation and dysbiosis, whereby an array of pro-inflammatory mediators and other related biomolecules are up-regulated, both locally and systemically. Such a persistent or an inadequately resolved chronic inflammation may be a causative agent, in the presence of other factors, leading to several pathologies such as IBD, CRC and T2DM. TGF β plays a crucial role in pancreatic β cell malfunctioning as glucotoxicity stimulates its signaling cascade through Smad 3, IL-6 and epithelial to mesenchymal transition. Such a cascade could lead to macrophage and other cell recruitment, inflammation, then IBD and CRC. NF κ B is also another key regulator in the crosstalk among the pathways leading to the three disease entities. It plays a major role in linking inflammation to cancer development through its ability to up-regulate several inflammatory and tumor-promoting cytokines like: IL-6, IL-1 α and TNF α , as well as genes like BCL2 and BCLXL. It activates JAK/STAT signaling network via STAT3 transcription factors and promotes epithelial to mesenchymal transition. It also increases the risk for T2DM in obese people. In brief, NF κ B is a matchmaker between inflammation, IBD, cancer and diabetes. In addition, TNF α plays a pivotal role in systemic inflammation. It is increased in the mucosa of IBD patients and has a central role in its pathogenesis. It also activates other signaling pathways like NF κ B and MAPK leading to CRC. It is also overexpressed in the adipose tissues of obese patients thus linking it to T2DM, chronic inflammation and consequently CRC. On the other hand, increasing evidence suggests that dysbiosis plays a role in initiating, maintaining and determining the severity of IBD. Actually, among its functions, it modulates genotoxic metabolites which are able to induce CRC, a fact proven to be sustained by stool transfer from patients with CRC. Probiotics, however, may actively prevent CRC as well as IBD and results in a significant decrease in fasting glycemia in T2DM patients. In conclusion, IBD, CRC and T2DM are commonly occurring interrelated clinical problems. They share a common basis influenced by an inflammatory process, an imbalance in intestinal microbiota, and a crosstalk between various signaling pathways. Would probiotics interrupt the crosstalk or orient it in the physiological direction? © 2015 The Authors.

Kazanji N, Klein RE, Lohani S, Mertens AN and **Le J** (2016). "A case of hypermucoviscous *Klebsiella pneumoniae* liver abscess syndrome in an Iraqi male." *QJM*. ePub Ahead of Print.

[Full-Text](#)

OUWB Medical Student Author

A 53-year-old man presented with fevers, productive cough and decreased appetite. He emigrated from Iraq 4 years ago. Chest x-ray revealed a left lung consolidation. Respiratory cultures and two sets of blood cultures grew out pan-susceptible *Klebsiella pneumoniae*. Liver ultrasound revealed a 6.4-cm complex lesion in the left hepatic lobe. A biopsy of the liver lesion produced bloody purulent aspirate; abscess cultures yielded a highly viscous pan-susceptible *K. pneumoniae*. Liver abscess syndrome is a newly described invasive syndrome due to a hypermucoviscous phenotype associated with serotypes K1 and K2 of *Klebsiella*. Although it is more commonly endemic to the Asian-Pacific region, it has been increasingly reported as an emerging global disease. We present the first case of this syndrome in a patient of middle-eastern descent. We also present pictorial evidence of the microbe's unique viscous, muculent texture grown on agar.

Kennedy AS, Ball DS, Cohen SJ, Cohn M, Coldwell D, Drooz A, Ehrenwald E, Kanani S, Rose SC, Nutting CW, Moeslein FM, **Savin MA**, Schirm S, Putnam SG, Sharma NK and Wang EA (2016). "Safety and efficacy of radioembolization in elderly (≥ 70 Years) and younger patients with unresectable liver-dominant colorectal cancer." *Clinical Colorectal Cancer*. ePub Ahead of Print.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Background: The effects of advancing age on clinical outcomes after radioembolization (RE) in patients with unresectable liver-dominant metastatic colorectal cancer (mCRC) are largely unknown. Patients and Methods: This study was a retrospective analysis of 160 elderly (≥ 70 years) and 446 younger (< 70 years)

consecutive patients from 11 US centers who received RE using yttrium-90 (90Y) resin microspheres (90Y radioembolization [90Y-RE]) between July 2002 and December 2011. A further analysis was conducted in 98 very elderly patients (≥ 75 years). Statistical analyses of safety, tolerability, and overall survival were conducted. Results: Mean ages (\pm standard deviation) in the younger (< 70 years), elderly (≥ 70 years), and very elderly (≥ 75 years) cohorts were 55.9 ± 9.4 years, 77.2 ± 4.8 years, and 80.2 ± 3.8 years, respectively. Overall survival was similar between elderly and younger patients: 9.3 months (95% confidence interval [CI], 8.0-12.1) and 9.7 months (95% CI, 9.0-11.4) ($P = .335$). There were no differences between cohorts for any grade adverse events ($P = .433$) or grade 3+ events ($P = .482$). Analysis of patients ≥ 75 years and < 75 years confirmed similar overall survival (median, 9.3 months vs. 9.6 months, respectively; $P = .987$) and grade 3+ events ($P = .398$) or any adverse event ($P = .158$) within 90 days of RE. Conclusion: For patients with unresectable liver-dominant mCRC who meet eligibility criteria for RE, 90Y-RE microspheres appear to be effective and well-tolerated, regardless of age. Criteria for selecting patients for RE should not include age for exclusion from this potentially beneficial intervention.

Kitta T, **Chancellor MB**, de Groat WC, Shinohara N and Yoshimura N (2016). "Role of the anterior cingulate cortex in the control of micturition reflex in a rat model of Parkinson's disease." *Journal of Urology* 195(5): 1613-1620.

[Full-Text](#)

Department of Urology

Purpose: In the current study we examined dynamic changes in neural activity of the anterior cingulate cortex and the midbrain periaqueductal gray during the micturition reflex in a Parkinson's disease model as well as the effects of direct stimulation of the anterior cingulate cortex on the micturition reflex. Materials and Methods: Electrodes were inserted in the anterior cingulate cortex or the periaqueductal gray. The effects of intravenous administration of the adenosine A2A receptor antagonist ZM24138 on pelvic nerve evoked field potentials were examined. The effect of electrical stimulation of the anterior cingulate cortex was also examined. Results: Rats with Parkinson's disease showed bladder overactivity as evidenced by a significant decrease in the intercontraction interval compared with sham operated rats. Intravenous administration of ZM24138 increased the intercontraction interval in both groups with the inhibitory effects greater in rats with Parkinson's disease. It dose dependently increased the amplitude of evoked potentials in the anterior cingulate cortex of rats with Parkinson's disease but not in sham operated rats. Intravenous administration of ZM24138 decreased evoked potential amplitude in the periaqueductal gray of both groups with the inhibitory effects greater in Parkinson's disease vs sham operated rats. Electrical stimulation of the anterior cingulate cortex significantly increased the intercontraction interval. Conclusions: These results suggest that anterior cingulate cortex neurons have an inhibitory role in bladder control. Neural activity in the anterior cingulate cortex was significantly increased along with suppression of bladder overactivity after ZM241385 administration in the Parkinson's disease model and the stimulation of the anterior cingulate cortex inhibited the micturition reflex. Understanding the roles of the anterior cingulate cortex in the modulation of micturition could provide further insights into the pathophysiology of overactive bladder. © 2016 American Urological Association Education and Research, Inc.

Klement RJ, Belderbos J, **Grills I**, Werner-Wasik M, Hope A, Giuliani M, Ye H, Sonke JJ, Peulen H and Guckenberger M (2016). "Prediction of early death in patients with early stage NSCLC - can we select patients without a potential benefit of SBRT as a curative treatment approach?" *Journal of Thoracic Oncology*. ePub Ahead of Print.

[Full-Text](#)

Department of Radiation Oncology

INTRODUCTION: Stereotactic Body Radiotherapy (SBRT) is the guideline-recommended treatment for medically inoperable patients with peripheral stage I NSCLC. This study analyzed whether short-term (< 6 months) death can be predicted reliably to select a sub-group of patients, which will not have a benefit from SBRT. METHODS: 779 patients with early stage NSCLC treated with Cone Beam CT-guided SBRT in 5 institutes for whom information on overall survival within the first six months after treatment was available were included in this analysis. The probability of dying within six months after treatment was defined as the endpoint "early death" and modeled by multivariate logistic regression. Model fitting was performed using the LASSO method and model test performance was estimated using double 10-fold cross validation. The variables age, gender, ECOG status, operability, FEV1 and Charlson comorbidity index (CCI) were considered

for model building. RESULTS: The ECOG performance status and - to a lesser extent - operability were the most important predictors of early death, while the CCI was only associated with the overall survival time. Based on the best expected test performance (AUC=0.699), the risk of early death would be 8.8% (8.2-13.7%) and 4.1% (3.0-4.3%) for 10% of the patients with highest and lowest risk, respectively. Overall, predictive performance was too low for clinical application. CONCLUSIONS: SBRT should be offered to all patients irrespective of their comorbidities, unless the performance status of the patients and the comorbidities prevent accurate SBRT planning and delivery.

Klingenstein A, Schaumberger MM, Freeman WR, **Folberg R**, Mueller AJ and Schaller UC (2016). "MuSIC report III: Tumour microcirculation patterns and development of metastasis in long-term follow-up of melanocytic uveal tumours." *Acta Ophthalmologica* 94(2): 175-181.

[Full-Text](#)

Administration

Purpose To statistically determine differences in microcirculation patterns between nevi and uveal melanomas and the influence of these patterns on metastatic potential in the long-term follow-up of 112 patients with melanocytic uveal tumours. In vivo markers indicating malignancy and metastatic potential have implications for treatment decision. **Methods** Primary diagnosis and work-up included clinical examination, fundus photography, standardized A and B scan echography as well as evaluation of tumour microcirculation patterns via confocal fluorescein and indocyanine green angiography (ICGA). Patient data were collected from the patient files, the tumour registry or personal contact. Statistical analysis was performed with spss 22.0 using chi-square, Fisher's exact test and Kaplan-Meier survival analysis. **Results** Forty-three uveal melanocytic lesions remained untreated and were retrospectively classified as benign nevi, whereas 69 lesions were malignant melanomas (T1: 32, T2: 28, T3: 6 and T4: 3). 'Silent' and 'arcs without branching' were found significantly more often in nevi ($p = 0.001$ and $p = 0.010$), whereas 'parallel with cross-linking' and 'networks' were significantly more frequent in melanomas ($p = 0.022$ and $p = 0.029$). The microcirculation pattern 'parallel with cross-linking' proved significantly more frequent in patients who developed metastases ($p = 0.001$). **Conclusions** Certain microcirculation patterns may guide us in differentiating uveal nevi from malignant melanomas. A non-invasive prognostic marker can be of great value for borderline lesions in which cytology is less likely taken. 'Parallel with cross-linking' did not only indicate malignancy, but it was also associated with later tumour metastasis. © 2015 Acta Ophthalmologica Scandinavica Foundation. Published by John Wiley & Sons Ltd.

Koppisetty S, Skrzynski AK, **Lauter CB** and **Sims MD** (2016). "Human metapneumovirus: A rare cause of acute meningoencephalitis." *Infectious Diseases in Clinical Practice*. ePub Ahead of Print.

[Request Form](#)

Department of Internal Medicine

ABSTRACT: Human metapneumovirus (hMPV) is an emerging pathogen well known to cause respiratory tract infections in children and adults. It is responsible for approximately 5% to 10% of all hospitalizations of children due to acute respiratory tract infections. The hMPV can cause severe illness in children, immunocompromised persons, and the elderly, which can progress to severe respiratory failure requiring hospitalization and mechanical ventilation. Transmission occurs via contact with contaminated respiratory secretions (droplet, aerosol). The hMPV is rarely known to cause central nervous system complications. Descriptions of this syndrome are limited to case reports, most of which have been in children. Reports suggest that this virus has been linked to diseases of the central nervous system including acute encephalopathy, encephalitis, and febrile seizures. Review of the literature revealed only one confirmed case of hMPV isolated from the cerebrospinal fluid of a patient with concurrent encephalitis. We describe an adult patient with acute meningoencephalitis associated with hMPV, in whom a respiratory virus panel with polymerase chain reaction was positive for hMPV on nasopharyngeal swab, but was negative on the cerebrospinal fluid specimen. Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved.

Kotini-Shah P, Camp-Rogers TR, **Swor RA** and **Sawyer KN** (2016). "An assessment of emergency department post-cardiac arrest care variation in Michigan." [Therapeutic Hypothermia and Temperature Management](#) 6(1): 17-22.
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Department of Emergency Medicine

Implementation of postarrest care by individual physicians and systems has been slow. Deadoptio, or discontinuation of therapeutic hypothermia (TH) treatment targets, after recent prospective study results has not been well reported. This study assesses practices in the early stages of postarrest care across emergency departments (EDs) in Michigan. A 27-question Internet-based survey was distributed to EDs in Michigan in September 2013. To assess changes in practice after publication of Nielsen et al., we sent follow-up questions to all original respondents a year later. Observational data and descriptive statistics are reported. From the 142 EDs identified, we excluded critical access hospitals (N=35), free standing EDs (N=7), EDs that transfer critical patients to tertiary centers (N=21), and exclusive children's hospitals (N=3). Of the remaining 76 hospitals, we received 64 (84.2%) responses. We identified 15 respondents with a protocol to specifically initiate ED TH and transfer patients to a higher level of care. The 49 remaining were mostly teaching institutions (N=34, 69%) and gave the ED physician the ability to initiate TH (N=40, 82%). On follow-up 12 months later, we received 33/40 (83%) responses, of which only 5 indicated formal or informal change in TH practice or target temperature. There is substantial variation in the practice of ED postarrest care and initiation of TH across the state of Michigan, but few ED TH protocols were changed in a year's time. The consequences of postarrest treatment variability at the state and ED levels are likely under-recognized as an influence on outcome variation between regions.

Krishnan A, Kaza RK and Vummidi DR (2016). "Cross-sectional imaging review of tuberous sclerosis." [Radiologic Clinics of North America](#). ePub Ahead of Print.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Tuberous sclerosis complex (TSC) is a multisystem, genetic disorder characterized by development of hamartomas in the brain, abdomen, and thorax. It results from a mutation in one of 2 tumor suppressor genes that activates the mammalian target of rapamycin pathway. This article discusses the origins of the disorder, the recently updated criteria for the diagnosis of TSC, and the cross-sectional imaging findings and recommendations for surveillance. Familiarity with the diverse radiological features facilitates diagnosis and helps in treatment planning and monitoring response to treatment of this multisystem disorder. © 2016 Elsevier Inc.

Kumar T, Sovoda R, Gibson J, Britton S, Shaw AJ, **Boyanton B**, **Sainarapungavan D** and **Zhang PL** (2016). "Quantitative real-time PCR as a surrogate method to detect BK Virus (BKV) in renal transplant biopsies with negative SV-40 staining." [Modern Pathology](#) 29: 406A-407A.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Kumar T, Sovoda R, Gibson J, Britton S, Shaw AJ, **Boyanton B**, **Samarapungavan D** and **Zhang PL** (2016). "Quantitative real-time PCR as a surrogate method to detect BK Virus (BKV) in renal transplant biopsies with negative SV-40 staining." [Laboratory Investigation](#) 96: 406A-407A.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Background: Scattered studies using quantitative real-time PCR (qPCR) for BKV in renal tissue suggest feasibility of the technique for detecting BKV, however, no clinical utility of qPCR for BKV using renal tissue has been implemented. When SV40 staining is negative in a biopsy while the patient has high serum or urine BKV, it is a dilemma how to give an accurate diagnosis and to treat the patient. This investigation was to determine whether qPCR from paraffin embedded tissue could enhance the detection of BKV in renal grafts biopsies with negative SV40 staining. Design: Thirteen negative controls (4 tonsils, 2 native kidney biopsies, 7 renal transplant biopsies with 3 acute tubular injury, 3 acute cellular rejection and 1 antibody mediated

rejection), 5 positive controls (1 bladder biopsy, 4 renal graft biopsies with known positive SV40 staining) and 5 uncertain cases (high clinical suspicion with high urine/serum BKV and negative SV40 staining) were selected for the study. DNA was extracted from each specimen using five 5- μ m curls from the formalin-fixed paraffin-embedded tissue block using the QIAamp DNA FFPE Tissue Kit (Qiagen) for BKV qPCR (The qPCR linear range is 500 to 500 x 10⁶ copies/mL). Results: BKV was not detected in the tonsillar and native kidney biopsies. BKV was detected (10 copies/ng DNA) in the negative control renal transplant biopsies. Except one positive case with minimal renal tissue left showing 2.5 copies/ng DNA, the remaining 4 positive cases had high pairs of BKV ranging from 5,263 to 160 million copies/ng DNA. In five uncertain cases, there were low BKV levels, ranging from 160 to 277 copies/ng DNA in 3 cases with rejection diagnosis in the reports (low suspicion), but 0.19 to 0.53 million BKV copies/ng DNA in the remaining two cases (high suspicion). Conclusions: Our data demonstrate that qPCR BKV testing from paraffin embedded tissue is very sensitive for ruling in/out BKV in renal transplant biopsies. Based on our preliminary data, cut-off values of < 10, 10 to 500 and >500 copies/ng DNA may represent absence, low suspicion and high suspicion for the presence of BKV in biopsies, respectively.

Kuwajerwala N, **Rezaee ME**, Widders K, **Lucia V**, **Boura JA** and **Seitz JP** (2016). "Does duration to ipsilateral breast tumor recurrence affect the success of reoperative sentinel lymph node biopsy?" Cancer Treatment Communications 2016(7): 35-38.

[Full-Text](#)

OUWB Medical Student Author

Department of Biomedical Sciences (OU)

Department of Biomedical Sciences (BHS)

Department of Diagnostic Radiology and Molecular Imaging

Background: Five to ten percent of patients with prior breast cancer treated with breast conservation therapy (BCT) will develop ipsilateral breast tumor recurrence (IBTR), requiring reoperative sentinel lymph node biopsy (SNLB). IBTR patients may have a history of prior axillary surgery, which can be a SLNB or an axillary lymph node dissection (ALND). Materials & Methods: A retrospective chart review was conducted on patients with IBTR who received care in the Department of Surgery at William Beaumont Hospital, Royal Oak and Troy, Michigan, from January 2007 to December 2009. Results: Twenty-eight patients were identified and categorized as Prior ALND (>10 lymph nodes, n=14), Prior SLNB (\leq 10 lymph nodes, n=10) and an Unknown number of lymph nodes (n=4). Among Prior ALND patients, reoperative SLNB success was increased in the \geq 10 years group (25% vs. 50%, p=0.58). Similarly, among Prior SLNB patients, reoperative SLNB success was increased in the \geq 10 years group (71% vs. 100%, p=1.0). Conclusion: Increased duration to IBTR may be associated with success of reoperative SNLB in patients with IBTR with prior ALND or SNLB. Further study is required to better understand this relationship. Microabstract: The relationship between timing of and success of reoperative sentinel lymph node biopsy (SLNB) has not been studied. We conducted an observational, retrospective analysis of 28 patients with ipsilateral breast tumor recurrence (IBTR). Our results may suggest a higher rate of reoperative SNLB success with increased (\geq 10 years) duration to IBTR among patients who initially underwent breast conserving therapy with initial axillary lymph node dissection or SNLB. Further research is required to characterize this potential relationship. Clinical practice points: Specific mechanisms for the regeneration of lymphatic channels in patients with IBTR after original SLNB or ALND are currently being investigated. The time necessary to reestablish significant lymphatic networks is unknown, but likely impacts the success of reoperative SNLB in IBTR patients. Our results may suggest a higher rate of reoperative SNLB success with increased (\geq 10 years) duration to IBTR among patients who initially underwent BCT with original axillary lymph node dissection or SNLB. Although more advanced research is required to better understand the relationship between timing of and success of reoperative SLNB, the results of this study may suggest that the utility of SLNB may be greater with increased length to IBTR. As a result, clinicians should be somewhat skeptical of the success of SLNB in patients with immediate IBTR until further research can be conducted. © 2016 Elsevier Ltd.

LaBan MM, Tamler MS, Wang AM and Lenger A (2016). "'Numb Chin Syndrome': Two additional cases of mental nerve mononeuropathy resulting from metastasis and infection: –A Redux!" [American Journal of Physical Medicine and Rehabilitation](#). ePub Ahead of Print.

[Request Form](#)

Department of Physical Medicine and Rehabilitation

Department of Diagnostic Radiology and Molecular Imaging

Lapinski J and **Diaz KM** (2016). "Single accreditation system for graduate medical education: An opportunity for lesbian, gay, bisexual, and transgender health education integration in osteopathic medicine." [Journal of the American Osteopathic Association](#) 116(2): 76-78.

[Request Form](#)

Department of Biomedical Sciences (OU)

Lauter CB (2016). "Recurrent idiopathic anaphylaxis in a woman after suspected food poisoning." [Journal of Allergy and Clinical Immunology](#) 137(2): AB53.

[Full-Text](#)

Department of Internal Medicine

RATIONALE: Recurrent idiopathic anaphylaxis represents a vexing clinical problem associated with stress for patients and allergists. The cause is often not identified despite exhaustive testing. **METHODS:** The history of a 54-year-old woman with repeated bouts of unexplained anaphylaxis is reviewed. The relationship between preceding or active infection (emphasis on GI infections) and chronic idiopathic urticaria (CIU) and anaphylaxis was explored by electronic media search (PubMed, Google) and review of reference lists of published articles. The literature on the relationship of *Campylobacter jejuni*, infection and urticaria is reviewed. Gastrointestinal infections (*Giardia*, *Anisakis*) have been better documented in such patients. **RESULTS:** The patient had persistent flatulence, looser and more frequent bowel movements for months after recovery from a bout of food poisoning. A diagnosis of "post infectious irritable bowel syndrome" was made by a gastroenterologist. These symptoms were not related to her simultaneous diagnosis of CIU and idiopathic anaphylaxis. After treatment with azithromycin (positive stool culture for *Campylobacter jejuni*) she had a systemic allergic reaction. Subsequently, the diarrhea and urticaria/ anaphylaxis cleared. *Campylobacter jejuni* has been reported to cause chronic urticaria, but predominantly in children. A related organism, *Helicobacter pylori*, has been associated with CIU. Anaphylaxis has not been related to *Campylobacter*, infection in the past. **CONCLUSIONS:** Chronic urticaria and recurrent bouts of mild unexplained anaphylaxis were triggered by *Campylobacter jejuni* infection. The allergic and GI symptoms resolved after treatment. Gastrointestinal infections should be looked for in patients with urticaria or anaphylaxis.

Lavie CJ, Arena R and **Franklin BA** (2016). "Cardiac rehabilitation and healthy life-style interventions rectifying program deficiencies to improve patient outcomes." [Journal of the American College of Cardiology](#) 67(1): 13-15.

[Full-Text](#)

Department of Internal Medicine

Learned DL, **Gupta CK, Stec LA** and **Heidemann DG** (2016). "Perioperative corneal transplant wound dehiscence." [Anesthesiology](#) 124(1): 185.

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Department of Ophthalmology

Levine GN, Bates ER, Blankenship JC, Bailey SR, Bittl JA, Cercek B, Chambers CE, Ellis SG, Guyton RA, Hollenberg SM, Khot UN, Lange RA, Mauri L, Mehran R, Moussa ID, Mukherjee D, Ting HH, O'Gara PT, Kushner FG, Ascheim DD, Brindis RG, Casey DE, Chung MK, de Lemos JA, Diercks DB, Fang JC, **Franklin BA**, Granger CB, Krumholz HM, Linderbaum JA, Morrow DA, Newby LK, Ornato JP, Ou N, Radford MJ, Tamis-Holland JE, Tommaso CL, Tracy CM, Woo YJ, Zhao DX, Pci Writing C and Stemi Writing C (2016). "2015 ACC/AHA/SCAI focused update on primary percutaneous coronary intervention for patients with ST-elevation myocardial infarction: An Update of the 2011 ACCF/AHA/SCAI guideline for percutaneous coronary intervention and the 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction a report of the American College of Cardiology/American Heart Association Task Force on clinical practice guidelines and the Society for Cardiovascular Angiography and Interventions." [Circulation](#) 133(11): 1135-1147.

[Request Form](#)

Department of Internal Medicine

Linnstaedt SD, Bortsov AV, Soward AC, **Swor R**, Peak DA, Jones J, Rathlev N, Lee DC, Domeier R, Hendry PL and McLean SA (2016). "CRHBP polymorphisms predict chronic pain development following motor vehicle collision." [Pain](#) 157(1): 273-279.

[Full-Text](#)

Department of Emergency Medicine

Musculoskeletal pain (MSP) is a common sequela of traumatic stress exposure. While biological factors contributing to chronic MSP after motor vehicle collision (MVC) have traditionally focused on tissue injury, increasing evidence suggests that neuro/stress/immune processes mediated by stress system activation may play a more dominant role. In a previous study, we found that genetic variants in the hypothalamic-pituitary-adrenal (HPA) axis-related gene FKBP5 influence vulnerability to persistent MSP 6 weeks after MVC. In the present cohort study (n = 855), we evaluated whether genetic variants in several other important HPA axis-related genes, including the glucocorticoid receptor (NR3C1), corticotropin-releasing hormone receptor 1 (CRHR1), and corticotropin-releasing hormone-binding protein (CRHBP), influence risk of chronic MSP over time after MVC. Genetic polymorphism rs7718461 in the CRHBP gene showed significant association (P = 0.0012) with overall pain severity during the year after MVC in regression models controlling for multiple comparisons. Two additional CRHBP alleles in high linkage disequilibrium with rs7718461 also showed trend-level significance. In secondary analyses, a significant interaction between this CRHBP locus (minor allele frequency = 0.33) and time was observed (P = 0.015), with increasing effect observed over time following trauma. A significant CRHBP x FKBP5 interaction was also observed, with substantially increased MSP after MVC in those with a risk allele in both genes compared with either gene alone. The results of this study indicate that genetic variants in 2 different HPA axis genes predict chronic MSP severity following MVC and support the hypothesis that the HPA axis is involved in chronic post-MVC MSP pathogenesis.

Lopes ACF, Medeiros LJ, Clemens MW, Chai M, Liu H, Di Napoli A, Lade S, **Amin M**, Young KH and Miranda R (2016). "Comprehensive immunophenotypic analysis of 64 cases of breast implant-associated anaplastic large cell lymphoma shows an activated cytotoxic with a silent T-cell receptor pattern." [Modern Pathology](#) 29(Supplement 2): 345A.

[Full-Text](#)

Department of Pathology

Lopes ACF, Medeiros LJ, Clemens MW, Chai M, Liu H, Di Napoli A, Lade S, **Amin M**, Young KH and Miranda R (2016). "Comprehensive immunophenotypic analysis of 64 cases of breast implant-associated anaplastic large cell lymphoma shows an activated cytotoxic with a silent T-cell receptor pattern." [Laboratory Investigation](#) 96: 345A.

[Full-Text](#)

Department of Pathology

Background: Breast implant-associated anaplastic large cell lymphoma (BI-ALCL) is a recently recognized T-cell lymphoma that arises around breast implants. The immunophenotypic profile has not been analyzed systematically. The objective of this study is to define the immunophenotypic profile of BI-ALCL based on a comprehensive analysis of cases. Design: We reviewed the world literature for cases of BI-ALCL and accrued cases in which immunophenotypic data derived using immunohistochemical or flow cytometry methods

were used and at least 5 of the following 13 markers were reported: CD3, CD4, CD8, CD30, CD43, CD45, EMA, TIA-1, Granzyme-B, ALK-1, TCR- $\alpha\beta$ and TCR- $\gamma\Delta$, and EBER in situ hybridization. When less than 5 markers were reported, we contacted corresponding authors for available material, did additional studies, and included these data. Results: We identified 32 cases in the literature and added 32 unpublished cases of BI-ALCL for a total of 64 cases available for a comprehensive analysis. CD30 was positive in all (n=64) cases, whereas ALK and EBER were negative in all tested cases, n=56 and n=25, respectively. CD3 was positive in 15 of 62 (24%) cases; CD4, 43/61 (70%); CD8, 6/57 (11%); CD43, 37/ 46 (80%); CD45, 29/49 (59%); EMA, 25/42 (60%); TIA-1, 28/46 (61%); granzyme-B, 28/ 47 (60%); TCR $\alpha\beta$, 5/ 24 (21%); and TCR $\gamma\Delta$ in 1 of 23 (4%). Thus TCR was silent in 18/24 (75%) cases. Conclusions: A comprehensive analysis of BI-ALCL reveals that most cases express CD4, CD43, CD45, and have an activated cytotoxic phenotype. All cases are negative for ALK and EBER and most cases showed silent TCR expression. These data show that the tumor cells are similar to systemic ALK negative ALCL.

Lypson ML, Prince MEP, Kasten SJ, Osborne NH, Cohan RH, **Kowalenko T**, Dougherty PJ, Reynolds RK, Spires MC, Kozlow JH and Gitlin SD (2016). "Optimizing the post-graduate institutional program evaluation process." [BMC Medical Education](#) 16(1): 1-6.

[Full-Text](#)

Department of Emergency Medicine

Background: Reviewing program educational efforts is an important component of postgraduate medical education program accreditation. The post-graduate review process has evolved over time to include centralized oversight based on accreditation standards. The institutional review process and the impact on participating faculty are topics not well described in the literature. Methods: We conducted multiple Plan-Do-Study-Act (PDSA) cycles to identify and implement areas for change to improve productivity in our institutional program review committee. We also conducted one focus group and six in-person interviews with 18 committee members to explore their perspectives on the committee's evolution. One author (MLL) reviewed the transcripts and performed the initial thematic coding with a PhD level research associate and identified and categorized themes. These themes were confirmed by all participating committee members upon review of a detailed summary. Emergent themes were triangulated with the University of Michigan Medical School's Admissions Executive Committee (AEC). Results: We present an overview of adopted new practices to the educational program evaluation process at the University of Michigan Health System that includes standardization of meetings, inclusion of resident members, development of area content experts, solicitation of committed committee members, transition from paper to electronic committee materials, and focus on continuous improvement. Faculty and resident committee members identified multiple improvement areas including the ability to provide high quality reviews of training programs, personal and professional development, and improved feedback from program trainees. Conclusions: A standing committee that utilizes the expertise of a group of committed faculty members and which includes formal resident membership has significant advantages over ad hoc or other organizational structures for program evaluation committees. © 2016 Lypson et al.

Maerz T, Kurdziel M, Newton MD, Altman P, **Anderson K**, Matthew HWT and **Baker KC** (2016). "Subchondral and epiphyseal bone remodeling following surgical transection and noninvasive rupture of the anterior cruciate ligament as models of post-traumatic osteoarthritis." [Osteoarthritis and Cartilage](#) 24(4): 698-708.

[Full-Text](#)

Department of Surgery

Department of Orthopedic Surgery

Objective: Animal models are frequently used to study post-traumatic osteoarthritis (PTOA). A common anterior cruciate ligament (ACL) injury model is surgical transection, which may introduce confounding factors from surgery. Noninvasive models could model human injury more closely. The purpose of this study was to compare subchondral and epiphyseal trabecular bone remodeling after surgical transection and noninvasive rupture of the ACL. Methods: Thirty-six rats were randomized to an uninjured control, surgical transection (Transection), or noninvasive rupture (Rupture). Animals were randomized to 4 or 10 week time points (n = 6 per group). Micro computed tomography (μ CT) imaging was performed with an isotropic voxel size of 12 μ m. Subchondral and epiphyseal bone was segmented semi-automatically, and morphometric

analysis was performed. Results: Transection caused a greater decrease in subchondral bone volume fraction (BV/TV) than Rupture in the femur and tibia. Rupture had greater subchondral bone tissue mineral density (TMD) at 4 and 10 weeks in the femur and tibia. Subchondral bone thickness (SCB.Th) was decreased in the femur in Transection only. Epiphyseal BV/TV was decreased in Transection only, and Rupture exhibited increased femoral epiphyseal TMD compared to both Control and Transection. Rupture exhibited greater femoral epiphyseal trabecular thickness (Tb.Th.) compared to Control and Transection at 4 weeks, and both Rupture and Transection had increased femoral epiphyseal Tb.Th. at 10 weeks. Epiphyseal trabecular number (Tb.N) was decreased in both injury groups at both time points. Femoral and tibial epiphyseal structure model index (SMI) increased in both groups. Conclusions: The two injury models cause differences in post-injury bone morphometry, and surgical transection may be introducing confounding factors that affect downstream bony remodeling. © 2015 Osteoarthritis Research Society International.

Maerz T, Newton MD, Matthew HWT and **Baker KC** (2016). "Surface roughness and thickness analysis of contrast-enhanced articular cartilage using mesh parameterization." *Osteoarthritis and Cartilage* 24(2): 290-298.

[Full-Text](#)

Department of Surgery

Department of Orthopedic Surgery

Objective: Articular cartilage (AC) morphology is an important metric for characterizing degeneration. We propose a novel morphologic analysis using mesh parameterization, enabling the use of surface roughness and thickness metrics to characterize degeneration in a rodent model of post-traumatic osteoarthritis. Methods: Six rats underwent anterior cruciate ligament transection (ACL-T) and six were controls (Control). At 4-weeks, femora and tibiae were harvested and imaged using contrast-enhanced micro-computed tomography (μ CT). Cartilage surfaces were manually outlined, and 2-dimensional thickness maps were generated using mesh parameterization and analyzed by thickness and surface roughness (Sa). The parameterization technique was validated against the direct distance transform (DDT) and histologic AC thickness from sagittal Safranin-O/Fast-Green sections. Parameterization and DDT measurements were also validated using known, virtual shapes with zero, one, and two planes of curvature. Results: Parameterization had 0.00-6.26% error and DDT had 5.06-12.02% error in determining thicknesses of known shapes. Parameterization thickness correlated highly to DDT thickness (femur: $r = 0.978$, $P < 0.001$; tibia: $r = 0.992$, $P < 0.001$) and histologic thickness (femur: $r = 0.952$, $P < 0.001$; tibia: $r = 0.959$, $P < 0.001$). Thickness maps enabled visualization and quantification of AC degeneration. ACL-T samples displayed general thickening of cartilage, with adjacent regions of thickening and thinning on the medial femoral condyle. Compared to Control, ACL-T thickness was higher in the whole femur, whole tibia, and all compartments and sub-compartments. Sa was higher in the whole femur and medial and lateral condyle, and the whole tibia and medial and lateral plateau. The largest increases in Sa were observed on the medial femoral condyle. Conclusions: Cartilage analysis using parameterization effectively characterized early degeneration in AC, including sub-compartmental thickening/thinning, and is a powerful tool for assessing degeneration in preclinical osteoarthritis. © 2015 Osteoarthritis Research Society International.

Maisels MJ, Coffey MP, **Gendelman B**, **Smyth M**, **Kendall A**, **Clune S**, Coleman K and **McManus S** (2016).

"Diagnosing jaundice by eye—outpatient assessment of conjunctival icterus in the newborn." *Journal of Pediatrics* 172(May): 212-214.e211.

[Full-Text](#)

Department of Pediatrics

Marco CA, Wahl RP, Counselman FL, Heller BN, Harvey AL, Joldersma KB, **Kowalenko T**, Coombs AB and Reisdorff EJ (2016). "The American Board of Emergency Medicine ConCert™ Examination: Emergency physicians' perceptions of learning and career benefits." *Academic Emergency Medicine*. ePub Ahead of Print.

[Full-Text](#)

Department of Emergency Medicine

Marco CA, Wahl RP, Counselman FL, Heller BN, **Kowalenko T**, Harvey AL, Joldersma KB and Reisdorff EJ (2016). "Physician preparation for the American Board of Emergency Medicine ConCert Examination." Academic Emergency Medicine 23(2): 191-196.

[Full-Text](#)

Department of Emergency Medicine

Objectives To maintain certification by the American Board of Emergency Medicine (ABEM), physicians are required to pass the Continuous Certification (ConCert) examination at least every 10 years. On the 2014 ConCert postexamination survey, ABEM sought to understand the manner in which ABEM diplomates prepared for the test and to identify associations between test preparation approaches and performance on the ConCert examination. **Methods** This was a cross-sectional survey study. The survey was administered at the end of the 2014 ConCert examination. Analyses included chi-square and linear regression to determine the association of preparation methods with performance. **Results** Of the 2,431 on-time test-takers, 2,338 (96.2%) were included. The most commonly used study approach was the review of written materials designed for test preparation (1,585; 67.8%), followed by an online training course (1,006; 43.0%). There were 758 (32.4%) physicians who took a single onsite board review course, while 41 (1.8%) took two or more onsite courses. Most physicians (1,611; 68.9%) spent over 35 hours preparing for the ConCert examination. The study method that was most associated with favorable test scores was the review of written materials designed for test preparation ($p < 0.001$). Attending an onsite preparation course was associated with poorer performance ($p < 0.001$). There was a significant association between no additional preparation and failing the examination (chi-square with Yates correction; $p = 0.001$). **Conclusions** A substantial majority (97.8%) of physicians taking the 2014 ABEM ConCert examination prepared for it. The majority of physicians used written materials specifically designed for test preparation. Reviewing written materials designed for test preparation was associated with the highest performance. © 2016 by the Society for Academic Emergency Medicine.

Margiewicz S, **Krishnan A**, Al Jabber A, **Rontal D** and Zakalik K (2016). "Frontal sinus meningoencephalocele with extension through the nasal drainage pathway and into the nasopharynx." Neurographics 6(1): 39-42.

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Department of Diagnostic Radiology and Molecular Imaging

Department of Surgery

Marples B, McGee M, Callan S, Bowen SE, Thibodeau BJ, **Michael DB**, **Wilson GD**, **Maddens ME**, **Fontanesi J** and Martinez AA (2016). "Cranial irradiation significantly reduces beta amyloid plaques in the brain and improves cognition in a murine model of Alzheimer's Disease (AD)." Radiotherapy and Oncology 118(3): 579-580.

[Full-Text](#)

Department of Radiation Oncology

Department of Neurosurgery

Department of Internal Medicine

Marples B, McGee M, Callan S, Bowen SE, Thibodeau BJ, **Michael DB**, **Wilson GD**, **Maddens ME**, **Fontanesi J** and Martinez AA (2016). "[Response] Cranial irradiation significantly reduces beta amyloid plaques in the brain and improves cognition in a murine model of Alzheimer's Disease (AD)." Radiotherapy and Oncology 118(1): 43-51.

[Full-Text](#)

Department of Radiation Oncology

Department of Neurosurgery

Department of Internal Medicine

Background and purpose To investigate if cranial X-irradiation reduces amyloid- β ($A\beta$) plaques and influences cognitive function in a transgenic mouse model of AD. **Methods and materials** B6.Cg-Tg (APP^{swe}PSEN1^{dE9})85Dbo/J AD-prone mice were given cranial X-irradiation. The number of $A\beta$ plaques, along with expression of AD specific genes (84 genes: Mouse Alzheimer's Disease RT2 Profiler™), radiation-associated cytokines (Milliplex® MAP Mouse Cytokine Chemokine Immunoassay) and immunohistochemistry (IL10, IL-1 β , Iba1 CD45) was assessed. Behavioral testing was performed to relate changes in $A\beta$ burden to cognitive function using a Morris water-maze task. **Results** Single X-ray doses

reduced the number ($p = 0.002$) and size ($p = 0.01$) of A β plaques. Low-dose fractionation produced greater 50.6% (1 Gy \times 10), 72% (2 Gy \times 5) and 78% (2 Gy \times 10) reductions. Irradiation was associated with gene (Pkp4, 1.5-fold, $p = 0.004$) and proteomic (MIP-2, 8-fold, $p = 0.0024$) changes at 24-48 h. Microglia increased at 4 weeks post-irradiation ($p = 0.001$). The reduction in A β burden (2 Gy \times 5) was associated with cognitive improvement ($p = 0.012$). Conclusion This is the first report that a clinically relevant course of external beam irradiation (2 Gy \times 5) produces a significant reduction in AD-associated amyloid- β plaques with a subsequent improvement in cognitive function. However, longer-term studies are needed to define the precise underlying mechanism and longevity of this response. © 2015 Elsevier Ireland Ltd. All rights reserved. Radiotherapy and Oncology 118 (2016) 4351.

Martins SL, **Starr KA**, Hellerstedt WL and Gilliam ML (2016). "Differences in family planning services by rural-urban geography: Survey of title X-supported clinics in great plains and midwestern states." Perspectives on Sexual and Reproductive Health 48(1): 9-16.

[Full-Text](#)

Department of Obstetrics and Gynecology

CONTEXT: Understanding the nature of rural-urban variation in U.S. family planning services would help address disparities in unmet contraceptive need. METHODS: In 2012, some 558 Title X-supported clinics in 16 Great Plains and Midwestern states were surveyed. Rural-urban commuting area (RUCA) codes were used to categorize clinic locations as urban, large rural city, small rural town or isolated small rural town. Bivariate analyses examined key domains of service provision by RUCA category and clinic type. RESULTS: The proportion of clinics offering walk-in appointments was lower in isolated small rural towns (47%) than in the other RUCA categories (67-73%). Results were similar for sites that do not specialize in family planning or reproductive health, but no variation was seen among specialty clinics. Overall, availability of evening or weekend appointments varied in a linear fashion, falling from 73% in urban areas to 29% in isolated small rural towns. On-site provision of most hormonal methods was most common in urban areas and least common in isolated small rural towns, while provision of nonhormonal methods was similar across RUCA categories. Sixty percent of clinics provided IUDs or implants. For clinics that did not, the only barriers that varied geographically were low IUD demand and lack of trained IUD providers; these barriers were most common in isolated rural towns (42% and 70%, respectively). CONCLUSIONS: While important characteristics, such as clinics' specialization (or lack thereof), are linked to the provision of family planning services, geographic disparities exist. © 2016 by the Guttmacher Institute.

McDonagh JR, Seth M, LaLonde TA, Khandewal AK, Wohns DH, **Dixon SR** and Gurm HS (2016). "Radial PCI and the obesity paradox: Insights from Blue Cross Blue Shield of Michigan Cardiovascular Consortium (BMC2)." Catheterization and Cardiovascular Interventions 87(2): 211-219.

[Full-Text](#)

Department of Internal Medicine

Objective To examine if transradial approach (TRA) negates the increased risk associated with femoral access in lean and morbidly obese patients undergoing percutaneous coronary intervention (PCI). Background Patients at extremes of body mass are at increased risk of bleeding after PCI. TRA has been associated with lower overall rates of bleeding compared to femoral approach. Methods and Results We studied patients undergoing emergent and elective PCI from 2010 to 2012 across 47 hospitals in Michigan who participate in the Blue Cross Blue Shield of Michigan Cardiovascular Consortium PCI registry. The primary outcomes were the incidences of bleeding and postprocedure transfusion. Propensity matching (PM) was used to adjust for nonrandomized use of TRA. TRA was used in 10,235 procedures. In PM analyses, use of TRA was associated with a reduction in bleeding (0.80 vs. 1.9%, odds ratio [OR]=0.41, 95% confidence interval [CI]=0.32-0.54, $P < 0.001$) and need for transfusion (1.4 vs. 2.5%, OR=0.56, 95% CI=0.45-0.69, $P < 0.001$) compared with femoral access. The absolute difference in bleeding and transfusion associated with TRA was largest in patients with lean body mass (BMI < 25 kg/m²) and morbid obesity (BMI \geq 40 kg/m²): Lean patients undergoing TRA had a rate of bleeding of 1.2 versus 2.8% for femoral access (OR=0.43, 95% CI=0.24-0.77, $P = 0.002$); and rate of transfusion of 2.4 versus 3.9% (OR=0.61, 95% CI=0.40-0.94, $P = 0.019$). The morbidly obese had a rate of bleeding of 0.8% for TRA versus 2.4% for femoral access (OR=0.33, 95% CI=0.44-0.72, $P = 0.004$); and rate of transfusion of 1.7 versus 3.0%, (OR=0.55, 95% CI=0.30-1.0, $P = 0.051$).

Conclusions Compared with the femoral approach, TRA is associated with a reduction in bleeding across all patients undergoing PCI and the absolute benefit was greatest in those with extremely low or high BMI. (c) 2015 Wiley Periodicals, Inc.

Menoch M, Simon HK, Hirsh D, Shim Y, Baxter AL, Clifton M, Kim D and Sturm JJ (2016). "Imaging for suspected appendicitis: Variation between academic and private practice models." [Pediatric Emergency Care](#). ePub Ahead of Print.

[Request Form](#)

Department of Emergency Medicine

BACKGROUND: Little is known regarding the effect of different emergency department (ED) practice models on computed tomography (CT) and ultrasound (US) utilization for suspected appendicitis in the ED and through the potential inpatient hospital stay. **OBJECTIVES:** Examination rates of CT and US for suspected appendicitis at 2 different pediatric EDs (PEDs) through hospital admission: an academic affiliated tertiary PED (site A) compared with a private practice tertiary care PED (site B). **METHODS:** All visits with the ICD-9 (International Classification of Diseases, Ninth Revision) chief complaint of abdominal pain were retrospectively examined from May 1, 2009, to February 21, 2012. Suspected appendicitis visits were defined as any visit with the chief complaint of abdominal pain where a complete blood cell count was obtained. Abdominal CT and US in the PED and during hospital admission were compared across the 2 sites. Return visits within 72 hours were evaluated for any missed appendicitis. **RESULTS:** Overall appendicitis rates were similar at both sites: site A, 4.7%; site B, 4.0%. The odds of having a CT scan performed during visits to the PED for abdominal pain were significantly higher at site B (odds ratio [OR], 3.19; 95% confidence interval [95% CI], 2.74–3.71), whereas the odds of having an US at site B were the opposite (OR, 0.34; 95% CI, 0.28–0.40). When evaluating only the admitted visits, the odds of having a CT were also greater at site B (OR, 2.32; 95% CI, 1.86–2.94) and having an US were less (OR, 0.57; 95% CI, 0.44–0.73). **CONCLUSIONS:** In this study of 2 PEDs with differing practice models, we identified a dramatic difference in imaging utilization among patients with suspected appendicitis.

Mi M (2016). "Application of instructional design principles in developing an online information literacy curriculum." [Medical Reference Services Quarterly](#) 35(1): 112-121.

[Full-Text](#)

Medical Library

An online information literacy curriculum was developed as an intervention to engage students in independent study and self-assessment of their learning needs and learning outcomes, develop proficiency in information skills, and foster lifelong learning. This column demonstrates how instructional design principles were applied to create the learning experiences integrated into various courses of the medical curriculum to promote active learning of information skills and maximize self-directed learning outcomes for lifelong learning. © 2016, Published with license by Taylor & Francis.

Mi M (2016). "Leveraging research synthesis for promoting and expanding library services and educational programs." [Journal of Academic Librarianship](#) 42(2): 151-153.

[Full-Text](#)

Medical Library

Research synthesis (or systematic review) uses systematic techniques to comprehensively search, select, appraise, and summarize separate empirical studies to minimize bias in the review process. The past decade saw a growing interest in research synthesis in health sciences and other disciplines. Librarians as information professionals and knowledge workers are well poised to educate faculty and students about the systematic review as one type of research methodology and diffuse it into the traditional hypothesis-driven research discourse and undertakings. This article illustrates how a medical library at a medical school developed strategies to leverage research synthesis for expanding library services and educational programs. © 2015 Elsevier Inc.

Mi M, Wu W, Qiu M, Zhang Y, Wu L and Li J (2016). "Use of mobile devices to access resources among health professions students: A systematic review." Medical Reference Services Quarterly 35(1): 64-82.

[Full-Text](#)

Medical Library

This systematic review examines types of mobile devices used by health professions students, kinds of resources and tools accessed via mobile devices, and reasons for using the devices to access the resources and tools. The review included 20 studies selected from articles published in English between January 2010 and April 2015, retrieved from PubMed and other sources. Data extracted included participants, study designs, mobile devices used, mobile resources/apps accessed, outcome measures, and advantages of and barriers to using mobile devices. The review indicates significant variability across the studies in terms of research methods, types of mobile programs implemented, resources accessed, and outcomes. There were beneficial effects of using mobile devices to access resources as well as conspicuous challenges or barriers in using mobile devices. © 2016, Published with license by Taylor & Francis.

Nishijima DK, Laurie AL, Weiss RE, Yagapen AN, Malveau SE, Adler DH, **Bastani A**, Baugh CW, Caterino JM, **Clark CL**, Diercks DB, Hollander JE, Nicks BA, Shah MN, Stiffler KA, Storrow AB, Wilber ST and Sun BC (2016). "Reliability of clinical assessments in older adults with syncope or near syncope." Academic Emergency Medicine. ePub Ahead of Print.

[Full-Text](#)

Department of Emergency Medicine

OBJECTIVES: Clinical prediction models for risk stratification of older adults with syncope or near syncope may improve resource utilization and management. Predictors considered for inclusion into such models must be reliable. Our primary objective was to evaluate the interrater agreement of historical, physical examination, and electrocardiogram (ECG) findings in older adults undergoing ED evaluation for syncope or near syncope. Our secondary objective was to assess the level of agreement between clinicians on the patient's overall risk for death or serious cardiac outcomes. **METHODS:** We conducted a cross-sectional study at 11 EDs in adults 60 years of age or older who presented with unexplained syncope or near syncope. We excluded patients with a presumptive cause of syncope (e.g., seizure), or if they were unable or unwilling to follow-up. Evaluations of the patient's past medical history and current medication use were completed by treating provider and trained research associate pairs. Evaluations of the patient's physical examination and ECG interpretation were completed by attending/resident, attending/advanced practice provider, or attending/attending pairs. All evaluations were blinded to the responses from the other rater. We calculated the percent agreement and kappa statistic for binary variables. Interrater agreement was considered acceptable if the kappa statistic was 0.6 or higher. **RESULTS:** We obtained paired observations from 255 patients; mean age was 73 years (SD 9 years), 137 (54%) were male and 204 (80%) were admitted to the hospital. Acceptable agreement was achieved in 18 of the 21 (86%) past medical history and current medication findings, none of the 10 physical examination variables, and 3 of the 13 (23%) ECG interpretation variables. There was moderate agreement (Spearman correlation coefficient, $r=0.40$) between clinicians on the patient's probability of 30-day death or serious cardiac outcome though, as the probability increased, there was less agreement. **CONCLUSIONS:** Acceptable agreement between raters was more commonly achieved with historical rather than physical examination or ECG interpretation variables. Clinicians had moderate agreement in assessing the patient's overall risk for a serious outcome at 30 days. Future development of clinical prediction models in older adults with syncope should account for variability of assessments between raters and consider the use of objective clinical variables. This article is protected by copyright. All rights reserved.

Nojkov B and **Cappell MS** (2016). "Distinctive aspects of peptic ulcer disease, Dieulafoy's lesion, and Mallory-Weiss syndrome in patients with advanced alcoholic liver disease or cirrhosis." World Journal of Gastroenterology 22(1): 446-466.

[Full-Text](#)

Department of Internal Medicine

AIM: To systematically review the data on distinctive aspects of peptic ulcer disease (PUD), Dieulafoy's lesion (DL), and Mallory-Weiss syndrome (MWS) in patients with advanced alcoholic liver disease (aALD), including

alcoholic hepatitis or alcoholic cirrhosis. METHODS: Computerized literature search performed via PubMed using the following medical subject heading terms and keywords: "alcoholic liver disease", "alcoholic hepatitis", "alcoholic cirrhosis", "cirrhosis", "liver disease", "upper gastrointestinal bleeding", "nonvariceal upper gastrointestinal bleeding", "PUD", DL, Mallory-Weiss tear", and "MWS. RESULTS: While the majority of acute gastrointestinal (GI) bleeding with aALD is related to portal hypertension, about 30%-40% of acute GI bleeding in patients with aALD is unrelated to portal hypertension. Such bleeding constitutes an important complication of aALD because of its frequency, severity, and associated mortality. Patients with cirrhosis have a markedly increased risk of PUD, which further increases with the progression of cirrhosis. Patients with cirrhosis or aALD and peptic ulcer bleeding (PUB) have worse clinical outcomes than other patients with PUB, including uncontrolled bleeding, rebleeding, and mortality. Alcohol consumption, nonsteroidal anti-inflammatory drug use, and portal hypertension may have a pathogenic role in the development of PUD in patients with aALD. Limited data suggest that *Helicobacter pylori* does not play a significant role in the pathogenesis of PUD in most cirrhotic patients. The frequency of bleeding from DL appears to be increased in patients with aALD. DL may be associated with an especially high mortality in these patients. MWS is strongly associated with heavy alcohol consumption from binge drinking or chronic alcoholism, and is associated with aALD. Patients with aALD have more severe MWS bleeding and are more likely to rebleed when compared to non-cirrhotics. Preendoscopic management of acute GI bleeding in patients with aALD unrelated to portal hypertension is similar to the management of aALD patients with GI bleeding from portal hypertension, because clinical distinction before endoscopy is difficult. Most patients require intensive care unit admission and attention to avoid over-transfusion, to correct electrolyte abnormalities and coagulopathies, and to administer antibiotic prophylaxis. Alcoholics should receive thiamine and be closely monitored for symptoms of alcohol withdrawal. Prompt endoscopy, after initial resuscitation, is essential to diagnose and appropriately treat these patients. Generally, the same endoscopic hemostatic techniques are used in patients bleeding from PUD, DL, or MWS in patients with aALD as in the general population. CONCLUSION: Nonvariceal upper GI bleeding in patients with aALD has clinically important differences from that in the general population without aALD, including: more frequent and more severe bleeding from PUD, DL, or MWS. © The Author(s) 2016.

Norton PA, Nager CW, Brubaker L, Lemack GE, **Sirls LT**, Holley R, Chai TC, Kraus SR, Zyczynski H, Smith B and Stoddard A (2016). "The cost of preoperative urodynamics: A secondary analysis of the ValUE trial." [Neurourology and Urodynamics](#) 35(1): 81-84.

[Full-Text](#)

Department of Urology

Aims Urodynamic studies (UDS) are generally recommended prior to surgical treatment for stress urinary incontinence (SUI), despite insufficient evidence that it impacts treatment plans or outcomes in patients with uncomplicated SUI. This analysis aimed to calculate the cost incurred when UDS was performed as a supplement to a basic office evaluation and to extrapolate the potential savings of not doing UDS in this patient population on a national basis. Methods This is a secondary analysis from the Value of Urodynamic Evaluation (ValUE) trial, a multicenter non-inferiority randomized trial to determine whether a basic office evaluation (OE) is non-inferior in terms of SUI surgery outcomes to office evaluation with addition of urodynamic studies (UDS). All participants underwent an OE; those patients who randomized to supplementary UDS underwent non-instrumented uroflowmetry, filling cystometry, and a pressure flow study. Costs associated with UDS were calculated using 2014 U.S. Medicare allowable fees. Models using various patient populations and payor mixes were created to obtain a range of potential costs of performing UDS in patients undergoing SUI surgery annually in the United States. Results Six hundred thirty women were randomized to OE or OE plus UDS. There was no difference in surgical outcomes between the two groups. The per patient cost of UDS varied from site to site, and included complex cystometrogram \$314-\$343 (CPT codes 51728-51729) plus complex uroflowmetry \$16 (CPT code 51741). Extrapolating these costs for US women similar to our study population, 13-33 million US dollars could be saved annually by not performing preoperative urodynamics. Conclusion For women with uncomplicated SUI and a confirmatory preoperative basic office evaluation, tens of millions of dollars US could be saved annually by not performing urodynamic testing. In the management of such women, eliminating this preoperative test has a major economic benefit. © 2014 Wiley Periodicals, Inc.

Nudleman E, Franklin MS, **Wolfe JD, Williams GA and Ruby AJ** (2016). "Resolution of subretinal fluid and outer retinal changes in patients treated with ocriplasmin." *Retina* 36(4): 738-743.

[Full-Text](#)

Department of Ophthalmology

Purpose: To evaluate the aftermarket efficacy of ocriplasmin for vitreomacular adhesion (VMA) and identify the frequency and duration of structural changes on optical coherence tomography. Methods: The authors conducted a retrospective case series of 36 eyes treated with ocriplasmin for symptomatic VMA at a single center between February 2013 and September 2013. Eyes were evaluated for release of VMA at 1 month postinjection, preinjection adhesion size, postinjection closure of macular hole, presence of subretinal fluid after release of adhesion, size of subretinal fluid, outer retinal structural change, and visual acuity at 1 month, 6 months, and 1 year. Results: Fifteen eyes (42%) had complete release of VMA at 1 month postinjection, and 78% of eyes had closure of the macular hole. Eyes that did not have an epiretinal membrane that had a smaller initial adhesion size and a smaller macular hole size were more likely to have complete release of VMA. Subretinal fluid was present after release in 73.3% of treated eyes, and ellipsoid zone changes were present in 66.7% of treated eyes. At the end of 1 year, complete resolution of subretinal fluid occurred in 87% of treated eyes with only trace subretinal fluid remaining in 2 eyes. Complete resolution of ellipsoid zone changes was found in all eyes. Best-corrected visual acuity improved throughout the first year after treatment. Conclusion: Ocriplasmin is effective in the treatment of patients with symptomatic VMA. Results can be improved with patient selection based on specific criteria. Subretinal fluid and ellipsoid zone changes are common after treatment but mostly resolve over 1 year.

Odom B, Ehlert M, Killinger K and Peters K (2016). "Characteristics and treatments used in women with persistent genital arousal disorder." *Neurourology and Urodynamics* 35(23): S64.

[Full-Text](#)

OUWB Medical Student Author

Department of Urology

Introduction: Persistent Genital Arousal Disorder (PGAD) is a rare condition, therefore little is known about its characteristics, few effective treatments are available, and response to treatments have not been well described. We evaluated characteristics and past treatments used in women with PGAD undergoing chronic neuromodulation. Methods: A retrospective chart review was performed, and a survey was designed and mailed to patients with PGAD who had a staged neuromodulation device implant with tined lead placed at the pudendal nerve. The IRB approved survey assessed patient demographics, symptomatology, previous treatments used and satisfaction with pudendal neuromodulation for PGAD symptoms. Results: Six patients were evaluated and 4/6 (67%) returned surveys. Mean age of PGAD onset was 50±eight years (median 54) and three (75%) were married. PGAD symptoms were most often characterized as unwanted (4/4 patients), distressing (4/4), intrusive (4/4), and throbbing (4/4), tender (3/4), and aching (2/4) feelings at the clitoris (3/4), pubic bone (2/4), vagina (2/4), labia (1/4) groin (1/4) and bladder (1/4). On a 0-10 scale with 0 being not limiting their activities and 10 completely limiting their activities, the mean symptoms score was 9.1±1. The most common triggers that made symptoms worse were wearing tight underwear (4/4 patients), genital pressure (4/4), and any sexual activity (3/4). Symptoms most commonly improved with a cold pack applied to the vaginal area (4/4 patients), distracting oneself (3/4), and exercise (2/4). 3/4 (75%) patients had a concomitant diagnosis of restless leg syndrome. The most effective treatments reported for PGAD symptoms management were pain medications, muscle relaxants, and pudendal nerve block (Table 1). Conclusion: Although PGAD symptoms are painful and thus, can negatively impact quality of life, few effective treatments exist. More study is needed to describe the characteristics and etiology of PGAD in order to develop effective treatments.

Odom B, Ehlert M, Killinger K and Peters K (2016). "Chronic neuromodulation as a treatment for persistent genital arousal disorder." *Neurourology and Urodynamics* 35(23): S33.

[Full-Text](#)

OUWB Medical Student Author

Department of Urology

Introduction: Persistent Genital Arousal Disorder (PGAD) is a rare condition that is characterized by unwanted, uncomfortable genital sensations and/or spontaneous ejaculation without physical or emotional stimulation. Although little is known about the etiology of PGAD and there is a lack of effective treatments, research suggests a potential correlation with pudendal nerve neuropathy. As a result, we evaluated the effects of pudendal nerve stimulation on PGAD symptoms. Methods: A retrospective chart review was performed on patients with PGAD who underwent pudendal neuromodulation for symptom management. Demographic, operative and postoperative data were collected. In addition, a survey was sent to assess patient demographics, symptoms pre and postoperative and overall patient satisfaction. Descriptive statistics were performed. Results: Six female patients met inclusion/exclusion criteria. Mean age at implant was 52±9 years. Three of six had a lead migration at an average 13 days postoperative and underwent a successful revision of their pudendal lead. Five of six (83%) patients were still implanted at time of survey average of 38 months post implantation. One was removed due to nonuse. In the four of six (67%) that completed and returned surveys all still used their pudendal neuro modulation device. Preoperatively, four of four(100%) patients had experienced symptoms continuously throughout the day. Postoperatively, two of four (50%) had symptoms only once perweek, 1/4 (25%) continuously throughout the day, and one of four (25%) did not state the frequency of symptoms. Four of four (100%) indicated pudendal neuromodulation improved their PGAD symptoms. Three of four (75%) met their treatment goals of reducing PGAD symptoms, and were satisfied with pudendal neuromodulation. One of four (25%) was only moderately satisfiedwith their treatment, however indicated they would undergo pudendal neuromodulation again. In four of four (100%) patients, pudendal neuromodulation was considered more effective than pudendal nerve blocks. When asked to rate past treatments used for PGAD, three of four (75%) indicated pudendal neuromodulation was most helpful. Pudendal neuromodulation also improved symptoms of chronic pelvic pain (4/4 patients), bowel function (3/4), and bladder function (3/4). Conclusion: Our preliminary study suggests that chronic pudendal neuromodulation may decrease the frequency of PGAD symptoms and provide symptomatic relief.

Odom BD, Ehlert M, Gupta P, **Cholyway R**, **Boura JA**, Killinger KA and **Sirls LT** (2016). "Clinical comparison of 2 trial-of-void methods after outpatient midurethral sling placement." Female Pelvic Medicine & Reconstructive Surgery 22(3): 172-174.

[Full-Text](#)

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Department of Urology

OBJECTIVES: This study aimed to assess the efficacy, efficiency, and costs of 2 methods of trial of void (TOV) after midurethral sling (MUS) placement. METHODS: A retrospective chart review was performed on women who underwent outpatient MUS between January 2013 and April 2014 by 3 urologists. Patients were excluded if they had a concomitant prolapse repair, hysterectomy, bladder/urethral injury, or any procedure that may prolong recovery room (RR) stay. Trial of void was performed by either (1) bladder instillation, catheter removal in the operating room (OR) fill with attempted void in RR, or (2) bladder instillation and catheter removal with immediate attempted void in the RR fill. Intraoperative, postoperative, and cost data were analyzed. RESULTS: Ninety-one of 183 women (mean age, 55.9 +/- 12 years; mean body mass index, 28.8 +/- 5.8 kg/m) met inclusion criteria. Eighty-three had a transobturator sling. Forty-nine (54%) had an OR fill and 42 (46%) had an RR fill; age and body mass index were similar between groups. The OR fill group had shorter median operative time (15 vs 22 minutes; P = 0.003) and median RR time (138 vs 161, P = 0.033). The OR fill and RR fill groups did not differ in TOV failure rate (3/49 vs 6/42; P = 0.29), overall mean LOS (4.96 vs 5.51 hours; P = 0.055), and median RR costs (\$627 vs \$678; P = 0.065). No patient had urinary retention after successful TOV. CONCLUSIONS: After MUS placement, both OR fill and RR fill TOV methods are effective and efficient with similar TOV failure rates.

Ogunyemi D, Aurioles A, **Olson R**, Sugiyama N and **Bahado-Singh R** (2016). "Current status of the OBGYN hospitalist workforce in the United States." American Journal of Obstetrics and Gynecology 214(1): S339-S340.

[Full-Text](#)

Department of Obstetrics and Gynecology

Department of Neurosurgery

Ogunyemi D, Katherine B, **Alpay Z**, Sugiyama N, **Kulkarni N**, **Azkoul W**, **Boura J**, Crossley H and Qu L (2016). "Obstetrical and perinatal correlates of failed induction in term infants in a single health system." [American Journal of Obstetrics and Gynecology](#) 214(1): S323.

[Full-Text](#)

Department of Obstetrics and Gynecology

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

OBJECTIVE: To determine correlates of failed induction. **STUDY DESIGN:** An electronic database of singleton pregnancies delivered at term (>37 weeks gestational age) in 2013 in our health system which included approximately 18 months follow up data was analyzed for those who had an induction (cervical ripening procedure). We compared those who had a cesarean delivery versus those who had a vaginal delivery using Chi-square, Wilcoxon rank sum tests and multivariable logistic regression analysis. **RESULTS:** Of 1208 cases with induction, 748 (61.9%) had a vaginal delivery and 460(38.1%) had a cesarean section (failed induction). Prenatal factors that increased the risk of a failed induction included BMI, gestational age, larger babies, diabetic and hypertensive disorders. A higher pelvic station and lower cervical dilation on admission significantly increased the risk of failed induction. African-American ethnicity increased whilst Non-Hispanic White ethnicity decreased risk. During labor, cervical examination parameters, symptomology and treatment for chorioamnionitis, use of insulin and Labetalol all increased the risk of a failed induction. Abnormal fetal heart tracing coding and tachycardia increased the risk while bradycardia occurred more in vaginal deliveries. For adverse outcomes, women who had a successful induction were more likely to have abruption, shoulder dystocia and severe perineal lacerations. Conversely, for mothers with failed induction; nearly half had uterine atony with increased blood loss, length of stay and readmissions. Neonates with failed induction had a 2-fold increase in NICU admission, 60% increase in major neonatal morbidity and increased length of stay. Regression analysis showed that independent predictors of failed induction were gestational age ($p=0.0002$, OR =1.24), BMI ($p<0.0001$, OR=1.07), diabetes ($p=0.018$, OR=4.38), admission cervical dilation ($P<0.0001$, OR =0.66), Gentamicin/ Clindamycin in labor ($p<0.0001$, OR =4.37), and abnormal fetal heart rate coding ($p=P<0.0001$, OR =3.68). **CONCLUSION:** The strongest predictors of having a cesarean after being induced were diabetes, antibiotics during labor, abnormal fetal heart rate tracing, and decreased admission cervical dilatation. Failed induction is associated with major maternal and neonatal adverse outcomes. (Table Presented).

Oliver-McNeil S, Templin TN and **Haines DE** (2016). "Preoperative ICD risk score variables predict 30-day readmission after implantable cardioverter defibrillator implantation in patients with heart failure." [Heart and Lung: Journal of Acute and Critical Care](#) 45(1): 29-33.

[Full-Text](#)

Department of Internal Medicine

Objective: To determine if preoperative ICD Risk Score for Adverse Outcome (ICD-RSAO) would predict need for hospital 30-day readmission. **Background:** Pre-analysis of National Cardiovascular Data Registry ICD database identified preoperative predictors of adverse outcomes associated with ICD implantation. **Methods:** Logistic regression, descriptive statistics and Chi-square were used to examine the relationship between ICD-RSAO and 30-day readmission after ICD implantation. **Results:** BUN ≥ 30 , history of lung disease, NYHA Class IV and device implant during inpatient stay were predictive of 30-day readmission ($P = 0.001$; 95% CI = 0.58-0.79). Patients with a combination of two or more of four variables were more likely to be readmitted (Hosmer-Lemeshow ($\chi^2 = 3.44$, $P = 0.49$), c-statistic = 0.71, and Nagelkerke $R^2 = 0.15$). **Conclusion:** Patients who have elevated BUN's, NYHA Class IV, chronic lung disease and ICD implantation during a concomitant hospital admission are at increased risk for readmission and need early follow up. © 2016 Elsevier Inc.

O'Meara C, **Boyanton BL**, Spurlin D and **Carpenter CF** (2016). "Cutaneous fungal infection with alternaria in a patient with myelodysplastic syndrome: Successful treatment with topical silver chloride gel." Infectious Diseases in Clinical Practice 24(2): 112-114.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

We report a case of cutaneous alternariosis in an 80-year-old man with myelodysplastic syndrome. He developed a small slippery mobile mass in the proximal right middle finger. After excision, the mass revealed suppurative and granulomatous inflammation with negative special stains, possibly representing a ruptured epidermoid cyst or follicle. The biopsy wound did not heal, despite application of antibiotic ointment. Repeat biopsy findings suggested an infectious etiology; special stains were again negative, and the tissue was not sent for culture. The wound persisted, and subsequent deeper biopsy with culture eventually identified *Alternaria* species as a pathogen. By the time the *Alternaria* was identified, the patient, on his own initiative, had begun applying a topical over-the-counter silver chloride gel, with significant improvement in the wound. He was advised to continue its application, and within 3 months his wound had completely healed.

Osborne JD, Gowda AL, **Wiater B** and **Wiater JM** (2016). "Rotator cuff rehabilitation: Current theories and practice." Phys Sportsmed 44(1): 85-92.

[Request Form](#)

Department of Orthopedic Surgery

A fully functioning, painless shoulder joint is essential to maintain a healthy, normal quality of life. Disease of the rotator cuff tendons (RCTs) is a common issue that affects the population, increasing with age, and can lead to significant disability and social and health costs. RCT injuries can affect younger, healthy patients and the elderly alike, and may be the result of trauma or occur as a result of chronic degeneration. They can be acutely painful, limited to certain activities or completely asymptomatic and incidental findings. A wide variety of treatment options exists ranging from conservative local and systemic pain modalities, to surgical fixation. Regardless of management ultimately chosen, physiotherapy of the RCT, rotator cuff muscles and surrounding shoulder girdle plays an essential role in proper treatment. Length of treatment, types of therapy and timing may vary if therapy is definitive care or part of a postoperative protocol. Allowing time for adequate RCT healing must always be considered when implementing ROM and strengthening after surgery. With current rehabilitation methods, patients with all spectrums of RCT pathology can improve their function, pain and quality of life. This manuscript reviews current theories and practice involving rehabilitation for RCT injuries.

Paich K, Dunn R, Skolarus T, Montie J, Hollenbeck B, Palapattu G, **Wood Jr D**, Mitchell S, Hola V, Erickson K, Shifferd J and Wittmann D (2016). "Preparing patients and partners for recovery from the side effects of prostate cancer surgery: A group approach." Urology 88: 36-41.

[Full-Text](#)

Department of Urology

Objective To evaluate the acceptance and knowledge attained in a preoperative psychoeducational group seminar for patients and partners. Education before radical prostatectomy (RP) helps patients set appropriate expectations for functional recovery. We hypothesized that the seminar would be acceptable and would facilitate learning. Materials and Methods Men scheduled for RP from March 1, 2012, to July 31, 2013, were eligible, and partners were invited. The 2.5-hour interactive seminar included multidisciplinary presentations about surgery-related urinary and sexual outcomes, rehabilitation, and couples' work toward recovering sexual intimacy. A satisfaction and knowledge survey was administered immediately afterward. We analyzed demographic and satisfaction data with descriptive statistics and evaluated congruence of patients' and partners' knowledge responses using nonparametric statistics. Results Of 618 patients scheduled, 426 patients and 342 partners attended; 323 couples provided complete data. Over 90% of participants found the seminar informative and 74% found a group setting comfortable; 84% found travel to the seminar burdensome. Most patients and partners (84% and 90%, respectively) expected some urinary incontinence and understood rehabilitation strategies to regain bladder control; 84% of patients and 78% of partners expected postsurgery sexual activity to be different and 73% of patients and 65% of partners expected

surgery to make erections worse. Couples were incongruent regarding frequency of incontinence, likelihood of erectile dysfunction, and sex being different after surgery: patients were more realistic. Conclusion A preoperative psychoeducational group seminar on the recovery from RP side effects promotes realistic expectations and is acceptable to patients and partners. Incongruent couples may need further instruction after surgery. Web-based methodology could improve access and should be studied in future research. © 2016 Elsevier Inc.

Peters KM, Killinger KA, Gupta P, Gaines N, **Bartley J**, Wolfert C, **Boura JA** and **Gilleran J** (2016). "Patients with a variety of urological symptoms improve after tined lead implant at the pudendal nerve." Neurourology and Urodynamics 35(23): S99-S100.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: Tined lead placed directly at the pudendal nerve activates S2-4 thereby providing increased afferent stimulation compared to leads placed at S3. Pudendal neuromodulation (PNM) can be an effective alternative especially in patients that fail sacral neuromodulation (SNM). We examined lead migrations, reoperations and explants, and symptom changes after PNM. Methods: Patients in our neuromodulation database that had PNM were reviewed. Demographics, history and data from patient completed voiding diaries, Interstitial Cystitis Symptom/ Problem indices (ICSIPI) and Overactive Bladder symptom severity (OABq ss) and health related quality of life (HRQOL) questionnaires at pre-implant, three months, six months, and one, two, and three years were evaluated. Descriptive statistics and repeated measures analyses were performed. Results: Of 168 patients that had PNM (83% female; mean age 53±17.7 years), 143/168 (85%) proceeded to generator implant. Primary diagnoses were urgency/frequency with/ without urge incontinence (66), interstitial cystitis (35), urinary retention (19), pelvic pain (19), neurological diagnosis (Two with pudendal neuropathy and one with ejaculatory dysfunction) and fecal incontinence (1). Eight patients had a secondary diagnosis of pudendal neuropathy. 86/143 (60%) had previously failed SNM. Mean follow up was 32.4 months, during which eight lead migrations requiring reoperation occurred. Twenty patients were explanted at median 14.4months (range 0.7 to 62.9 months). Explant reasons were lack of symptom improvement (8), need for MRI (7), device related pain (2), symptoms improved (1), patient requested removal (1), and requesting continent diversion (1). Onvoiding diaries, improvements in urinary frequency (P=0.0003), urgency severity (p<0.0001), and incontinence episodes/day (P=0.0050) were demonstrated and average volume/void also slightly improved (P=0.0497). ICSIPI, OABq ss and HRQOL scores also improved (p<0.0001 for all). In the 86/143 (60%) patients that had urogenital pain at baseline, at three months 12/44 (27.3%) reported moderate/marked improvement in pain and 10/48 (20.8%) no longer had pain. Conclusion: Pudendal neuromodulation is a reasonable alternative for select patients, particularly those who fail to respond to sacral stimulation. More research is needed in larger samples to identify which patients and symptoms improve most.

Pinkas D and **Wiater J** (2016). "Functional anatomy of the shoulder," In Placzek L and Boyce D (ed). Orthopaedic Physical Therapy Secrets. Philadelphia: Mosby Elsevier.

[Request Form](#)

Department of Orthopedic Surgery

Platts-Mills TF, Flannigan SA, Bortsov AV, Smith S, Domeier RM, **Swor RA**, Hendry PL, Peak DA, Rathlev NK, Jones JS, Lee DC, Keefe FJ, Sloane PD and McLean SA (2016). "Persistent pain among older adults discharged home from the Emergency Department after motor vehicle crash: A prospective cohort study." Annals of Emergency Medicine 67(2): 166-176.e161.

[Full-Text](#)

Department of Emergency Medicine

Study objective Motor vehicle crashes are the second most common form of trauma among older adults. We seek to describe the incidence, risk factors, and consequences of persistent pain among older adults evaluated in the emergency department (ED) after a motor vehicle crash. Methods We conducted a prospective longitudinal study of patients aged 65 years or older who presented to one of 8 EDs after motor

vehicle crash between June 2011 and June 2014 and were discharged home after evaluation. ED evaluation was done through in-person interview; follow-up data were obtained through mail-in survey or telephone call. Pain severity (0 to 10 scale) overall and for 15 parts of the body were assessed at each follow-up point. Principal component analysis was used to assess the dimensionality of the locations of pain data. Participants reporting pain severity greater than or equal to 4 attributed to the motor vehicle crash at 6 months were defined as having persistent pain. Results Of the 161 participants, 72% reported moderate to severe pain at the ED evaluation. At 6 months, 26% of participants reported moderate to severe motor vehicle crash-related pain. ED characteristics associated with persistent pain included acute pain severity; pain located in the head, neck, and jaw or lower back and legs; poor self-rated health; less formal education; pre-motor vehicle crash depressive symptoms; and patient's expected time to physical recovery more than 30 days. Compared with individuals without persistent pain, those with persistent pain were substantially more likely at 6-month follow-up to have also experienced a decline in their capacity for physical function (73% versus 36%; difference=37%; 95% confidence interval [CI] 19% to 52%), a new difficulty with activities of daily living (42% versus 17%; difference=26%; 95% CI 10% to 43%), a 1-point or more reduction in overall self-rated health on a 5-point scale (54% versus 30%; difference=24%; 95% CI 6% to 41%), and a change in their living situation to obtain additional help (23% versus 8%; difference=15%; 95% CI 2% to 31%). Conclusion Among older adults discharged home from the ED post-evaluation after a motor vehicle crash, persistent pain is common and frequently associated with functional decline and disability. © 2015 American College of Emergency Physicians.

Pressman A, **Sawyer K**, Vanloon J and **Swor R** (2016). "Association between treatment with left ventricular assist device and survival in patients suffering cardiac arrest in the state of Michigan." Journal of the American College of Cardiology 67(13): 221.

[Full-Text](#)

Department of Emergency Medicine

Background: The benefit of mechanical circulatory support after cardiac arrest is controversial. Our objective was to assess the association between treatment with a left ventricular assist device (LVAD) and survival after cardiac arrest in the Michigan Inpatient Database (MIDB). Methods: We performed a retrospective study of adult (≥ 18 years) cardiac arrest patients in MIDB from 7/1/2010 to 6/30/2013. Patient demographics (age, sex), clinical characteristics (ventricular fibrillation (VF), cardiogenic shock, MI), treatments (PCI, LVAD) and outcome (survival to discharge) were electronically abstracted based on ICD-9 codes. LVAD was defined as either intra-aortic balloon pump (IABP) or percutaneous VAD. Results: A total of 103 hospitals contributed 4,393 patients for analysis: 1,422 patients (32.4%) presented in VF, 1,174 (26.7%) with MI, and 779 (17.7%) in cardiogenic shock. Only 197 patients (4.5%) received an LVAD, mostly IABPs (182 (4.1%)). Table 1 details findings associated with survival to discharge. Mixed-effects logistic regression revealed LVAD was significantly associated with survival among all patients (OR 1.8 (1.28-2.54)) and those with MI (OR 1.95 (1.31-2.93)) or cardiogenic shock (OR 1.96 (1.29-2.98)). Conclusions: While few patients from MIDB were treated with LVAD after cardiac arrest, those patients were more likely to survive to discharge. The impact of LVAD within the post-arrest system of care and appropriate patient selection for LVAD need prospective investigation. (Table Presented).

Ramirez LM, Goukasian N, Porat S, **Hwang KS**, Eastman JA, Hurtz S, Wang B, Vang N, Sears R, Klein E, Coppola G and Apostolova LG (2016). "Common variants in ABCA7 and MS4A6A are associated with cortical and hippocampal atrophy." Neurobiology of Aging 39: 82-89.

[Full-Text](#)

OUWB Medical Student Author

The precise physiologic function of many of the recently discovered Alzheimer's disease risk variants remains unknown. The downstream effects of genetic variants remain largely unexplored. We studied the relationship between the top 10 non-APOE genes with cortical and hippocampal atrophy as markers of neurodegeneration using 1.5T magnetic resonance imaging, 1-million single nucleotide polymorphism Illumina Human Omni-Quad array and Illumina Human BeadChip peripheral blood expression array data on 50 cognitively normal and 98 mild cognitive impairment subjects. After explicit matching of cortical and hippocampal morphology, we computed in 3D, the cortical thickness and hippocampal radial distance

measures for each participant. Associations between the top 10 non-APOE genome-wide hits and neurodegeneration were explored using linear regression. Map-wise statistical significance was determined with permutations using threshold of $p < 0.01$. MS4A6A rs610932 and ABCA7 rs3764650 demonstrated significant associations with cortical and hippocampal atrophy. Exploratory MS4A6A and ABCA7 peripheral blood expression analyses revealed a similar pattern of associations with cortical neurodegeneration. To our knowledge, this is the first report of the effect of ABCA7 and MS4A6A on neurodegeneration. © 2016 Elsevier Inc.

Ramirez V, Bartley J, Killinger K, Boura J and Gupta P (2016). "Outcomes of sacral neuromodulation in patients with prior surgical treatment of stress urinary incontinence and pelvic organ prolapse." Neurourology and Urodynamics 35(23): S32.

[Full-Text](#)

OUWB Medical Student Author

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: To evaluate prior stress urinary incontinence (SUI) or pelvic organ prolapse (POP) surgery's impact on sacral neuromodulation (SNM) outcomes. Methods: Women enrolled in our prospective database that had SNM and urinary incontinence (UI) were grouped by history/no history of SUI/POP surgery. Outcomes, measured at three, six, 12 and 24 months with voiding diaries, Interstitial Cystitis Symptom/Problem indices (ICSI-PI), Overactive Bladder Symptom Severity (OAB-q SS)/Health related quality of life (HRQOL), and Global Response Assessment (GRA) were analyzed with Pearson's Chi-square, Fisher's Exact, and Wilcoxon rank sum tests. Results: Of the 108 of 210 women with prior SUI/POP procedures, more had prior hysterectomy ($p < 0.001$). Stage 2 implant rates were similar between groups. On diaries, SUI/POP group had more UI episodes/day at one year ($P = 0.027$) and lower volume/void at two years ($P = 0.041$). ICSI-PI, OAB-q SS and HRQOL did not differ between groups at any time point. ICSI-PI scores improved over time ($p < 0.0001$ for both groups). A higher proportions of SUI/POP patients leaked urine at six months (92% vs. 73.2%; $P = 0.009$) and 12 months (92% vs. 67%; $P = 0.002$); a lower proportion (40% vs. 60%; $P = 0.037$) had improved urgency at six months on GRA. Fewer SUI/POP patients reported moderately/markedly improved symptoms at 12 (51% vs. 71%; $P = 0.045$) and 24 months (42% vs. 66%; $P = 0.031$). Satisfaction rates were similar between groups and the majority in each group would undergo SNM again. Conclusion: Although SNM improves voiding symptoms in women with prior SUI/POP procedures, underlying voiding/ pelvic floor dysfunction may limit level of improvement.

Renard BM, Hanson ID and **Goldstein JA** (2016). "Severe mitral regurgitation and biventricular heart failure successfully treated with biventricular percutaneous axial flow pumps as a bridge to mitral valve surgery." Catheterization and Cardiovascular Interventions. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Prompt recognition of acute right ventricular failure is essential in order to provide timely hemodynamic support. We report a case of a patient with severe mitral regurgitation complicated by cardiogenic shock that failed to improve with left ventricular support alone. The recognition of concomitant right ventricular failure led to the addition of a right ventricular support device, resulting in dramatic hemodynamic improvement.

Rezaee ME, Ward CE, Odom BD and Pollock M (2016). "Prostate cancer screening practices and diagnoses in patients age 50 and older, Southeastern Michigan, pre/post 2012." Preventive Medicine 82(Jan): 73-76.

[Full-Text](#)

OUWB Medical Student Author

Department of Internal Medicine

Introduction: Studies investigating the regional impact of the 2012 U.S. Preventive Services Task Force (USPSTF) recommendation against the use of prostate specific antigen (PSA) screening for prostate cancer have been limited. Methods: A retrospective cohort study was conducted on men age 50 years and older in Southeastern Michigan pre ($n = 3647$) and post ($n = 3618$) USPSTF recommendation. PSA screening, transrectal

ultrasound, and prostate biopsy rates were evaluated pre/post using a generalized piecewise linear model with a Poisson distribution, and log link. A knot was placed at year 2011 to estimate pre/post slope coefficients. Generalized estimating equations were used to estimate the marginal probability of a prostate diagnosis as a logistic function of pre and post-period, and comorbidities. Results: PSA utilization significantly increased ($\beta=0.28$; 95% CI: 0.25, 0.31) during the pre-period, but significantly decreased in the post-period ($\beta=-0.29$; 95% CI: -0.34, -0.25). Prostate biopsies decreased pre ($\beta=-0.16$; 95% CI: -0.25, -0.08) and did not change post ($\beta=0.01$; 95% CI: -0.09, 0.12). Transrectal ultrasounds were stable pre ($\beta=0.16$; 95% CI: -0.03, 0.35) and significantly decreased post ($\beta=-0.27$; 95% CI: -0.50, -0.04). Patients in the post-period had a decreased probability of having a diagnosis of prostate cancer (OR: 0.81; 95% CI: 0.74-0.89) compared to the pre-period. Conclusion: Our study demonstrates how PSA tests are still being frequently used in Southeastern Michigan. Further research is needed to better understand regional variation in prostate cancer screening practices in the U.S. © 2015 Elsevier Inc.

Rimmke N, **Maerz T**, Cooper R, **Yadavalli S** and **Anderson K** (2016). "Arthroscopic suture bridge rotator cuff repair: Functional outcome, repair integrity, and preoperative factors related to postoperative outcome." Physician and Sportsmedicine 44(2): 126-132.

[Request Form](#)

Department of Surgery

Department of Diagnostic Radiology and Molecular Imaging

Department of Orthopedic Surgery

Objectives: To assess the retear rate, retear size and location, the clinical impact of a retear, and preoperative patient factors related to postoperative outcome after arthroscopic suture bridge rotator cuff repair.

Methods: Fifty six patients with an isolated, full-thickness supraspinatus tendon tear who underwent arthroscopic suture bridge rotator cuff repair were retrospectively identified. Patients were evaluated and rotator cuff integrity was assessed using ultrasonography. Visual analog score (VAS), the American Shoulder and Elbow Surgeon (ASES) score, shoulder range of motion and strength were used for clinical evaluation. Retears were assessed for size and location on ultrasonography. Results: Forty two patients (75%) aged a mean 59.7 ± 8.6 years (range 41–79 years) were available for follow-up at a mean 13.5 months.

Postoperative evaluation indicated significant improvements in ASES score (49.76 ± 18.2 to 86.57 ± 13.4 , $P < 0.001$), VAS pain score (4.69 ± 2.17 to 0.63 ± 1.29 , $P < 0.001$), forward elevation range of motion ($144.1^\circ \pm 29.9$ to $159.69^\circ \pm 13.9$, $P = 0.002$), and internal rotation ROM ($44.13^\circ \pm 12.0$ to $52.09^\circ \pm 12.0$, $P = 0.003$).

The retear rate was 14.28% (6/42). Patients with retears were not older ($P = 0.526$) but had a larger preoperative tear size ($3.25 \text{ cm} \pm 0.5$ vs $2.05 \text{ cm} \pm 0.48$, $P < 0.001$). Preoperative tear size was significantly associated with a postoperative retear ($P < 0.001$). The duration of preoperative symptoms was significantly associated with pain ($P = 0.029$), pain improvement ($P = 0.013$), internal rotation ROM ($P = 0.002$), and internal rotation strength ($P = 0.004$). Conclusions: Arthroscopic suture bridge repair provides good clinical results with a low retear rate. The duration of preoperative symptoms was associated with postoperative outcome, indicating that delaying surgery may result in inferior outcomes. Level of Evidence: IV, Case Series

© 2016 Informa UK Limited, trading as Taylor & Francis Group

Rogers AJ, Kuppermann N, **Thelen AE**, Stanley RM and Maher CO (2016). "Children with arachnoid cysts who sustain blunt head trauma: Injury mechanisms and outcomes." Academic Emergency Medicine 23(3): 358-361.

[Full-Text](#)

OUWB Medical Student Author

Objectives Arachnoid cysts are abnormal intracranial fluid collections, and there is concern that these cysts may bleed or rupture following blunt head trauma. Our objective was to determine the risk of cyst-related complications in a cohort of children with arachnoid cysts who were evaluated for head trauma. Methods We analyzed the Pediatric Emergency Care Applied Research Network (PECARN) head trauma public use data set, which was the product of a study that enrolled children with blunt head trauma from June 2004 to September 2006. We identified children with arachnoid cysts on cranial computed tomography (CT) and described the patient demographics, mechanisms of injury, clinical presentations, CT evidence of traumatic brain injury (TBI), and clinical outcomes. Clinically important TBI was defined as TBI leading to: 1) death from TBI, 2) neurosurgical intervention, 3) intubation for > 24 hours for the TBI, or 4) hospitalization for 2 or more

nights for the head injury in association with TBI on CT. Results Data were available for 43,399 children who sustained blunt head trauma, of whom 15,899 had cranial CT scans obtained and 68 (0.4%) had arachnoid cysts. Falls were the most common mechanisms of injury (47%) and 87% of children had either moderate or severe injury mechanisms. Glasgow Coma Scale (GCS) scores ranged from 6 to 15, with 61 (90%) having GCS scores of 15. Two of the children with arachnoid cysts had TBIs on CT, one of which was clinically important. There were no identified cases of arachnoid cyst-related bleeding or complications. Conclusions In this cohort of 68 children with arachnoid cysts who sustained head trauma, none demonstrated cyst-related bleeding or complications. This suggests the risk of arachnoid cyst-related complications in children following blunt head trauma is low and evaluation should align with existing clinical decision rules. © 2016 by the Society for Academic Emergency Medicine.

Rosner MS, Feinberg DL, Doble JE and **Rosner AJ** (2016). "Treatment of vertical heterophoria ameliorates persistent post-concussive symptoms: A retrospective analysis utilizing a multi-faceted assessment battery." *Brain Injury* 30(3): 311-317.

[Request Form](#)

Department of Surgery

Primary objective: To examine the effectiveness of neutralizing prismatic lenses for reduction of headache, dizziness and anxiety in patients with persistent post-concussive symptoms and vertical heterophoria (VH). Background: Approximately 5-10% of patients with traumatic brain injury (TBI) develop persistent post-concussive symptoms. Many rehabilitation/treatment modalities are tried, but are largely unsuccessful, indicating a need for more effective treatment. Design and method: This retrospective study included 38 patients with persistent post-concussive symptoms, who were diagnosed by an optometric binocular vision sub-specialist with VH (a sub-set of binocular vision dysfunction [BVD] that manifests as vertical eye and image misalignment). Data was collected both before and after prism application and included validated survey instruments for headache, dizziness, anxiety and BVD symptom burden; subjective rating (0-10 scale) of headache, dizziness and anxiety severity; and a sub-analysis of the BVD survey instrument questions that pertain specifically to headache, dizziness and anxiety. Upon conclusion of treatment, subjective assessment of overall improvement of heterophoria symptoms was obtained utilizing a 10 cm visual analogue scale. Outcomes: Results demonstrated marked reduction in all measures of headache, dizziness and anxiety (19.1-60.8%) and an overall subjective improvement of VH symptoms of 80.2%. Conclusions: Neutralizing prismatic lenses are an effective treatment of headache, dizziness and anxiety in patients with persistent post-concussive symptoms and VH.

Sabesan VJ, Lombardo D, Josseland D, Buzas D, Jelsema T, Petersen-Fitts GR and **Wiater JM** (2016). "The effect of deltoid lengthening on functional outcome for reverse shoulder arthroplasty." *Musculoskeletal Surgery*. ePub Ahead of Print.

[Full-Text](#)

Department of Orthopedic Surgery

PURPOSE: Reverse shoulder arthroplasty (RSA) is based on the biomechanical advantages of lengthening the deltoid while medializing its center of rotation (COR). Little evidence exists describing the clinical benefits of these biomechanical advantages. The purpose of this study is to assess the relationship between deltoid lengthening and medialization of the COR with functional outcomes for RSA patients. METHODS: We retrospectively reviewed patients treated with primary RSA. Radiographic measurements of deltoid length and COR, assessment of forward elevation (FE) and external rotation (ER), and functional outcome scores were obtained pre- and postoperatively. Linear regression analyses were performed to assess the relationship between these radiographic measurements and changes in shoulder functionality. RESULTS: On average, patients improved significantly in function and functional outcome scores. Postoperative COR correlated weakly with postoperative FE. There were weakly negative correlations between increase in acromion to greater tuberosity distance and postoperative FE, and between deltoid lengthening and FE improvement. CONCLUSIONS: Our results suggest that deltoid lengthening does not correlate with improvements in active FE or ER. These findings could indicate that change in deltoid length is less important than previously thought. Furthermore, the negative correlations seen could indicate that there is over-tensioning of the deltoid in specific cases. Further studies are needed to better assess the role of

deltoid length and other factors that may impact RSA outcomes.

Sabesan VJ, Lombardo DJ, Shahriar R, Petersen-Fitts GR and **Wiater JM** (2016). "The effect of glenosphere size on functional outcome for reverse shoulder arthroplasty." Musculoskeletal Surgery. ePub Ahead of Print.

[Full-Text](#)

Department of Orthopedic Surgery

PURPOSE: Reverse shoulder arthroplasty (RSA) is an effective surgery for a variety of patients with difficult shoulder pathology. Since postsurgical outcomes are often variable, there has been great effort made to optimize the design and use of these implants. Previous studies demonstrated an association between increased glenosphere size and improved range of motion. The purpose of this study is to assess the relationship between glenosphere size, range of motion, and functional outcome scores. METHODS: This is a retrospective cohort study of 140 patients (148 shoulders) undergoing reverse shoulder arthroplasty. All patients were assessed pre- and postoperatively for range of motion, Constant score, ASES score, and Subjective Shoulder Value. Improvements in these variables were compared for patients treated with three different glenosphere sizes (36, 40, 42 mm). RESULTS: All groups had a mean improvement in range of motion and functional outcome scores, but there were no statistically significant differences between groups when controlling for preoperative differences. CONCLUSIONS: Our findings do not support a strong role for glenosphere size as a singular factor affecting range of motion or patient-reported outcome following RSA. These problems are most likely due to the multifactorial nature of shoulder dynamics. For this reason, assessing the effect a single surgical or biomechanical parameter on function has been challenging.

Safian RD (2016). "Double cerebral embolic protection: Is more less?" Catheterization and Cardiovascular Interventions 87(3): 438-439.

[Full-Text](#)

Department of Internal Medicine

Safian RD (2016). "Restenosis after PCI: Battered but not beaten." Catheterization and Cardiovascular Interventions 87(2): 209-210.

[Full-Text](#)

Department of Internal Medicine

Safian RD (2016). "Women in interventional cardiology: Is there a problem?" Catheterization and Cardiovascular Interventions 87(4): 669-670.

[Full-Text](#)

Department of Internal Medicine

Sayegh SE and **Hajj Hussein I** (2016). "Overview of some emerging infectious diseases: A new era for new vaccines." Human & Health 34(Win): 11-14.

[Full-Text](#)

Department of Biomedical Sciences (OU)

Schmidt KJ, Doshi MR, Holzhausen JM, Natavio A, Cadiz M and **Winegardner JE** (2016). "Treatment of severe alcohol withdrawal." Annals of Pharmacotherapy 50(5): 389-401.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

OBJECTIVE: Approximately 50% of patients with alcohol dependence experience alcohol withdrawal. Severe alcohol withdrawal is characterized by seizures and/or delirium tremens, often refractory to standard doses of benzodiazepines, and requires aggressive treatment. This review aims to summarize the literature pertaining to the pharmacotherapy of severe alcohol withdrawal. DATA SOURCES: PubMed (January 1960 to October 2015) was searched using the search terms alcohol withdrawal, delirium tremens, intensive care, and refractory. Supplemental references were generated through review of identified literature citations. STUDY SELECTION AND DATA EXTRACTION: Available English language articles assessing pharmacotherapy options for adult patients with severe alcohol withdrawal were included. DATA SYNTHESIS: A PubMed search

yielded 739 articles for evaluation, of which 27 were included. The number of randomized controlled trials was limited, so many of these are retrospective analyses and case reports. Benzodiazepines remain the treatment of choice, with diazepam having the most favorable pharmacokinetic profile. Protocolized escalation of benzodiazepines as an alternative to a symptom-triggered approach may decrease the need for mechanical ventilation and intensive care unit (ICU) length of stay. Propofol is appropriate for patients refractory to benzodiazepines; however, the roles of phenobarbital, dexmedetomidine, and ketamine remain unclear. CONCLUSIONS: Severe alcohol withdrawal is not clearly defined, and limited data regarding management are available. Protocolized administration of benzodiazepines, in combination with phenobarbital, may reduce the need for mechanical ventilation and lead to shorter ICU stays. Propofol is a viable alternative for patients refractory to benzodiazepines; however, the role of other agents remains unclear. Randomized, prospective studies are needed to clearly define effective treatment strategies.

Schulman-Marcus J, Ó Hartaigh B, Gransar H, Lin F, Valenti V, Cho I, Berman D, Callister T, Delago A, Hadamitzky M, Hausleiter J, Al-Mallah M, Budoff M, Kaufmann P, Achenbach S, **Raff G, Chinnaiyan K**, Cademartiri F, Maffei E, Villines T, Kim YJ, Leipsic J, Feuchtner G, Rubinshtein R, Pontone G, Andreini D, Marques H, Shaw L and Min JK (2016). "Sex-specific associations between coronary artery plaque extent and risk of major adverse cardiovascular events the CONFIRM Long-Term Registry." *JACC: Cardiovascular Imaging* 9(4): 364-372.

[Full-Text](#)

Department of Internal Medicine

Objectives The purpose of this study was to examine sex-specific associations, if any, between per-vessel coronary artery disease (CAD) extent and the risk of major adverse cardiovascular events (MACE) over a 5-year study duration. **Background** The presence and extent of CAD diagnosed by coronary computed tomography angiography (CTA) is associated with increased short-term mortality and MACE. Nevertheless, some uncertainty remains regarding the influence of sex on these findings. **Methods** 5,632 patients (mean age 60.2 ± 11.8 years, 36.5% women) from the CONFIRM (Coronary CT Angiography Evaluation for Clinical Outcomes: An International Multicenter) registry were followed for 5 years. Obstructive CAD was defined as $\geq 50\%$ luminal stenosis in a coronary vessel. Using Cox proportional hazards models, we calculated the hazard ratio (HR) for incident MACE among women and men, defined as death or myocardial infarction. **Results** Obstructive CAD was more prevalent in men (42% vs. 26%; $p < 0.001$), whereas women were more likely to have normal coronary arteries (43% vs. 27%; $p < 0.001$). There were a total of 798 incident MACE events. After adjustment, there was a strong association between increased MACE risk and nonobstructive CAD (HR: 2.16 for women, 2.56 for men; $p < 0.001$ for both), obstructive 1-vessel CAD (HR: 3.69 and 2.66; $p < 0.001$), 2-vessel CAD (HR: 3.92 and 3.55; $p < 0.001$), and 3-vessel/left main CAD (HR: 5.94 and 4.44; $p < 0.001$). Further exploratory analyses of atherosclerotic burden did not identify sex-specific patterns predictive of MACE. **Conclusions** In a large prospective coronary CTA cohort followed long-term, we did not observe an interaction of sex for the association between MACE risk and increased per-vessel extent of obstructive CAD. These findings highlight the persistent prognostic significance of anatomic CAD subsets as detected by coronary CTA for the risk of MACE in both women and men. © 2016 American College of Cardiology Foundation.

Setty P, D'Andrea KP, Stucken EZ, **Babu S, LaRouere MJ** and Pieper DR (2016). "Fully endoscopic resection of cerebellopontine angle meningiomas." *Journal of Neurological Surgery Part a-Central European Neurosurgery* 77(1): 11-18.

[Request Form](#)

Department of Surgery

Objective To describe our operative technique and results from patients who underwent fully endoscopic resection of cerebellopontine angle (CPA) meningiomas. **Design** Prospective observational study. **Setting** A single academic institution that includes both neurosurgery and neurotology. **Participants** Eleven consecutive patients who underwent fully endoscopic resection of a CPA meningioma. **Main Outcome Measures** Hearing preservation, based on the American Association of Otolaryngology-Head and Neck Surgeons score as well as facial nerve preservation base on the House-Brackmann (HB) score. In addition, the extent of resection and complication rates was studied. **Results** All 11 patients underwent successful gross total resection, Simpson grade 2, of their meningioma, seen both intraoperatively and on postoperative

imaging. Overall, 100% of patients maintained normal facial nerve function (HB 1/6). Audiometric testing revealed that 10 of 11 patients maintained either stable or improved hearing postoperatively based on Committee on Hearing and Equilibrium Guidelines for the Evaluation of Hearing Preservation in Acoustic Neuroma grade with the remaining patient retaining serviceable hearing. Tumor size ranged from 0.5 to 2.5 cm (mean: 1.54 cm). Mean operative time was 166 minutes (range: 122-207 minutes); estimated blood loss averaged 54.5 mL. Hospital length of stay ranged from 2 to 6 days (mean: 3.1 days), and a superficial wound infection was the only complication seen in one patient. Conclusion Fully endoscopic techniques can be used in CPA meningioma resection with excellent clinical results as an alternative to the traditional open microscopic approach.

Shah AA, Thomas BJ, Yonekawa Y and **Capone A** (2016). "Radial retinal incisions for complex pediatric traumatic macular holes." Retina 36(1): 211-215.

[Full-Text](#)

Department of Ophthalmology

Shah AR and **Trese MT** (2016). "Enzymatic vitrectomy and pharmacologic vitreodynamics," In Bandello F (ed). Retinal Pharmacotherapeutics. 55. S. Karger AG. pp: 357-364.

[Request Form](#)

Department of Ophthalmology

The field of vitreoretinal surgery has evolved substantially over the last several decades. Scientific advances have improved our understanding of disease pathophysiology, and new surgical adjuncts and techniques have decreased surgical time and improved patient outcomes. Pharmacologic agents have recently been developed for intraocular use in order to enhance vitreous removal and even as a nonsurgical treatment for pathology due to an abnormal vitreoretinal interface. Plasmin can successfully cause vitreous liquefaction and induce a posterior vitreous detachment. Additionally, ocriplasmin has been approved for symptomatic vitreomacular adhesion and others appear to be promising for pharmacologic manipulation of the vitreous. The ability to induce vitreous liquefaction and a complete posterior vitreous detachment (PVD) with a single intravitreal injection has potential implications for the management of multiple vitreoretinopathies. Enzymatic vitrectomy may help to reduce vitreous viscosity, thereby facilitating removal during vitrectomy and reducing surgical time, especially when using smaller-gauge vitrectomy instruments. The induction of a PVD also has the potential to reduce intraoperative complications. As we improve our understanding of the molecular flux in the vitreous cavity, pharmacologic vitreodynamics will likely become more important as it may allow for improved manipulation of intravitreal molecules. © 2016 S. Karger AG, Basel.

Shah AR and **Williams GA** (2016). "Regulatory and economic considerations of retinal drugs," In Bandello F (ed). Retinal Pharmacotherapeutics. 55. S. Karger AG. pp: 376-380.

[Request Form](#)

Department of Ophthalmology

The advent of anti-VEGF therapy for neovascular age-related macular degeneration and macular edema secondary to retinal vein occlusion and diabetes mellitus has prevented blindness in tens of thousands of people. However, the costs of these drugs are without precedent in ophthalmic drug therapeutics. An analysis of the financial implications of retinal drugs and the impact of the Food and Drug Administration on treatment of retinal disease must include not only an evaluation of the direct costs of the drugs and the costs associated with their administration, but also the cost savings which accrue from their clinical benefit. This chapter will discuss the financial and regulatory issues associated with retinal drugs. © 2016 S. Karger AG, Basel.

Simon MR and Konstantinou GN (2016). "Plasma derived IgA from healthy donors binds to peanut extract and inhibits peanut-induced rat Basophil activation." Journal of Allergy and Clinical Immunology 137(2): AB128.

[Full-Text](#)

Department of Internal Medicine

RATIONALE: IgA and IgE are both mucosal immunoglobulins. We hypothesize that food specific IgA is capable of interfering with IgE mediated allergy effector cell activation. Oral administration of food specific

secretory IgA prepared from plasma IgA may ameliorate food allergy symptoms. **METHODS:** IgA from more than 3000 healthy plasma donors was purified from a by-product of intravenous immunoglobulin manufacture. The ability of this pooled IgA to bind to crude peanut antigen was determined using an ELISA. Specificity of binding was confirmed using an ELISA inhibition assay. Monomeric and dimeric IgA were separated by size exclusion chromatography. Binding of IgA monomers and IgA dimers to peanut were each determined independently using an ELISA. Luciferase transfected rat basophil leukemia cells were sensitized with peanut specific IgE using serum from a peanut allergic subject. Inhibition of peanut-induced rat basophil leukemia activation by plasma derived IgA was determined using luciferase-produced light emission. **RESULTS:** Pooled plasma IgA from healthy plasma donors binds to crude peanut extract. The binding is inhibited in a concentration dependent manner by soluble peanut antigen. Both IgA monomers and IgA dimers bind to peanut extract. Peanut extract pre-incubated with plasma derived IgA partially inhibits the ability of peanut to activate IgE sensitized rat basophil leukemia cells in culture. **CONCLUSIONS:** Both IgA monomers and IgA dimers derived from pooled healthy donor plasma bind to crude peanut extract. Plasma derived anti-peanut IgA partially inhibits peanut-induced rat basophil leukemia cell activation demonstrating that it is physiologically active.

Smith CP and **Chancellor MB** (2016). "Botulinum toxin to treat neurogenic bladder." *Seminars in Neurology* 36(1): 5-9. [Request Form](#)

Department of Urology

Alteration in neural control from suprapontine areas to the nerves innervating the bladder can lead to bladder dysfunction and the development of a neurogenic bladder (NGB). Patients with NGB often suffer from urinary incontinence, which can lead to adverse events such as urinary tract infections and decubiti, in addition to creating a large care burden for family members or healthcare providers and significantly impairing patient quality of life. The common failure of anticholinergic medications has spurred the development of second-line treatments, including the use of botulinum toxin. OnabotulinumtoxinA (onaBoNT-A; BOTOX, Allergan, Inc.) was approved by the U.S. Food and Drug Administration (FDA) in 2011 to treat neurogenic detrusor overactivity in patients with urinary incontinence resulting from a NGB. In this review the authors summarize pertinent results from key trials leading to FDA approval of onaBoNT-A as well as more recent long-term data. Copyright © 2016 by Thieme Medical Publishers, Inc.

Smythe MA, Priziola J, Dobesh PP, Wirth D, Cuker A and Wittkowsky AK (2016). "Guidance for the practical management of the heparin anticoagulants in the treatment of venous thromboembolism." *Journal of Thrombosis and Thrombolysis* 41(1): 165-186.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Venous thromboembolism (VTE) is a serious and often fatal medical condition with an increasing incidence. Despite the changing landscape of VTE treatment with the introduction of the new direct oral anticoagulants many uncertainties remain regarding the optimal use of traditional parenteral agents. This manuscript, initiated by the Anticoagulation Forum, provides clinical guidance based on existing guidelines and consensus expert opinion where guidelines are lacking. This specific chapter addresses the practical management of heparins including low molecular weight heparins and fondaparinux. For each anticoagulant a list of the most common practice related questions were created. Each question was addressed using a brief focused literature review followed by a multidisciplinary consensus guidance recommendation. Issues addressed included initial anticoagulant dosing recommendations, recommended baseline laboratory monitoring, managing dose adjustments, evidence to support a relationship between laboratory tests and meaningful clinical outcomes, special patient populations including extremes of weight and renal impairment, duration of necessary parenteral therapy during the transition to oral therapy, candidates for outpatient treatment where appropriate and management of over-anticoagulation and adverse effects including bleeding and heparin induced thrombocytopenia. This article concludes with a concise table of clinical management questions and guidance recommendations to provide a quick reference for the practical management of heparin, low molecular weight heparin and fondaparinux. © 2016, The Author(s).

Thanos A, Todorich B and **Trese MT** (2016). "A novel approach to understanding pathogenesis and treatment of capillary dropout in retinal vascular diseases." Ophthalmic Surgery, Lasers and Imaging Retina 47(3): 288-292.

[Request Form](#)

Department of Ophthalmology

Thanos A, Yonekawa Y, Yomogida K, **Bloom DA, Trese MT** and **Drenser KA** (2016). "Retinal findings in abusive head trauma: Knowing what to look for could help to identify child abuse." Retina Today 2016-March: 57-59.

[Request Form](#)

Department of Diagnostic Radiology and Molecular Imaging

Department of Ophthalmology

Thibodeau BJ, Fulton M, Fortier LE, Geddes TJ, Pruetz BL, Ahmed S, Banes-Berceli A, **Zhang PL, Wilson GD** and **Hafron J** (2016). "Characterization of clear cell renal cell carcinoma by gene expression profiling." Urologic Oncology: Seminars and Original Investigations 34(4): 168.e161-168.e169.

[Full-Text](#)

Department of Pathology

Department of Radiation Oncology

Department of Urology

Objectives: Use global gene expression to characterize differences between high-grade and low-grade clear cell renal cell carcinoma (ccRCC) compared with normal and benign renal tissue. Methods: Tissue samples were collected from patients undergoing surgical resection for ccRCC. Affymetrix gene expression arrays were used to examine global gene expression patterns in high- (n = 16) and low-grade ccRCC (n = 13) as well as in samples from normal kidney (n = 14) and benign kidney disease (n = 6). Differential gene expression was determined by analysis of variance with a false discovery rate of 1% and a 2-fold cutoff. Results: Comparing high-grade ccRCC with each of normal and benign kidney resulted in 1,833 and 2,208 differentially expressed genes, respectively. Of these, 930 were differentially expressed in both comparisons. In order to identify genes most related to progression of ccRCC, these differentially expressed genes were filtered to identify genes that showed a pattern of expression with a magnitude of change greater in high-grade ccRCC in the comparison to low-grade ccRCC. This resulted in the identification of genes such as TMEM45A, ceruloplasmin, and E-cadherin that were involved in cell processes of cell differentiation and response to hypoxia. Additionally changes in HIF1 α and TNF signaling are highly represented by changes between high- and low-grade ccRCC. Conclusions: Gene expression differences between high-grade and low-grade ccRCC may prove to be valuable biomarkers for advanced ccRCC. In addition, altered signaling between grades of ccRCC may provide important insight into the biology driving the progression of ccRCC and potential targets for therapy. © 2016 Elsevier Inc.

Thomas BJ, Yonekawa Y and **Trese MT** (2016). "Complete resolution of large retinal fold after transection of retrolental membrane during lens-sparing vitrectomy for retinopathy of prematurity: A 15-year follow-up." Retinal Cases and Brief Reports 10(1): 93-95.

[Request Form](#)

Department of Ophthalmology

Purpose: To describe the long-term anatomical and visual outcomes of a patient with retinopathy of prematurity characterized by a prominent retinal fold adherent to the posterior lens capsule, treated by lens-sparing vitrectomy with surgical transection of the retrolental membrane. Case Summary: A premature infant was born at a gestational age of 25 weeks and birthweight of 636 g. She developed threshold retinopathy of prematurity bilaterally and was subsequently treated with laser ablative therapy. The left eye responded favorably, with regression of neovascularization; however, the right eye progressed to Stage 4A with a prominent retinal fold adherent to the posterior lens capsule. The patient underwent lens-sparing vitrectomy with dissection of the retrolental membrane at postmenstrual age of 44 weeks. At 15-year follow-up, the patient has maintained a best-corrected visual acuity of 20/60 and, of note, demonstrated complete resolution of the previous retinal fold. Conclusion: Surgical treatment for retinopathy of prematurity was considerably advanced by the introduction of lens-sparing vitrectomy techniques; however, cases developing retrolental membranes often persisted with poor visual outcomes, and lensectomy is

conventionally performed. However, in select cases of Stage 4A retinopathy of prematurity, careful transection of retrolental membranes during lens-sparing vitrectomy using the appropriate technique may provide very good anatomical and visual outcomes. Copyright © by Ophthalmic Communications society, Inc.

Turkoglu O, Zeb A, Graham S, Szyperski T, Szender JB, Odunsi K and **Bahado-Singh R** (2016). "Metabolomics of biomarker discovery in ovarian cancer: A systematic review of the current literature." Metabolomics 12(4): 1-16.

[Full-Text](#)

Department of Obstetrics and Gynecology

Introduction Metabolomics is the emerging member of "omics" sciences advancing the understanding, diagnosis and treatment of many cancers, including ovarian cancer (OC). **Objectives** To systematically identify the metabolomic abnormalities in OC detection, and the dominant metabolic pathways associated with the observed alterations. **Methods** An electronic literature search was performed, up to and including January 15th 2016, for studies evaluating the metabolomic profile of patients with OC compared to controls. QUADOMICS tool was used to assess the quality of the twenty-three studies included in this systematic review. **Results** Biological samples utilized for metabolomic analysis include: serum/plasma (n = 13), urine (n = 4), cyst fluid (n = 3), tissue (n = 2) and ascitic fluid (n = 1). Metabolites related to cellular respiration, carbohydrate, lipid, protein and nucleotide metabolism were significantly altered in OC. Increased levels of tricarboxylic acid cycle intermediates and altered metabolites of the glycolytic pathway pointed to perturbations in cellular respiration. Alterations in lipid metabolism included enhanced fatty acid oxidation, abnormal levels of glycerolipids, sphingolipids and free fatty acids with common elevations of palmitate, oleate, and myristate. Increased levels of glutamine, glycine, cysteine and threonine were commonly reported while enhanced degradations of tryptophan, histidine and phenylalanine were found. N-acetylaspartate, a brain amino acid, was found elevated in primary and metastatic OC tissue and ovarian cyst fluid. Further, elevated levels of ketone bodies including 3-hydroxybutyrate were commonly reported. Increased levels of nucleotide metabolites and tocopherols were consistent through out the studies. **Conclusion** Metabolomics presents significant new opportunities for diagnostic biomarker development, elucidating previously unknown mechanisms of OC pathogenesis.

Vilchez G, Dai J, **Bahado-Singh RO**, Maulik D and Sokol RJ (2016). "Analysis of planned trial of labor vs. planned repeat cesarean and the effect of expectant management at each gestational age at term." American Journal of Obstetrics and Gynecology 214(1): S211-S212.

[Full-Text](#)

Department of Obstetrics and Gynecology

Vilchez G, Dai J, Gill N, Lagos M, **Bahado-Singh R** and Sokol RJ (2016). "Racial disparities in the optimal for induction of labor in low-risk term pregnancies: A national population-based study." Journal of Maternal-Fetal and Neonatal Medicine 29(8): 1279-1282.

[Request Form](#)

Department of Obstetrics and Gynecology

Objective: The recommendation for elective induction of labor (IOL) is to await ≥ 39 weeks. Studies show earlier maturity of Blacks compared to Whites. The objective was to examine the effect of the Black race on the risk of intrapartum and neonatal complications after IOL. **Methods:** Black women with non-indicated IOL at 37-42 weeks were selected from the CDC-Birth Cohorts 2007-2010. Congenital anomalies, hypertension/diabetes, low-birth weight, breech presentation, previous cesarean and premature rupture of membranes were excluded. Intrapartum/neonatal complications were analyzed. Logistic regression was used to calculate adjusted odds ratios, using 39 weeks as reference. **Results:** 311 264 black were compared with 2 451 774 deliveries of other races. For Blacks, the risks of cesarean delivery and intrapartum complications were lower at 38 weeks. Chance of vaginal delivery was greater at 38 weeks. Risks of neonatal complications was not increased at 38 compared to 39 weeks. **Conclusions:** Intrapartum complications were lower at 38 than at 39 weeks in Blacks with no increased risk of neonatal complications. Meconium staining and fetal distress were higher as early as at 40 weeks, perhaps due to accelerated maturation. While a 39-week goal is simple and benefits many patients, a more "personalized medicine" approach may benefit even more

mothers and babies. © 2015 Informa UK Ltd.

Vilchez G, Dai J, Hoyos LR, Babbar S, **Bahado-Singh RO**, Maulik D and Sokol RJ (2016). "Optimal delivery mode in singleton pregnancies conceived after infertility treatment: Is the "precious baby" effect justified?" [American Journal of Obstetrics and Gynecology](#) 214(1): S445-S446.

[Full-Text](#)

Department of Obstetrics and Gynecology

Visco AG, Brubaker L, Jelovsek JE, Wilson TS, Norton P, Zyczynski HM, Spino C, **Sirls L**, Nguyen JN, Rahn DD, Meikle SF and Nolen TL (2016). "Adherence to oral therapy for urgency urinary incontinence: Results from the anticholinergic versus botox comparison (ABC) trial." [Female Pelvic Medicine and Reconstructive Surgery](#) 22(1): 24-28.

[Full-Text](#)

Department of Urology

Objectives Medication adherence with urgency urinary incontinence (UUI) treatment is challenging and the best assessment methodology is uncertain. We sought to describe adherence with anticholinergic (AC) versus placebo (P) by comparing pill counts and MEMSCAP event data and to identify factors associated with adherence. Methods The randomized controlled AC versus Botox Comparison trial of women with moderate to severe idiopathic UUI included 126 participants initiating AC plus P bladder injection and 121 receiving P pills plus Botox injection. Adherence data on 243 participants (124 AC and 119 P) were calculated by pill count and MEMSCAP data for each 2-month interval during the 6-month study that allowed for dose escalation/drug change. Overall composite adherence estimates were calculated using the average of both methods and weighted by the duration of each 2-month interval. Results Treatment groups had no significant differences in dosing duration (P = 0.76) or mean adherence (AC, 83.3% [16.8] vs P, 84.8% [13.8]). Only 53% of women met the dichotomous outcome of more than 80% adherence during all intervals. Correlation between adherence by pill counts versus MEMSCAP decreased over time with pill counts demonstrating higher adherence than MEMSCAP (r = 0.53, 0.50, and 0.36 for each 2-month interval). Lower adherence was associated with higher baseline incontinence severity and better UUI quality of life for the AC group and with current smoking status in both groups. Conclusions Adherence using pill counts and MEMSCAP was reasonably correlated and similar in both the AC and P groups. In the AC group, higher baseline incontinence severity and better UUI Quality of Life were associated with decreased adherence. Smokers were less adherent. © 2015 Wolters Kluwer Health, Inc.

Vu CC, Lanni TB and **Robertson JM** (2016). "Variations in medicare reimbursement in radiation oncology: An analysis of the Medicare Provider Utilization and Payment Data Set." [International Journal of Radiation Oncology Biology Physics](#) 94(5): 1000-1005.

[Full-Text](#)

Department of Radiation Oncology

Purpose The purposes of this study were to summarize recently published data on Medicare reimbursement to individual radiation oncologists and to identify the causes of variation in Medicare reimbursement in radiation oncology. Methods and Materials The Medicare Provider Utilization and Payment Data: Physician and Other Supplier Public Use File (POSPUF), which details nearly all services provided by radiation oncologists in 2012, was used for this study. The data were filtered and analyzed by physician and by billing code. Statistical analysis was performed to identify differences in reimbursements based on sex, rurality, billing of technical services, or location in a certificate of need (CON) state. Results There were 4135 radiation oncologists who received a total of \$1,499,625,803 in payments from Medicare in 2012. Seventy-five percent of radiation oncologists were male. The median reimbursement was \$146,453. The code with the highest total reimbursement was 77418 (radiation treatment delivery intensity modulated radiation therapy [IMRT]). The most commonly billed evaluation and management (E/M) code for new visits was 99205 (49%). The most commonly billed E/M code for established visits was 99213 (54%). Forty percent of providers billed none of their new office visits using 99205 (the highest E/M billing code), whereas 34% of providers billed all of their new office visits using 99205. For the 1510 radiation oncologists (37%) who billed technical services, median Medicare reimbursement was \$606,008, compared with \$93,921 for all other radiation oncologists (P<.001). On multivariate analysis, technical services billing (P<.001), male sex (P<.001), and rural location

($P=.007$) were predictive of higher Medicare reimbursement. Conclusions The billing of technical services, with their high capital and labor overhead requirements, limits any comparison in reimbursement between individual radiation oncologists or between radiation oncologists and other specialists. Male sex and rural practice location are independent predictors of higher total Medicare reimbursements. © 2016 Elsevier Inc.

Wasserman JA, Aghababaei N and Nannini D (2016). "Culture, personality, and attitudes toward euthanasia: A comparative study of university students in Iran and the United States." *Omega (United States)* 72(3): 247-270.

[Full-Text](#)

Department of Biomedical Sciences (OU)

This article reports cultural differences in the relationship between personality characteristics and euthanasia attitudes using samples from Iran and the United States. Survey data from university students were analyzed using multivariate regression. Results indicate that while attitudes toward euthanasia are significantly more positive among the U.S. sample, there is significantly greater variation among the Iranian sample. Honesty-Humility and Openness to Experience are predictive factors in both samples, where Agreeableness is only significant among the Iranian group. Additionally, Chow tests of structural features of the multivariate models show significant differences between the two samples. We conclude by discussing implications of these results for understanding cultural similarities and differences in attitudes toward euthanasia, including the practical implications of this work for patient care in an increasingly globalized world. ©2015 Reprints and permissions.

Wendling AL, Wudyka AE, Phillips JP, Levine DL, **Mulhem E**, Neale AV and Morley CP (2016). "RU4PC? Texting to quantify feedback about primary care and its relationship with student career interest." *Family Medicine* 48(1): 21-29.

[Request Form](#)

Department of Family Medicine

Wheatley M, Baugh C, Osborne A, **Clark C**, Shayne P and Ross M (2016). "A model longitudinal observation medicine curriculum for an emergency medicine residency." *Academic Emergency Medicine* 23(4): 482-492.

[Full-Text](#)

Department of Emergency Medicine

The role of observation services for emergency department patients has increased in recent years. Driven by changing health care practices and evolving payer policies, many hospitals in the United States currently have or are developing an observation unit (OU) and emergency physicians are most often expected to manage patients in this setting. Yet, few residency programs dedicate a portion of their clinical curriculum to observation medicine. This knowledge set should be integrated into the core training curriculum of emergency physicians. Presented here is a model observation medicine longitudinal training curriculum, which can be integrated into an emergency medicine (EM) residency. It was developed by a consensus of content experts representing the observation medicine interest group and observation medicine section, respectively, from EM's two major specialty societies: the Society for Academic Emergency Medicine (SAEM) and the American College of Emergency Physicians (ACEP). The curriculum consists of didactic, clinical, and self-directed elements. It is longitudinal, with learning objectives for each year of training, focusing initially on the basic principles of observation medicine and appropriate observation patient selection; moving to the management of various observation appropriate conditions; and then incorporating further concepts of OU management, billing, and administration. This curriculum is flexible and designed to be used in both academic and community EM training programs within the United States. Additionally, scholarly opportunities, such as elective rotations and fellowship training, are explored.

Wilkoff BL, Fauchier L, Stiles MK, Morillo CA, Al-Khatib SM, Almendral J, Aguinaga L, Berger RD, Cuesta A, Daubert JP, Dubner S, Ellenbogen KA, Estes NAM, III, Fenelon G, Garcia FC, Gasparini M, **Haines DE**, Healey JS, Hurtwitz JL, Keegan R, Kolb C, Kuck KH, Marinskis G, Martinelli M, McGuire M, Molina LG, Okumura K, Proclemer A, Russo AM, Singh JP, Swerdlow CD, Teo WS, Uribe W, Viskin S, Wang CC and Zhang S (2016). "2015 HRS/EHRA/APHS/SOLAECE expert consensus statement on optimal implantable cardioverter-defibrillator programming and testing." Journal of Arrhythmia 32(1): 1-28.

[Full-Text](#)

Department of Internal Medicine

Wilkoff BL, Fauchier L, Stiles MK, Morillo CA, Al-Khatib SM, Almendral J, Aguinaga L, Berger RD, Cuesta A, Daubert JP, Dubner S, Ellenbogen KA, Estes NAM, Fenelon G, Garcia FC, Gasparini M, **Haines DE**, Healey JS, Hurtwitz JL, Keegan R, Kolb C, Kuck KH, Marinskis G, Martinelli M, McGuire M, Molina LG, Okumura K, Proclemer A, Russo AM, Singh JP, Swerdlow CD, Teo WS, Uribe W, Viskin S, Wang CC, Zhang S, Boriani G, Brignole M, Cheng A, Crawford TC, Di Biase L, Donahue K, Epstein AE, Field ME, Gorenek B, Huang JL, Indik JH, Israel CW, Jessup ML, Leclercq C, Macfadyen RJ, Madias C, Marquez MF, Olshansky B, Patton KK, Refaat MM, Tracy CM, Upadhyay GA, Vanegas D and Wang PJ (2016). "2015 HRS/EHRA/APHS/SOLAECE expert consensus statement on optimal implantable cardioverter-defibrillator programming and testing." Europace: European Pacing, Arrhythmias, and Cardiac Electrophysiology 18(2): 159-183.

[Full-Text](#)

Department of Internal Medicine

Wilkoff BL, Fauchier L, Stiles MK, Morillo CA, Al-Khatib SM, Almendral J, Aguinaga L, Berger RD, Cuesta A, Daubert JP, Dubner S, Ellenbogen KA, Mark Estes NA, III, Fenelon G, Garcia FC, Gasparini M, **Haines DE**, Healey JS, Hurtwitz JL, Keegan R, Kolb C, Kuck KH, Marinskis G, Martinelli M, McGuire M, Molina LG, Okumura K, Proclemer A, Russo AM, Singh JP, Swerdlow CD, Teo WS, Uribe W, Viskin S, Wang CC, Zhang S and Senerth E (2016). "2015 HRS/EHRA/APHS/SOLAECE expert consensus statement on optimal implantable cardioverter-defibrillator programming and testing." Heart Rhythm 13(2): e50-e86.

[Full-Text](#)

Department of Internal Medicine

Willenbring BD, Lerner EB, Brasel K, Cushman JT, Guse CE, Shah MN and **Swor R** (2016). "Evaluation of a consensus-based criterion standard definition of trauma center need for use in field triage research." Prehospital Emergency Care 20(1): 1-5.

[Request Form](#)

Department of Emergency Medicine

Research on field triage of injured patients is limited by the lack of a widely used criterion standard for defining trauma center need. Injury Severity Score (ISS) >15 has been a commonly used outcome measure in research for determining trauma center need that has never been validated. A multidisciplinary team recently published a consensus-based criterion standard definition of trauma center need, but this measure has not yet been validated. The objective was to determine if the consensus-based criterion standard can be obtained by medical record review and compare patients identified as needing a trauma center by the consensus-based criterion standard vs. ISS >15. A subanalysis of data collected during a 2-year prospective cohort study of 4,528 adult trauma patients transported by EMS to a single trauma center was conducted. These data included ICD-9-CM codes, treatment times, and other patient care data. Presence of the consensus-based criterion standard was determined for each patient. ISS was calculated based on ICD-9-CM codes assigned for billing. The consensus-based criterion standard could be applied to 4,471 (98.7%) cases. ISS could be determined for 4,506 (99.5%) cases. Based on an ISS >15, 8.9% of cases were identified as needing a trauma center. Of those, only 48.2% met the consensus-based criterion standard. Almost all patients that did not meet the consensus-based criterion standard, but had an ISS >15 were diagnosed with chest (rib fractures (100/205 cases)/pneumothorax (57/205 cases), closed head (without surgical intervention 88/205 cases), vertebral (without spinal cord injury 45/205 cases), and/or extremity injuries (39/205 cases). There were 4,053 cases with an ISS <15. 5.0% of those with an ISS <15 met the consensus-based criterion standard with the majority requiring surgery (139/203 cases) or a blood transfusion (60/203 cases). The kappa coefficient of agreement for ISS and the consensus-based criterion standard was 0.43. We determined

that the consensus-based criterion standard could be identified through a medical record review. Use of the consensus-based criterion standard for field triage research will more accurately identify injured patients who need the resources of a trauma center when compared to ISS. © 2016 National Association of EMS Physicians.

Wilson GD, Thibodeau BJ, Fortier LE, Pruetz BL, Galoforo S, **Marples B**, Baschnagel AM, **Akervall J** and **Huang J** (2016). "Cancer stem cell signaling during repopulation in head and neck cancer." [Stem Cells International](#) 2016.

[Full-Text](#)

Department of Radiation Oncology

Department of Biomedical Sciences (BHS)

Department of Pathology

The aim of the study was to investigate cancer stem signaling during the repopulation response of a head and neck squamous cell cancer (HNSCC) xenograft after radiation treatment. Xenografts were generated from low passage HNSCC cells and were treated with either sham radiation or 15 Gy in one fraction. At different time points, days 0, 3, and 10 for controls and days 4, 7, 12, and 21, after irradiation, 3 tumors per group were harvested for global gene expression, pathway analysis, and immunohistochemical evaluation. 316 genes were identified that were associated with a series of stem cell-related genes and were differentially expressed ($p \leq 0.01$ and 1.5-fold) at a minimum of one time point in UT-SCC-14 xenografts after radiation. The largest network of genes that showed significant changes after irradiation was associated with CD44, NOTCH1, and MET. c-MET and ALDH1A3 staining correlated with the changes in gene expression. A clear pattern emerged that was consistent with the growth inhibition data in that genes associated with stem cell pathways were most active at day 7 and day 12 after irradiation. The MET/CD44 axis seemed to be an important component of the repopulation response. © 2016 George D. Wilson et al.

Wolfe JD, Shah AR, Yonekawa Y, Faran AA, Franklin MS, Abbey AM and **Capone A** (2016). "Receiver operating characteristic curve to predict anti-VEGF resistance in retinal vein occlusions and efficacy of Ozurdex." [European Journal of Ophthalmology](#) 26(2): 168-173.

[Request Form](#)

Department of Ophthalmology

Purpose: Current treatment paradigms for macular edema associated with retinal vein occlusions (RVO) often involve initial treatment with anti-vascular endothelial growth factor (VEGF) agents, then switching to intravitreal dexamethasone implant (IDI; Ozurdex, Allergan, Parsippany, NJ) for poor responders. However, many patients undergo multiple injections prior to being declared a nonresponder. We devised a method for prediction of poor anti-VEGF response after one injection, and show that these patients subsequently respond well to IDI. Methods: This study is a retrospective consecutive interventional case series of patients with RVO receiving anti-VEGF agents that were switched to IDI. Patients were categorized as nonresponders to anti-VEGF agents (edema did not improve) or responders (edema improved, but switched to IDI for longer treatment duration). Receiver operating characteristics (ROC) curve analysis was used to determine cutoffs of reduction in central retinal thickness (CRT) to predict poor response to anti-VEGF treatment. Results: Twenty-three patients met inclusion criteria. There were 14 nonresponders and 9 responders. The ROC curve analysis found that the maximal sensitivity and specificity in correctly identifying responders to anti-VEGF therapy was those with $>25\%$ reduction in CRT 1 month after 1 anti-VEGF treatment (sensitivity 0.89, specificity 0.79, area under the curve 0.93). After IDI placement, anti-VEGF nonresponders showed significant improvement in visual acuity (VA) ($p = 0.02$) and CRT ($p = 0.01$). Conclusions: In patients with macular edema secondary to RVOs, a reduction in CRT by $\leq 25\%$, 1 month after 1 anti-VEGF injection, is predictive of poor response to anti-VEGF treatment. These patients may benefit from earlier conversion to IDI treatment, which in our study, resulted in improved VA and CRT.

Wongtriratanachai P, Martin AM and **Chaiyasate K** (2016). "DIEP flap salvage by cannula venesection of the superficial inferior epigastric vein." [European Journal of Plastic Surgery](#) 39(2): 151-154.

[Full-Text](#)

Department of Surgery

The deep inferior epigastric perforator (DIEP) flap is a technique of autologous breast reconstruction that is

gaining popularity. The main advantage of the DIEP flap over the traditional transverse rectus abdominis myocutaneous (TRAM) flap is that there is a lower incidence of abdominal wall donor-site morbidity with the DIEP flap. However, venous congestion is the most dreaded complication of DIEP flap surgery which requires prompt intervention. In this case report, we present a simple but effective procedure to salvage the congested DIEP flap. A 55-year-old female underwent left breast reconstruction with DIEP flap and developed venous congestion during surgery. Cannula venesection of the superficial inferior epigastric vein (SIEV) was performed intraoperatively followed by intermittent aspiration of blood for 3 days. A satisfactory aesthetic result was achieved with no evidence of fat necrosis. This procedure eliminated the need for performing an additional microvascular anastomosis, required less operative time, and allowed augmentation of the venous drainage of the congested flap. Level of Evidence: Level V, therapeutic study.

Xi MA, Tong HC, **Fahim DK** and **Perez-Cruet M** (2016). "Using provocative discography and computed tomography to select patients with refractory discogenic low back pain for lumbar fusion surgery." *Cureus* 8(2): e514.

[Full-Text](#)

OUWB Medical Student Author

Department of Neurosurgery

Background Context Controversy remains over the use of provocative discography in conjunction with computed tomography (CT) to locate symptomatic intervertebral discs in patients with chronic, low back pain (LBP). The current study explores the relationship between discogenic pain and disc morphology using discography and CT, respectively, and investigates the efficacy of this combined method in identifying surgical candidates for lumbar fusion by evaluating outcomes. Methods 43 consecutive patients between 2006 and 2013 who presented with refractory low back pain and underwent discography and CT were enrolled in the study. For this study, "refractory LBP" was defined as pain symptoms that persisted or worsened after 6 months of non-operative treatments. Concordant pain was defined as discography-provoked LBP of similar character and location with an intensity of $\geq 8/10$. Fusion candidates demonstrated positive-level discography and concordant annular tears on CT at no more than two contiguous levels, and at least one negative control disc with intact annulus. Surgical outcomes were statistically analyzed using Visual Analog Scale (VAS), Oswestry Disability Index (ODI), and Short Form-36 (SF-36) for back-related pain and disability preoperatively, and 2 weeks, 3, 6, 12, and 24 months postoperatively. Results Annular tears were found in 87 discs. Concordant pain was reported by 9 (20.9%) patients at L3-L4, 21 (50.0%) at L4-L5, and 34 (82.9%) at L5-S1; pain occurred significantly more often in discs with annular tears than those without ($p < 0.001$). Painless discs were independent of annulus status ($p = 0.90$). 18 (42%) of the original 43 patients underwent lumbar fusion at L3-L4 ($n = 1$ (6%)), L4-L5 ($n = 6$ (33%)), L5-S1 ($n = 5$ (28%)), and two-level L4-S1 ($n = 6$ (33%)) via a minimally invasive transforaminal lumbar interbody fusion (MILIF) approach with the aim to replace the nucleus pulposus with bone graft material. Median follow-up time was 18 months (range: 12–78 months). VAS, ODI, and SF-36 scores demonstrated significant improvements at 10 out of 12 postoperative time points compared with preoperative baseline. Conclusions Lumbar discography with post-discography CT can be an effective method to evaluate patients with discogenic back pain refractory to non-operative treatments. Those patients with one- or two-level high concordant pain scores with associated annular tears and negative control disc represent good surgical candidates for lumbar interbody spinal fusion.

Yonekawa Y, Hypes SM, Abbey AM, **Williams GA** and **Wolfe JD** (2016). "Exacerbation of macular edema associated with hyperbaric oxygen therapy." *Clinical and Experimental Ophthalmology*. ePub Ahead of Print.

[Full-Text](#)

Department of Ophthalmology

Yoshimura N, Tyagi P and **Chancellor MB** (2016). "Pathophysiology and animal modeling of underactive bladder," In **Chancellor MB** and **Diokno AC** (ed). *The Underactive Bladder*. Springer. pp: 51-68.

[Full-Text](#)

Department of Urology

Zacharias SK, **Safian RD**, Madder RD, Hanson ID, Pica MC, Smith JL, **Goldstein JA** and **Abbas AE** (2016). "Invasive evaluation of plaque morphology of symptomatic superficial femoral artery stenoses using combined near-infrared spectroscopy and intravascular ultrasound." Vascular Medicine. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

The purpose of this study is to characterize the plaque morphology of severe stenoses in the superficial femoral artery (SFA) employing combined near-infrared spectroscopy and intravascular ultrasound (NIRS-IVUS). Atherosclerosis is the most common cause of symptomatic peripheral arterial disease. Plaque composition of SFA stenoses has been characterized as primarily fibrous or fibrocalcific by non-invasive and autopsy studies. NIRS has been validated to detect lipid-core plaque (LCP) in the coronary circulation. We imaged severe SFA stenoses with NIRS-IVUS prior to revascularization in 31 patients (46 stenoses) with Rutherford claudication class 3. Angiographic parameters included lesion location and stenosis severity. IVUS parameters included plaque burden and presence of calcium. NIRS images were analyzed for LCP and maximum lipid-core burden index in a 4-mm length of artery (maxLCBI4mm). By angiography, 38 (82.6%) lesions were calcified and 9 (19.6%) were chronic total occlusions. Baseline stenosis severity and lesion length were 86.0 +/- 11.0% and 36.5 +/- 46.5 mm, respectively. NIRS-IVUS identified calcium in 45 (97.8%) lesions and LCP in 17 (37.0%) lesions. MaxLCBI4mm was 433 +/- 244. All lesions with LCP also contained calcium; there were no non-calcified lesions with LCP. In conclusion, this is the first study of combined NIRS-IVUS in patients with PAD. NIRS-IVUS demonstrates that nearly all patients with symptomatic severe SFA disease have fibrocalcific plaque, and one-third of such lesions contain LCP. These findings contrast with those in patients with acute coronary syndromes, and may have implications regarding the pathophysiology of atherosclerosis in different vascular beds.

Zimmern PE, Gormley EA, Stoddard AM, Lukacz ES, **Sirls L**, Brubaker L, Norton P, Oliphant SS and Wilson T (2016). "Management of recurrent stress urinary incontinence after burch and sling procedures." Neurourology and Urodynamics 35(3): 344-348.

[Full-Text](#)

Department of Urology

AimsTo examine treatment options selected for recurrent stress urinary incontinence (rSUI) in follow-up after Burch, autologous fascial and synthetic midurethral sling (MUS) procedures. **Methods**We performed a secondary analysis of the SISTER and ToMUS trials of participants who underwent primary stress urinary incontinence (SUI) treatment (without prior SUI surgery or concomitant procedures). Using Kaplan-Meier analysis, retreatment-free survival rates by initial surgical procedure were compared. Mean MESA (Medical Epidemiologic and Social Aspects of Aging) stress index was also compared between those retreated for rSUI compared to those not retreated. **Results**Half of the women in the SISTER trial met inclusion criteria for this analysis (329/655, 174 Burch and 155 fascial sling), as did 444/597 (74%) of subjects in ToMUS (221 transobturator midurethral sling (TMUS), and 223 retropubic midurethral sling (RMUS)). Types of surgical retreatment included autologous fascial sling (19), synthetic sling (1), and bulking agent (18). Five-year retreatment free survival rates (and standard errors) were 87% (3%), 96% (2%), 97% (1%), and 99% (0.7%) for Burch, autologous fascial sling, TMUS, and RMUS groups respectively ($P < 0.0001$). For all index surgery groups, the mean MESA stress index at last visit prior to retreatment for those retreated ($n=23$) was significantly higher than mean MESA stress index at last visit for those not retreated ($n=645$) ($P < 0.0001$). **Conclusion**In these cohorts, 6% of women after standard anti-incontinence procedures were retreated within 5 years, mostly with injection therapy or autologous fascial sling. Not all women with rSUI chose surgical retreatment. *Neurourol. Urodynam.* 35:344-348, 2016. (c) 2015 Wiley Periodicals, Inc.

Zwaans BMM, **Chancellor MB** and **Lamb LE** (2016). "Modeling and treatment of radiation cystitis." Urology 88: 14-21.

[Full-Text](#)

Department of Urology

Radiation cystitis (RC) is a debilitating condition that, if not managed at an early stage, can have a major impact on the quality of life of a patient and can lead to severe hemorrhaging and even death. Current treatments are focused on arresting bladder hemorrhaging, but none are able to relieve other urological symptoms associated with cystitis. There is a strong need for in-depth studies using preclinical RC models to

better understand the underlying disease progression and to test novel therapies. Here we review the most commonly used therapies for RC, novel treatment strategies, and the preclinical models used to date. © 2016 Elsevier Inc.