# **24th Annual** Permian Basin Research Day



TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

# **24th Annual** Permian Basin Research Day



Gary Ventolini, M.D., is the Regional Dean and Professor of Obstetrics and Gynecology at the Texas Tech University Health Sciences Center at the Permian Basin. He comes to the TTUHSC School of Medicine from the Wright State University Boonshoft School of Medicine where he served as the Chair of Obstetrics and Gynecology for six years. Ventolini's education and experience are both vast and international. He received a Doctorate of Medicine & Surgery from the University of Padova in Padova, Italy. His training took him to Columbia where he joined the faculty of Libre University in Cali, Columbia. He came to the United States for post-graduate training in Family Medicine in Spartanburg, South Carolina, before joining the faculty of the University of Cincinnati school of Medicine. Following an obstetrics and gynecology residency at Good Samaritan Hospital in Cincinnati, he joined the faculty at Wright State. He is board certified in both Family Medicine and Obstetrics and Gynecology. Ventolini has an abundance of scholarly work which includes authoring over 200 publications of peer reviewed journals, book chapters, and abstracts. Ventolini has also authored the book "Art within the Keys of the Renaissance". Recently Dr. Ventolini was nominated and received the 2014 Community Statesman Award in the Field of Health and Science from the Heritage of Odessa Foundation.

# **Research Day** Organizing Committee



# Advisory Research Committee TTUHSC at the Permian Basin School of Medicine

Natalia Schlabritz-Lutsevich M.D., Ph.D. Craig Spellman, Ph.D., D.O. Lavi Oud, M.D. Jesus Vera-Aguilera M.D. Babatunde Jinadu, M.D., MPH Saju Joseph, M.D. Bobby Jain, M.D. Bobby Jain, M.D. Ramachandra Chemitiganti, M.D. Ikemefuna Okwuwa, M.D. Mr. Tim Smith Mr. Erik Wilkinson Courtney Woody, RN Ms. Emily Cendrowsky

# SCHEDULE

8:00 - 8:15 Coffee & Pastries (Posters and Pre-Recorded Presentation Viewing – Upstairs Rotunda)

8:15 - 8:30

Welcome - Gary Ventolini, M.D. | Natalia Schlabritz-Lutsevich, M.D., Ph.D.

# ORAL PRESENTATIONS

# 8:30 - 8:45

"Determination of Normal Post Void Residual (PVR) Volume at First Micturition Following Vaginal Delivery" Jonathan Lugo, M.D., PGY II | Holly Bracy D.O. Department of Obstetrics & Gynecology

# 8:45 - 9:00

"Radiological Presentation of Coccidiodomycosis in West Texas" Cynthia Villanueva Ramos, M.D., PGY II | Jesus Vera Aguilera, M.D., PGY II | Diego Beltran Melgarejo, M.D., PGY II | Yousef Hindi, M.D., PGY II Department of Family & Community Medicine | Department of Internal Medicine

# 9:00 - 9:15

"Combined Parasite Derived Peptide GK1 and Programmed Death Antibody (Anti-PD-L1) Therapy Increased Survival in a Melanoma Mouse Model" Jesus Vera Aguilera, M.D., PGY II | Diego Beltran Melgarejo, M.D., PGY II Cynthia Villanueva Ramose, M.D., PGY II Department of Internal Medicine | Department of Family & Community Medicine

# 9:15 - 9:30

"Are Routine Insertion of Umbilical Arterial Catheters Necessary in Very Low Birth Weight (VLBW) Neonates?" Cynthia Villanueva Ramos, M.D., PGY II | Jesus Vera Aguilera, M.D., PGY II | Diego Beltran Christopher Sawyer, MS III Department of Pediatrics

# 9:30 - 9:45

"Big Decision Curriculum for Sex Education in the Ector County Independent School District" Lisa Platner, MSN, RNC-OB | Elisa Brown, M.D. | Garciela Flores, DNP Department of Obstetrics & Gynecology

# 9:45 - 10:00

"Impact of a Dementia Care Workshop Series on Caregivers and Patients Affected with The Illness" Maricris Lapinid, M.D., PGY IV | Liliana Andrade, MD | Kiranmayi Adimoolam, M.D., PGY IV Lettie England, LBSW Department of Family & Community Medicine/Geriatrics 10:00 - 10:15

"Use of Eye Tracking Device: A New and Novel Technology to Assess Clinical Depression" Feba Thomas, MS III | Amna Ahmed, MS III Department of Psychiatry

10:15 - 10:30 *"Wolf in Sheep's Clothing"* Osama Mukarram, M.D. Department of Internal Medicine

# BREAK 10:30 - 10:45 (Posters and Pre-Recorded Presentation Viewing – Upstairs Rotunda)

### 10:45 - 11:00

"Serum Albumin and Functional Independence Measure (FIM) in Patients Undergoing Rehabilitation after Hip Fracture Repair" Kiranmayi Adimoolam, M.D., PGY IV | Jamal Islam, M.D., MS | Domingo Caparas, Jr. M.D., Elenita Usher, M.D. Department of Family & Community Medicine/Geriatrics

11:00 - 11:15

"Evaluating the Average Time for Onset of Labor in Healthy Primagravidas with Varied Activity Levels" Kaysi Benefield, D.O., PGY IV Department of Obstetrics & Gynecology

11:15 - 11:30 "The Effect of No Prenatal Care on Maternal and Perinatal Outcome in West Texas" Peter Hsu, M.D., PGY IV Department of Obstetrics & Gynecology

11:30 - 11:35

"Randomized Clinical Trial of Diathermy Versus Scalpel in Abdominal Wall Incision During Repeat Cesarean Delivery" Leela Sharath Pillarisetty, M.D., PGY II Department of Obstetrics & Gynecology

11:35 - 11:40

"Care in the Community: Alternative Health Approaches in the Permian Basin Mexican-American Obstetric Population" Byron Newton, M.D., PGY I Department of Obstetrics & Gynecology

### 11:40 - 11:45

"The Comparison of Presence of Vaginal Cytokines in Pregnancy Between First Trimester and Term Gestation" Kathryn Hutton, D.O., PGY III Department of Obstetrics & Gynecology

# KEYNOTE SPEAKEF

Lunch will be provided

### 11:45 - 1:00

"Using Big Data to Improve Maternal and Child Health" Zuber Mulla, Ph.D. Associate Professor Director of Epidemiologic Research Department of Obstetrics & Gynecology Texas Tech University Health Sciences Center, El Paso

# 1:00 - 1:15

"Effect of Lubricating Jelly (Non-Antimicrobial) on the Detection Rate of Group B Streptococcus in a Pregnant Population" Katherine Nelson, M.D., PGY IV | Danny Bowman, M.D. Department of Obstetrics & Gynecology

### 1:15 - 1:30

"Coccidiodomycosis Epidemiology from Two Reference Centers of West Texas" Yousef Hindi, M.D., PGY II | Diego Beltran Melgarejo, M.D., PGY II | Jesus Vera Aguilera, M.D. PGY II Cynthia Villanueva Ramos, M.D., PGY II Department of Internal Medicine | Department of Family & Community Medicine

# 1:30 - 1:45

"Evaluation of Fetal Liver, Lung, Spleen and Kidney Density by Ultrasound Examination" C.J. Boyd III, M.D., PGY III Department of Obstetrics & Gynecology

### 1:45 - 2:00

*"Hyperemesis Cannabinoid Syndrome Diagnosed in Pregnancy"* Madeline Meurer, D.O., MBA, PGY II Department of Obstetrics & Gynecology

### 2:00 - 2:15

"A Case of Altered Mental Status" Abdullah Siddiqui, M.D., PGY

### 2:15 - 2:20

"Exteriorization vs In Situ Repair of Hysterotomy in Obese Population" Sarah Burke, M.D., PGY II Department of Obstetrics & Gynecology

### 2:20 - 2:25

"Preventing Primary Cesarean Section: A Quality Improvement Study" Brittney Brothers, M.D., PGY I | Jonathan Lugo, M.D. PGY II Department of Obstetrics & Gynecology

### 2:25 - 4:00

Posters and Pre-Recorded Presentations – Upstairs Rotunda

### 4:15

AWARD PRESENTATIONS

# V. Daniel Castracane, Ph.D. Professor, Director of Research, Dept. of Obstetrics and Gynecology



Thank you, Dr. Castracane, for years of dedication to research at Texas Tech University Health Sciences Center at the Permian Basin. We appreciate all of your hard work and effort! Wishing you all the best in the future!

Castracane received his Ph.D. in Zoology from Rutgers University, specializing in reproductive endocrinology. He completed two postdoctoral training programs, the first in reproductive physiology at Case Western Reserve University School of Medicine and the second at the Worcester Foundation in steroid biochemistry. He is a member of several societies, including The Society for the Study of Reproduction, the Endocrine Society, American Society for Reproductive Medicine and the Society for Reproductive Investigation. Castracane is interested in all aspects of reproductive physiology in the female and for years has been active with a long-time colleague in exercise physiology as well. His work involved the hormonal comparison of lean and obese pregnant women. He has been an active reviewer for numerous journals and serves on several editorial boards. He has reviewed grants for NIDDK for 10 years and other NIH entities as well. He has published two books and been guest editor of several journal issues and is currently author on 159 peer-reviewed journal articles and 250 abstracts.

# JUDGES

# **Oral Presentations**



Zuber Mulla, MSPH, Ph.D. Associate Professor

Director of Epidemiologic Research

Department of OB/GYN TTUHSC El Paso, TX



Jannette M. Dufour, Ph.D.

Associate Professor Associate Dean for Research

Department of Cell Biology & Biochemistry TTUHSC Lubbock, TX



Neal Ellis, M.D. Professor

Chair of the Department of Surgery TTUHSC Odessa, TX

# Poster Presentations



M.D., Ph.D.

Professor of Physiology and Internal Medicine

Executive Director of the Clinical Research Institute TTUHSC Lubbock, TX



Craig Spellman, Ph.D., D.O., Professor

Department of Internal Medicine

Director, Center for Diabetes and Metabolism Research Director

> Regional Office Clinical Trials, TTUHSC

> > TTUHSC <u>Odessa</u>, TX



Jesus Vera Aguilera, M.D.

Resident Physician, PGYII

Department of Internal Medicine TTUHSC

# Pre-Recorded Presentations

Babatunde Jinadu M D

Associate Professor Department of Pediatrics TTUHSC Odessa, TX





# **24th Annual** *Permian Basin Research Day* ORAL PRESENTATIONS



## DETERMINATION OF NORMAL POST VOID RESIDUAL (PVR) VOLUME AT FIRST MICTURITION FOLLOWING VAGINAL DELIVERY

# Johnathan Lugo M.D., PGY II Co-author(s): Holley Bracy, D.O. Faculty Advisor: Martin Caliendo, M.D.

### PURPOSE

To identify what is a normal post void residual volume following spontaneous vaginal delivery.

### **METHODS**

We plan to scan 100 women in the immediate postpartum period. Inclusion criteria are term singleton intrauterine pregnancies with cephalic presentation following spontaneous labor with or without augmentation or induction. Exclusion criteria include operative delivery, cesarean delivery, overt postpartum urinary retention, urinary tract infection or recurrent UTI in pregnancy, history of stress urinary incontinence or pelvic organ prolapse, inability to urinate within 6 hours. These patient are then scanned within a 6 hour time period following delivery. Voided volume is documented and Doppler ultrasound is then used to determine PVR. These results are then compared with respect to birth weight, time to first void, 1st stage duration, 2nd stage duration, pitocin use, and parity.

### RESULTS

63 scans have been completed. Birthweight, 1st stage of labor, second stage of labor and non use of Pitocin appear to increase post-void residual. Average volume of PVR is elevated in the postpartum period at this point.

### CONCLUSIONS

Although there are many studies which have identified normal post void residual volume (PVR) in patients, few, if any, have successfully identified an ideal PVR in the immediate postpartum period. This study seeks to do exactly that by measuring the first PVR of patients following SVD. If successful in doing so, it may be able to successfully identify those at risk of future disease. It will hopefully allow us to establish a more prompt intervention in order to help these patients.

# RADIOLOGICAL PRESENTATION OF COCCIDIODOMYCOSIS IN WEST TEXAS Cynthia Villanueva-Ramos, M.D., PGY IICo-author(s): Jesus Vera-Aguilera M.D., PGY II, Diego Beltran-Melgarejo M.D., PGY II Yousef Hindi M.D. PGY II Departments of Family and Community Medicine & Internal Medicine Research advisor: F. Javier Flores-Guardado M.D.

### OBJECTIVE

To review the most common radiological presentations in pathologically and serologically proven pulmonary coccidioidomycosis in a West Texas Center.

### BACKGROUND

Pulmonary coccidioidomycosis is a fungal disease endemic in arid and semi-arid areas; the concentration of cases in the United States is in the southwestern area including Texas, Arizona, New Mexico and California. Other endemic areas include Mexico, Central and South America. Chu et al. report that the cumulative incidence of patients requiring hospitalization in 2002 was 28.65 per 1 million persons. The disease is caused by inhalation of spores of coccidioides species. The population at risk includes those exposed to frequent soil aerosolization. The majority of infections are asymptomatic. The diagnosis is established by direct visualization of spherules by using special stains or cultures from biologic specimens. Serologic testing of anticoccidioidal antibodies are used also for diagnosis and treatment monitoring. The infection is self-limited in 60% of cases; when the disease is symptomatic the lung is the primary site of involvement. The most common presenting symptoms were cough, fever and chest pain. On the basis of clinical presentation and imaging abnormalities, pulmonary involvement is categorized into acute, disseminated and chronic forms each with a spectrum of imaging findings. In patients with acute disease the most common presentations are nodular, mass, consolidation, military, cavities and pleural effusion.

### MATERIAL AND METHODS

We conducted a retrospective study; men and women aged 18 years or older; with admission or discharge diagnosis ICD- 9 code for Coccidioidomycosis were included. A total of 781 charts from 2003 to 2013 were evaluated. Radiologic findings in chest x-ray (CXR) and Computed Tomography (CT) of the Chest at presentation were systematically reviewed for localization of the findings, Unilateral (Right vs. Left), bilateral and type of presentation (consolidation, cavitations, nodules/masses, miliary, pleural or pneumothorax).

### RESULTS

After a careful review, we excluded 499 records due to duplication of information. Of the remaining 282 patients, we excluded 140 records because no confirmation of the diagnosis was found. A total 142 patients with confirmed Coccidioidomycosis diagnosis were then included in the study. From the 142 patients, 25 were excluded because they did not have any imaging study performed. There were a total of 117 patients with imaging and Coccidioidomycosis of which 115 patients (98.2%) had chest x-ray and 113 patients (96%) had CT Chest. We found that the most common presentations in CXR were as follows: Unilateral 68.7%, Bilateral 18.2%; Right Lung 55.7%, Left Lung 44.3%; Nodular/Mass presentation 33%, Consolidation 25%, Cavities 20%, Pleural effusion 6% ,Miliary 4.3%, Pneumothorax 0%. CT Chest results showed Unilateral presentation 11.5%, Miliary 4.4%, Pleural Effusion 4.4%. When unilateral presentation was found in CT Chest the results were as follows: Right Upper Lobe 30.8%, Right Lower Lobe 20.2%, Right Middle Lobe 10.6%; Left Upper Lobe 19.1%, Left Lower Lobe 12.7%, Left Middle Lobe 4.2%, Left pleural effusion 2.1%.

#### CONCLUSION

In our study, we found that Pulmonary Coccidioidomycosis in West Texas presents more commonly in the CXR unilaterally (69%) in the right lung (58%) being Nodular/Mass the most common presentation (33%). The CT chest presentations showed that 77% of the cases were unilateral, with the most common presentation being Nodular/Mass present in 50% of the cases. The right upper lobe and left upper lobe were the most prevalent areas affected with coccidioidomycosis 30.8% and 19.1% of the cases respectively. These findings agree with the solitary pulmonary nodule literature in which the upper lobe localization is a risk factor for disease that may be explained by the better ventilation in that anatomical area; in the case of coccidioidomycosis infection we confirmed that the upper lobes are more affected, probably due to a higher spore's concentration in those well ventilated areas.

# COMBINED PARASITE DERIVED PEPTIDE GK1 AND PROGRAMMED DEATH ANTIBODY (ANTI-PD-L1) THERAPY INCREASED SURVIVAL IN A MELANOMA MOUSE MODEL.

Author: Jesus Vera-Aguilera, M.D., PGY II

Co-authors: Diego Beltran-Melgarejo M.D., PGY II, Cynthia Villanueva-Ramos M.D.,

Department of Internal Medicine Faculty Advisor: Gary Ventolini M.D.

### INTRODUCTION

Melanoma is the most malignant form of skin cancer, and the incidence of this disease is rising rapidly, especially in the Caucasian population. With the recent discovery of checkpoint receptor inhibitors such as Cytotoxic T LymphocyteAntigen-4 (CTLA-4) and more recently Programmed death-1 receptor (PD1) and its ligand (PD-L1) the immunotherapy of cancer entered the new era. The Programmed Death-1 pathway is now recognized to be a major mechanism by which tumors suppress T-cell mediated antitumor immune responses. Studies regarding the PD1/PDL1 pathway suggest that combining therapies targeting tumor mechanisms of immune evasion with activation of normal immune cell may provide optimal treatment strategy. Previous studies in mice have shown that GK1, an 18-aminoacid peptide derived from Taenia crassiceps cysticerci, has the potential to be used as a primary or adjuvant component of chemotherapeutic or immunotherapy cocktails for the treatment of human cancers by stimulation of the proinflammatory cytokines IFN-gamma, TNF-a and the inflammatory chemokine CCL2 (MCP-1) in dosedependent manners. In this study, the efficacy for GK1 in combination with Anti-PD-L1 as an adjuvant treatment in a melanoma mouse model was evaluated.

### MATERIALS AND METHODS

Forty mice, 6- to 8-week-old C57BL/6 were injected with 2 X105 B16-F10-luc2. Tumor-bearing mice 20mm3 were separated in four different groups: GK1, Anti-PDL-1, GK1/anti-PDL-1, and control, (10 mice per group). GK1-treated peritumorally until sacrifice day. The antiâ€"PD-L1 treated group injected intraperitoneally (IP) with anti-PD-L1 antibody until sacrifice day. The combined immunotherapy group injected with an antiseptic peritumoral injection of GK1 and anti-PDL-1 until sacrifice day and the control group injected with peritumoral or IP sterile saline. Mice were sacrificed when moribund or lethargic or when they fail to respond to gentle stimuli, and day of death was recorded. All experimental procedures comply with the "Principles of Laboratory Animal Care" and the Guide for the Care and Use of Laboratory Animals (NIH publication No. 80-23, revised 1985) and by the University Laboratory Animal Care Committee at Texas Tech University Health Sciences Center.

### RESULTS

The GK1 peptide in combination with Anti-PD-L1 demonstrated therapeutic properties in a mouse melanoma model, as treatment resulted in a significant increase in the mean survival time of the treated group of 34 days compared to 23 days in the control group

(P < 0.01). Moreover, the combination group demonstrated statistically significant increase of survival compared to GK1 or Anti-PD-L1 alone (P< 0.01). The potential for GK1 to be used as a primary or adjuvant component of chemotherapeutic cocktails for the treatment of experimental melanoma was demonstrated in this study for the first time. Further studies to evaluate the direct translational bench-to bed-side translational potential are being performed by our group.

# IS ROUTINE INSERTION OF UMBILICAL ARTERIAL CATHETERS NECESSARY IN VERY LOW BIRTH WEIGHT (VLBW) NEONATES?

# Christopher Sawyer, MS III Department of Pediatrics Faculty Advisors: Robert Bennett M.D., Dimitrios Angelis M.D., Amanda Hughes NNP

### BACKGROUND

The avoidance of hypotension, in the early neonatal period, has been an important part of the management of VLBW. Nevertheless, continuous aortic BP measurements in sick preterm infants during the first 3 days of life showed that none of the more commonly used clinical definitions of hypotension reliably predicted early abnormal cranial ultrasound findings, or any other serious outcome. Invasive measurement of blood pressure has been the gold standard method for measurement of the blood pressure in neonates. Umbilical arterial catheter placement is associated with serious complications such as sepsis, thrombosis, embolization, vascular perforation, hemorrhage and vasospasm or even acquired coarctation of the aorta. Methods of non-invasive measurement of blood pressure, such as the oscillatory method, have been shown to correlate well with the invasive methods, especially in the assessment of the mean blood pressure.

### OBJECTIVE

To test the hypothesis that insertion of umbilical arterial catheter, routinely, does not improve clinical outcomes (such as risk of intraventricular hemorrhage, chronic lung disease etc.) in VLBW neonates.

### **METHODS**

An observational, retrospective, case-control study that includes all neonates born at Medical CenterHospital, Odessa from January 1, 2000 to January 31, 2014, with birth weight (BW) < 1500 grams and/or gestational age (GA) < or equal to 28 weeks. We will define as case: All patients during this period of time in whom an umbilical arterial catheter was attempted, but failed to be inserted. We will define as control: The closest VLBW newborn admitted near the case and an umbilical arterial catheter was successfully inserted, as long as it is of the same gender, of similar GA ( $\pm$  1 week, but  $\leq$  28 weeks), and has a difference in birth weight compared to the case that did not exceed 100 g.



### RESULTS

Means or proportions of baseline demographic characteristics will be calculated. The Shapiro-Wilks test will be used to analyze the normality of distribution of the difference of values between each matched case and control. Resulting 95% confidence intervals for the difference in continuous outcomes of interest will be reported. For categorical outcomes, like survival or presence/absence of a condition, contingency tables will be reported and the resulting 95% confidence interval for the odds ratio (OR) will be reported.

### CONCLUSION/SIGNIFICANCE

By individualizing the need of umbilical arterial catheterization, we may possibly decrease the rate of complications that arise from UAC insertion (thrombosis, vessel perforation, peritoneal perforation, air embolism, etc.) and overall improve the long- term outcome.

# BIG DECISION CURRICULUM FOR SEX EDUCATION IN THE ECTOR COUNTY INDEPENDENT SCHOOL DISTRICT Lisa Platner, MSN, RNC-OB Co-author(s): Elisa Brown, M.D., Graciela Flores, DNP Department of Obstetrics and Gynecology

### BACKGROUND

Teen pregnancy is endemic in the United States numbering 750,000 per year for girls age 15-19 (CDC, 2010). In Ector County, Texas, teen birth rates are 4.4 times the national average and 2.9 times state averages (County Comparison Project, 2010). The consequence: teens drop out of school (20 % in Ector County), and are up to nine times more likely to live in poverty.

### OBJECTIVE

The objective of this study was to develop and evaluate a Sex Education program for the Ector County Independent School District with the aim of lowering the Ector County teen pregnancy rate.

### **MATERIAL & METHOD**

A quality control instrument developed for the Big Decisions Curriculum was used to evaluate the efficacy of the program: 12 question pre and post instruction surveys based on a five-point Likert scale, measured behavioral determinants such as self-efficacy, intent and attitude as well as student knowledge of the topics covered. The pre and post surveys were amended by addition of three questions assessing the morality-based portion of instruction.

### RESULTS

1735 students responded to surveys. Seventh graders ranged in age from 11 to 15 years. 86.5% were 12-13 years old. 52% of students responding were Hispanic; 13.5% were White; 1.8 were Black. 28% returning surveys did not respond to this question. 46.9% of students surveyed were female, 41.8% were male. Results are presented on Fig. below.

### CONCLUSION

The Texas Tech pilot program was able to abide by sex education best practice criteria in most areas including curriculum-based instruction and science plus values content. The positive percent changes toward avoiding early sexual activity cannot directly be inferred as intent without further statistical analysis. However, the trend towards agreement that early sexual activity carries risk and that this risk can be avoided indicates that the key messages of the program are being communicated. The descriptive data from the pilot indicate that program results seen in the initial implementation of BIG DECISIONS are reproducible in Ector County. Program expansion and formal research are also planned to reproduce measures of intent inferable to the general teen population in the region and to track effectiveness in terms of outcomes such as reduced local teen pregnancy rate.

# IMPACT OF A DEMENTIA CARE WORKSHOP SERIES ON CAREGIVERS AND PATIENTS AFFECTED WITH THE ILLNESS.

Maricris Lapinid, M.D., PGY IV

Co-author(s): Liliana Andrade, M.D., Kiranmayi Adimoolam, M.D., Lettie England, LBSW.

# Department of Family Medicine/Geriatrics Faculty Advisor: Nimat Alam, M.D.

### BACKGROUND

Dementia is a non-curable overwhelming condition for the people who have it and for their caregivers and families; it is one of the major causes of disability and dependency among older people worldwide. The provision of care to a person with dementia can result in significant strain for those who provide most of that care. The stressors are physical, emotional and economic. In 2013, dementia care givers cost reached \$220.2 billion.

Despite the availability of services for patients with dementia and their families, there are barriers to uptake due to lack of understanding, stigma, previous poor experience with services, and cultural, language and financial barriers.

Education campaigns for people with dementia, caregivers and families can improve service utilization by raising awareness, improving understanding and decreasing stigmatizing attitudes.

We want to provide dementia-related education and emotional support program for the caregivers to enable them to continue in their role for as long as possible. These include information to aid understanding of the disease process and skills to assist in caring for the patient. Information regarding the presence of organizations, availability of support systems and access to health care/social services may be extremely useful for both the patient and caregiver. It may also be helpful to educate caregivers about developing coping skills in order to avoid caregiver emotional and physical strain, and anticipatory grief associated with the experience of having a loved one who is suffering from dementia.

### **METHODS**

A multidisciplinary team encompassed by Geriatric fellows, Geriatric faculty and Social Worker will provide workshop series to the family members and providers of our geriatric community on monthly basis addressing various aspects commonly encountered in the disease process of Dementia including behavioral issues, communications techniques, support services, legal matters and emotional support for the caregivers. An attitude and basic knowledge pre-test, immediate post-test as well as a 4 week post-test will be administered to assess impact of education strategies.

### RESULTS

The aims of this educational project is to evaluate the effects of the training on attitudes and knowledge of dementia workshop, and caregiver satisfaction

### CONCLUSION

Dementia is a condition that affects patients as well as their caregivers and family members, 75% of the home care is provided directly by family and friends with a high cost to American Society estimated in \$214 billion. Caregiving is clearly a public health issue of national significance, and one that will become more prominent with the aging of the baby boomers. Implementation of the dementia education program in the caregivers and families may provide the necessary knowledge and skills to improve behavioral related problems, risk for hospitalization and institutionalization, leading to better outcomes and quality of life for the patient with dementia as well for the caregivers and family members.

# USE OF EYE TRACKING DEVICE: A NEW AND NOVEL TECHNOLOGY TO ASSESS CLINICAL DEPRESSION Thomas Feba, MS III Co-author: Amna Ahmed, MS III Department of Psychiatry Faculty Advisor: Bobby Jain M.D.

### **INTRODUCTION**

Major depressive Disorder (MDD) is a major psychiatric condition. Public health Questionnaire (PHQ – 9) is the most commonly used scale to assess the severity of clinical depression in an outpatient setting. A Faces Mood Likert Scale is being proposed as an alternative, yet quicker way to assess severity of depression. The eye tracking technology makes it possible to know exactly where users are looking and for how long.

### **RESEARCH QUESTION**

1. To assess the feasibility of using eye tracking technology on a Faces Mood Likert Scale to rapidly assess clinical depression in an outpatient setting. 2. To compare the accuracy of the severity of depression assessed by the combined use of eye tracking technology and a Faces Mood Likert Scale with the clinical standard of assessment of depression using Public Health Questionnaire – 9 scale.

### METHODS

40 consecutive adults (18 – 65 years) with MDD, as diagnosed by clinical assessment and with severity assessed by PHQ – 9 scale (mild, moderate, or severe) will be asked to rate the severity of the depressive symptoms on a Faces Mood Likert Scale. The individuals will be monitored by the eye tracking software device while they are in the process of choosing the right expression of the faces on the Faces Mood Likert Scale corresponding to their respective moods. The eye-tracking device will assess each individual's area of gaze and concentration on the Faces Mood Likert Scale.

### RESULTS

The study has recently been approved by the Texas tech health science Center Institutional Review Board ( IRB #: L14-178). The study will assess correlations between the severity of depression and the duration of visual gaze towards a specific segment on the Faces Mood Likert Scale. Such duration of visual gaze will also be corroborated with the PHQ -9 scale scores.it is hypothesized, that the eye tracking methodology will prove to be an accurate and rapid process of detection of clinical depression in an outpatient clinical setting.

### CONCLUSION

Preliminary findings will be displayed on the TTU-PB research day.

### ACKNOWLEDGMENTS

Special thanks to the staff of the Clinical Research Institute for their assistance

# A WOLF IN SHEEP'S CLOTHING Osama Mukarram, M.D., PGY I

### **Department of Internal Medicine**

### **PROPOSAL/ABSTRACT**

Differentiating bacterial from a viral etiology for sore throats often present a challenge in the clinic. In recent changes in practice from opting for more conservative approach in treating sore throats often leads to misdiagnosing the cause behind the presentation. Recent literature has shown resurgence of bacterial cause of sore throat and increase in the incidence of once 'forgotten diseases'. Timely diagnosis of bacterial pharyngio-tonisillitis and prompt administration of appropriate antibiotics leads to prevention of more sinister sequela of this common clinic presentation.

We present a case of young male with cough, pleuritic chest pain and recurring fevers who developed neck pain and swelling during his hospitalization. CT scan of the neck showed internal jugular vein thrombophilibitis and blood cultures revealed anaerobic gram negative bacteremia. Prompt diagnosis of Lemieres syndrome and appropriate administration of antibiotics lead to prevention of further complications.

# SERUM ALBUMIN AND FUNCTIONAL INDEPENDENCE MEASURE (FIM) IN PATIENTS UNDERGOING REHABILITATION AFTER HIP FRACTURE REPAIR Kiranmayi Adimoolam, M.D., PGY IV

Co-author(s): Jamal Islam M.D., M.S., Domingo Caparas, Jr., M.D., Elenita Usher M.D.

Department of Family Medicine/Geriatrics Faculty Advisor: Nimat Alam, M.D.

### BACKGROUND

Body composition changes with advancing age. RDA of protein for adults >19 years for maintaining bone and muscle mass is 0.8g/kg/day. Inadequate protein intake contributes to a decrease in reserve functional capacity and longer recuperation from illness. After repair of hip fracture patients undergo extensive physical therapy (PT) and logically will need a healthy muscle mass. In hospitalized patients, low level of albumin is common and can slow down recuperation delaying discharges. There is paucity of studies that looked in to the association of serum albumin level a marker of muscle mass, strength and power and Functional Independence Measure (FIM); a standardized method used to measure level of disability thereby assessing outcome of rehabilitation. If an association is found, nutritional intervention to increase albumin level may increase FIM and improve outcome.

### OBJECTIVE

Evaluate association between serum albumin and FIM score after rehabilitation for hip fracture

### **STUDY DESIGN**

Cross-sectional

### SUBJECT AND SETTING

Convenient sample from Skilled Nursing Facility

### DATA COLLECTION

Standard data-collection form.

### **INCLUSION CRITERIA**

Hip Fracture for rehabilitation during the period 2008-2011

### MAIN OUTCOME MEASURES

FIM score.

#### RESULTS

Mean age 75y (SD 8.4), 69% female, 89% White, 60% Non-Hispanic, 73% had Medicare, only 6% were current smoker, 20% former smokers, 79% were independent in there ADL, 40% were using walker, 72% were living with family, 52% had R hip fractures, 57% were inter-trochanteric and 74% had ORIF. Albumin level was significantly associated with DM II, ADL, and Osteoporosis. But not with Gender, race and ethnicity. All patients had increased FIM score after physical therapy. An independent-samples t-test to compare FIM score for low and high albumin levels (cut of 3mg/dl). There was significant difference in FIM scores and albumin level. Low M=101.2 SD 14.6 and high M=113.5 SD 10.1 t 5.6 p= < .001 (2-sided) Magnitude was large eta .18

# EVALUATING THE AVERAGE TIME FOR ONSET OF LABOR IN HEALTHY PRIMAGRAVIDAS WITH VARIED ACTIVITY LEVELS Kaysi Benefield, D.O., PGY IV Department of Obstetrics and Gynecology Faculty Advisor: Randall Kelly, M.D.

### BACKGROUND

In the world, the mean gestational age of pregnancy is at 40 weeks. The perinatal mortality rate is lowest for infants who deliver at 39-40 weeks gestation. Perinatal mortality begins to rise at 41 weeks gestation. There have been many studies of the effects of aerobic exercise in pregnancy and its influence on pregnancy outcomes, but there has never been a study on extra walking during the last 4 weeks of pregnancy and gestational age at onset of labor. There is also a question of whether obesity versus non-obesity has any relationship to the onset of labor.

### **OBJECTIVE**

This is a preliminary study in which data is gathered on primigravida women to determine the gestational age when they go into labor.

### **METHODS**

Case series study of primagravida patients seen at TTUHSC OB/GYN clinic, Odessa, TX between January 1, 2011 and July 31, 2012. The medical records reviewed were determined by reviewing the MCH Labor and Delivery Unit records to identify the specific patients meeting the study delivery criteria, time frame, and TTUHSC faculty as their physician. This master list was used to collect the data needed for the newborn, and to identify the associated maternal medical records in the TTUHSC OB/GYN clinic to be screened for study inclusion. The mean duration of gestational age and confidence interval were calculated for the sample, along with the mean and confidence interval of the 4 weight groups, underweight, normal weight, obese (BMI >30), and non-obese (BMI<30) groups as categorized at the beginning of pregnancy.

### RESULTS

The mean gestational age at which primagravida TTUHSC patients deliver was 39.42 weeks. The pooled 95% CI for the mean GA at delivery is 39.21-39.63 weeks. A secondary result is the difference between gestational ages of obese versus non-obese patients. The mean gestational age for obese women was 39.36 weeks and for non-obese women it was 39.42 weeks. A total of 90 patients met all inclusion criteria. There were 12 women in the obese category and 78 in the non-obese category.

### CONCLUSION/SIGNIFICANCE

This data will establish a historical control for a prospective study. The prospective study will then evaluate whether a formal walking program, in addition to other normal daily activities, will help primagravida pregnant patients go into labor earlier compared to the historical controls whose activity levels are unknown, but can include any and all activity levels during pregnancy and during the last 4 weeks of pregnancy.

# THE EFFECT OF NO PRENATAL CARE ON MATERNAL AND PERINATAL OUTCOME IN WEST TEXAS Peter Hsu, M.D., PGY IV Department: Obstetrics and Gynecology Faculty Advisor: Raymond M. Hampton, M.D., FACOG

### BACKGROUND

Prenatal care came into being in the early 1900s as a way to combat the high maternal mortality rates, but more importantly there are many studies that show the benefits of prenatal care and its ability to mitigate fetal morbidity and mortality. A study done in 2003 found that lack of prenatal care was associated with more than a twofold increased risk of preterm birth. National Center for Health Statistics data showed that women with prenatal care had an overall stillbirth rate of 2.7 per 1000 compared with 14.1 per 1000 for women without prenatal and was associated with lower rates of preterm birth as well as fetal-growth restriction.

We have noticed an increasing number of individuals with no prenatal care delivering at our institution. Therefore, we evaluated the effect of no prenatal care in our own population in West Texas.

### OBJECTIVE

To compare individuals with prenatal care and individuals without prenatal care to see if there has been any effect on the maternal and perinatal outcomes in our patient population.

### **METHODS**

A cross-sectional study of the population was performed by reviewing medical charts of all deliveries performed by Texas Tech Obstetrics and Gynecology department at Medical Center Hospital from January 1st, 2010 to December 31st, 2010. The group with no prenatal care was compared to those patients receiving various amounts of prenatal care with respect to rate of key maternal and neonatal outcomes including: rate of cesarean delivery, NICU admission, preterm premature rupture of membrane (gestational age < 37 weeks), hypertensive disorder, preterm delivery (gestational age < 37 weeks), maternal anemia (hemoglobin < 11 g/ dL), stillbirth, low apgar score (< 7 in 5 minute test), and low birth weight (weight <2500grams). The level of prenatal care was divided into adequate, intermediate, and inadequate based on the Kessner index, which takes into account the timing of the first prenatal visit, number of prenatal visits, and the length of gestation. Statistical analysis was performed using the  $\chi$ 2 test. Odds ratios were generated to compare each level of prenatal care to the reference group of no prenatal care and pairwise p-values were generated for comparative purposes.

#### RESULTS

A total of 623 deliveries performed by the Texas Tech Obstetrical service at Medical Center Hospital from January 1st, 2010 to December 31st, 2010 were reviewed. 96 patients (15%) received no prenatal care, 158(25%) received inadequate care, 226(36%) received intermediate care, and 143(23%) received adequate prenatal care. The overall rate of cesarean delivery was 28%, maternal anemia was 23%, hypertensive disorders was 7.8%, low Apgar score was 7.4%, and stillbirth was 0.8%; no statistical significance was noted between those who received prenatal care compared to no prenatal care for these outcomes. The overall rate of NICU admission was 15%, preterm delivery was 14%, low birth weight was 12%, and premature preterm rupture of membrane was 3.6%; these outcomes did show a statistical significance of p = 0.011 was also reached in the  $\chi$ 2 testing of the relationship between the Kessner Index and individuals with one or more birth complications, excluding cesarean delivery, which could not be limited to emergent cases during retrospective methods.

### CONCLUSION

Based on our study there was a significantly increased rate of NICU admission and low birth weights in our patients with no prenatal care as compared to patients with any level of prenatal care.

# RANDOMIZED CLINICAL TRIAL OF DIATHERMY VERSUS SCALPEL IN ABDOMINAL WALL INCISION DURING REPEAT CESAREAN DELIVERY

# Leela Sharath Pillarisetty, M.D., PGY II Department of Obstetrics and Gynecology Faculty Advisor: Martin Caliendo, M.D.

### INTRODUCTION

The rate of primary CD has increased in United States and more women prefer elective repeat cesarean delivery. This increased rate of cesarean deliveries is associated with short- and long-term maternal complications. Among the approaches used to reduce the rate of the postoperative complications is the improvement of surgical technique, which could contribute to more than two-fold decrease in post-operative morbidity. During surgical procedures, one of the widely used approaches to decrease blood loss, surgery time and thus post-operative complications is tissue dissection by electrosurgery or diathermy, which is defined as the process of applying high-frequency electric current to the tissues to cut, coagulate, and desiccate. The major purported disadvantages of electrosurgical skin incisions are fears of deep burns; with resultant scaring, slower wound healing, and increased postoperative pain. However, recent meta-analyses showed decreased incision time, blood loss and post-operative pain with no significant difference in wound infection rates or scar.

### OBJECTIVE

The objective of this study is to compare scalpel vs. diathermy in abdominal wall incision including skin in pregnant patients undergoing repeat elective cesarean delivery. To our knowledge there are no studies of this kind in pregnant women undergoing Cesarean deliveries.

We hypothesize that the abdominal wall incisions made by diathermy compared to scalpel during repeat cesarean delivery will have less incision time, less blood loss, as well as less postoperative pain.

### METHODS AND METHODOLOGY

This is a randomized prospective study. Patients from Texas Tech OBGYN clinic and also from Medical Center Hospital, Odessa, Texas will be recruited and divided into two groups, group one will undergo diathermy to incise the entire abdominal wall, which includes skin, subcutaneous tissue, rectus muscle until the peritoneal cavity is visible. In group Two Scalpel will be used to achieve the same aims.

#### RESULTS

Expected results will be the finding of less operative time, blood loss, postoperative pain, in diathermy abdominal wall incisions compared to scalpel incisions, in pregnant women undergoing repeat cesarean deliveries.

### CONCLUSION/SIGNIFICANCE

To our knowledge, this study will be the first to compare the results of diathermy vs scalpel abdominal wall incisions in pregnant women undergoing cesarean deliveries.

The study results can be used to help determine which method of incision is preferably used especially in case of emergency cesarean deliveries where time is a crucial factor.

# CARE IN THE COMMUNITY: ALTERNATIVE HEALTH APPROACHES IN THE PERMIAN BASIN MEXICAN-AMERICAN OBSTETRIC POPULATION

# Byron Newton, M.D., PGY I Department of Obstetrics and Gynecology Faculty Advisor: Joy Anderson, M.D.

### BACKGROUND

Curandera-parteras (traditional Hispanic midwives) are healers who manipulate the supernatural and spiritual world. Historically, curandera-parteras work only with herbs, and others specialize in childbirth while incorporating herbs. Curanderismo involves a folk healing system and has beginnings dating back to the time of the Aztecs, Incans, and Mayans who held religious beliefs that dealt with harmony with nature and self and spirit. The indigenous of Mexico believed in polytheism, or a multitude of gods, and believed these deities punished with supernatural diseases. Curandera-parteras hold important positions in the community, especially among those who are uninsured and have a low income. Payment, called correspondencia, involved bartering. Curandera-partera practice includes ties between spirituality and medicine, including the care of the stillborn, lunar eclipses causing deformed or crippled children, and difficult labor due to an ill-tempered or disrespectful personality. During the early 20th century, the New Mexico Department of Health created a partnership with curanderas-parteras to improve statistic collection and to educate them about obstetric care and when to call a physician. Nearly a century has passed since then, and several curanderismo beliefs/practices have changed over time. We now know what curanderas-parteras believed in then, but what is practiced now remains vital to the care of obstetric patients in the Latino/a community. This study investigates the current practices of curanderas-parteras and interrogates the ways in which alternative health care providers and obstetricians can work together to provide better patient care.

### OBJECTIVE

To investigate the health disparities in the Permian Basin region and the contributions of alternative health care providers such as curanderas and parteras toward the obstetric population.

#### **METHODS**

All obstetric patients at TT-UWHC are to be surveyed on their use of curanderas or parteras for obstetrical care, as well as knowledge of other pregnant patients who have utilized their services. While doing so, using our patients and nurses, parteras and curanderas in the Midland-Odessa area will be contacted to discuss services provided.

### **EXPECTED RESULTS**

Preliminary results from a three-question survey continue to be collected. Based on the presence of a curandera-partera clientele and discussions with curandera-parteras in the community, more information will be gathered on services offered.

### SIGNIFICANCE

If curandera-parteras have a significant number of patients, then we can establish a partnership between alternative health care providers and obstetricians, which benefits patients. Such a partnership also allows for dialogue between both groups. Curandera-parteras must be approached with respect, and we must understand that they pose no threat to obstetricians and vice-versa. Both share a common goal: a healthy mother and her baby.

# THE COMPARISON OF PRESENCE OF VAGINAL CYTOKINES IN PREGNANCY BETWEEN FIRST TRIMESTER AND TERM GESTATION Kathryn Hutton, D.O., PGY III Department of Obstetrics and Gynecology Faculty Advisor: Gary Ventolini, M.D.

### BACKGROUND

Markers for onset of labor have long been of great interest to clinicians and researchers. Previous studies have implicated changes in vaginal flora in various pregnancy complications such as preterm labor and premature rupture of membranes. There are limited studies examining the role of vaginal cytokines in the normal pregnancy and prediction of normal labor. In our search we found no studies that compare the relatively large number of cytokines used in the Rad BioPlex 200 analysis system. To determine if these cytokines could be used as markers for preventing pregnancy related complications in the future, it is important to first understand the relationship that vaginal cytokines have with uncomplicated pregnancy.

### OBJECTIVE

To compare 27 vaginal cytokines in the first trimester, second trimester and at term pregnancy in a low risk obstetrical population.

### **METHODS**

We will analyze cytokine results from vaginal samples that have been collected over the past 2 years from an IRB approved databank at TTUHSC Permian Basin (IRB#L13-054). Results collected during routine prenatal care visits from a low risk population of singleton pregnancies with maternal age 21-34 will be included. First trimester (6wks 1/7days – 14wks 6/7days gestation), second trimester (15wks 0/7days – 28wks 6/7days gestation), and term (37wks 0/7days -41wks 6/7days gestation) pregnancy samples will be used for comparison against a non-pregnant age matched control group. The samples collected have been analyzed using the Rad BioPlex 200 system and evaluated for 27 different cytokines. Statistical analysis will be used to compare the cytokines in the three groups.

### **EXPECTED RESULTS**

We expect to find a difference in the expression of various cytokines at each of the gestational ages studied.

### SIGNIFICANCE

The results of this study will help us determine the individual cytokines, among the 27 studied, that become more highly expressed closer to term gestation, therefore closer to labor. This could provide important information for further studies that may determine a significant specific marker for labor and possibly preterm labor.

# EFFECT OF LUBRICATING JELLY (NON-ANTIMICROBIAL) ON THE DETECTION RATE OF GROUP B STREPTOCOCCUS IN A PREGNANT POPULATION Katherine Nelson, M.D., PGY IV Co-author(s): Danny Bowman, M.D.

# Department of Obstetrics and Gynecology Faculty Advisor: Martin Caliendo, M.D.

### BACKGROUND

Women are routinely tested for Group B Streptococcus (GBS) at 35-37 weeks gestation according to recommendations from the American College of Obstetricians and Gynecologists (ACOG) and Centers for Disease Control (CDC). Patients testing positive are given antibiotics while in labor. This intervention decreases the risk of transmission to the infant during delivery. Many patients, on presentation to labor and delivery, have digital cervical exams to determine if they are in labor. If a patient is preterm, testing for GBS may not have been performed previously; therefore, the GBS culture may be obtained after a digital exam. It is unclear if the lubricant used for the digital exam will interfere with the GBS culture. A recent study was done examining if a chlorhexidine containing lubricant will alter detection rates of GBS. The results of that study showed that use of the chlorhexidine lubricant decreased the detection rate of GBS by 50%. To our knowledge, no study has been done on lubricant not containing chlorhexidine. Many facilities, including ours, routinely use sterile lubricant with no antimicrobial added.

### OBJECTIVE

This study will determine if detection rates of GBS vary based on usage of sterile lubricant.

### HYPOTHYSIS

Sterile lubricant will not change the detection rate of GBS bacteria.

### **METHODS**

The study population was gathered using patients receiving routine prenatal care in our clinic, the University Women's Health Center at Texas Tech of the Permian Basin. IRB approval was completed, and patients were consented for enrollment prior to participation in the study. Inclusion criteria were based on the CDC recommendations for GBS screening in pregnancy and included any patient who was undergoing routine sampling for GBS at greater than or equal to 35 weeks gestation, at least 18 years of age, and consented to participate in the study. Exclusion criteria included any pregnant patient under the age of eighteen, positive for GBS in the urine during the current pregnancy, history of having a prior infant with invasive GBS disease, or having had a cervical exam involving the use of an antimicrobial lubricant immediately before the first swab was collected. The study protocol was as follows: (1) after consent was obtained, an initial GBS sample was collected using previously published guidelines from the CDC by swabbing inside the introitus of the vagina and through the anal sphincter, (2) a digital cervical exam was performed using a non-antimicrobial containing lubricant, and (3) a second GBS sample was then collected in the same manner as the first swab. Both samples were labeled separately, immediately placed in individual culture medium, and analyzed according to current lab standards. The results were then compared to determine if use of the gel changed the detection rate.

### RESULTS

There were 180 people enrolled in this study. Two GBS samples were obtained from each participant and processed separately. The data was analyzed using a one-sided McNemar's test. The observed p-value using this test was found to be 0.45 and the odds ratio was found to be 2.5 (95% CI 0.41 to 26.5). These values indicate that within our limited study population there was no difference in the detection rate of the GBS bacteria, but that the results were not statistically significant. With only a 3.9% discordant pair rate observed, the associated one-sided McNemar's test for the 180 patients is only able to discern a p-value of 0.05 with an odds ratio of 2.5 with 10% power. This indicated that the current study was underpowered to detect a difference in detection rate of GBS between the two sample swabs. Should these estimates hold up in larger sample populations, a power calculation suggests that 901 patients would have to be enrolled to ensure with 80% power that the critical number of twenty-three discordant pairs would be observed.

Seven discordant pairs were found out of the 180 patients enrolled. There were two pairs in which the control swab was positive and the post-swab was negative. There were five pairs in which the control swab was negative and the post-swab was positive. This second phenomenon was an unexpected finding. It can be attributed to: (1) culture sampling error, (2) mechanical relocation of bacteria from the perianal region to the lower vagina where the sample is taken, and (3) differing bacterial colonization loads in patients.

### CONCLUSIONS

Although underpowered, it does not appear that non-antimicrobial containing lubricant hinders the detection of GBS.

Special thanks to the Clinical Research Institute.

# COCCIDIODOMYCOSIS. EPIDEMIOLOGY FROM TWO REFERENCE CENTERS OF WEST TEXAS

Yousef Hindi, M.D., PGY II Co-author(s): Diego Beltran-Melgarejo, M.D., PGY II, Jesus Vera - Aguilera. M.D., PGY II, Cynthia Villanueva-Ramos, M.D., PGY II Research advisor: F. Javier Flores-Guardado M.D.

### Department of Internal Medicine and Family & Community Medicine.

### INTRODUCTION

Coccidioidomycosis, also known as valley fever, is an infection caused by inhalation of Coccidioides spp. spores. Coccidioides spp. are dimorphic, soil-dwelling, fungi, known to cause a broad spectrum of disease ranging from a mild febrile illness to severe pulmonary manifestations or disseminated disease. The CDC (Centers for disease control and prevention) has reported an increased incidence of this disease; In Arizona, California, Nevada, New Mexico, and Utah combined, the number of cases increased from 2,265 in 1998 to 22,401 in 2011. Texas is considered an endemic area for this infection however, coccidioidomycosis is not reportable in this state, and in effort to evaluate the epidemiology of this disease we evaluated Coccidiodomycosis in two reference centers of West Texas.

### MATERIALS AND METHODS

Men and women aged 18 years old or older with the admission or discharge ICD 9 code for Coccidioidomycosis hospitalized patients from January 1, 2003 to December 31, 2013 in Medical Center Hospital, Odessa, Texas; and Midland Memorial Hospital, Midland, Texas with confirm diagnosis of Coccidioidomycosis by culture or positive serologic test for coccidioidal antibodies in serum, cerebrospinal fluid, or other body fluids. Data was stratified by Age, sex, race, presenting symptoms, side effects, concurrent conditions, hospital length of stay and if required ICU length of stay, inpatient mortality and mortality at 6 months of discharge.

### RESULTS

A total of 499 records were evaluated. From this, 329 patients were excluded for no diagnosis support (serology, culture or biopsy); only 170 patients were included in the study. 58.8% of patients were male while 41.17% female. Mean age of diagnosis was 53.20 years (15-89); interestingly, from the 170 patients, in 22.94% (n=39) of patients coccidiodomycosis was an incidental finding, from the rest 77.05% (n=131), the most common presenting symptoms were cough 36%, followed by dyspnea 37.40%, and fever 27.64%. The most common concurrent condition in patients with coccidiodomycosis was Diabetes Mellitus type II in 31.76% followed by Chronic Obstructive Pulmonary Disease in 11.76% of patient and HIV in 5.88% of patients. 41.17% of patients required hospitalization, the average length of stay when hospitalized was 12.8 days, interestingly when ICU was required an average of 17 days of stay was identified. Mortality during hospitalization was related only in 5.88% of patients and 4.11% at 6 months.

### CONCLUSIONS

This retrospective study contributes towards the patients characteristic diagnosis with i Coccidiodomycosis in two reference centers of West Texas for the past 10 years by improving awareness of the disease and identify patients at risk; this study set the base for persons in endemic areas to consider reduce exposure to dusty air, which might contain Coccidioides spp. Spores, additional research into strategies that reduce the incidence or morbidity of this infection is warranted by public health institutions.

# EVALUATION OF FETAL LIVER, LUNG, SPLEEN, AND KIDNEY DENSITY BY ULTRASOUND EXAMINATION C.J. Boyd III, M.D., PGY III Department of Obstetrics and Gynecology Faculty Advisors: James Maher, M.D., V. Daniel Castracane, Ph.D.

### INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD), the most well known cause of liver dysfunction in the United States, has a well-defined association with obesity and diabetes. The inability to metabolize lipids and glucose leads to central adiposity. The accumulation of fat in the liver leads to inflammation by several inflammatory markers, causing insulin resistance.

In a population of primates, it was discovered that a high fat diet in one pregnant population compared to a regular non fatty diet in another, led to NAFLD in the high fat diet population as well as in their offspring, particularly in the third trimester.

The aspect of NAFLD which has not been investigated at this point is its role in the fetus. The primary goal of this study is to assess for NAFLD in the fetus through ultrasound evaluation. Unfortunately, the standard ultrasound studies used in assessing NAFLD are not applicable in fetal assessment. This preliminary study was used to identify the best fetal reference organ with which to compare the fetal liver.

### **METHODS**

18 gravid females were selected from the Texas Tech University Women's Health Clinic in Odessa, TX. The inclusion criteria included singleton gestation, 3rd trimester gestation, less than 35 years of age, and absence of gravid or non gravid disease conditions, normal BMI, and less than 30 pounds of weight gain in pregnancy. They were consented for a sonogram in pregnancy at gestational age of 32-38 weeks. A single perinatologist was present for the performance and evaluation of each scan. Multiple tissue histograms were evaluated within each of the following structures: liver, lung, kidney, spleen, and adrenal gland. There were two organs in each plane when the tissue histograms were obtained. Three histograms were obtained for each organ and averaged. A ratio was then identified between the liver and the target organ.

#### RESULTS

A total of 19 patients were enrolled in the study. One hundred eighty images were analyzed. Because it was a feasibility study and the first of its type, there were no p values able to be identified. The patients were scanned with a 4 MHz probe. The medians between axial and sagittal planes for each organ had distinct values. The standard deviations for each organ and its plan ranged from 10.91 to 15. When the liver to target organ ratios were calculated, each ratio had a distinct value. Standard deviation ranged from 0.14 to 0.31. The ratios of each organ were as follows: liver to lung, 0.86, liver to spleen, 1.03, liver to kidney, 1.36 and 1.50, and liver to adrenal 1.54 and 2.11.

### DISCUSSION

The organs identified for comparison to the liver were used for their proximity to the liver. Each organ assessed in its 2 planes, axial and saggital, appear to have unique tissue histograms, although the significance of the standard deviations cannot be determined at this point. The fetal liver to target organ ratio were unique to each organ. The lowest standard deviations were identified in the spleen and the highest in the adrenal. Tissue histogram was not always feasible in the assessment of the adrenal or lung secondary to fetal position or shadowing. These two organs are, thus, less than ideal for routine fetal evaluation. The spleen, as hypothesized, demonstrated an isogenic ratio and had the lowest standard deviation of all organ ratios, making it the most likely organ to be useful in this study for evaluation of fatty liver disease of the fetus in future studies.

### CONCLUSIONS

This study identified an organ, the spleen, with which the fetal liver may be compared in identifying normal or abnormal fetal liver. It has the least shadowing, the most reproducibility, and is the easiest organ to routinely assess. It also had the lowest standard deviation of all ratios that we have assessed. We anticipate that the fetal liver will obtain a decreased tissue histogram echogenicity if fatty liver disease is identifiable, but this will require further clinical assessment. Further studies following this study include evaluation of fetal fatty liver in the antepartum and postpartum period, differences in evaluation using differing probe frequencies, and differences in these patients when evaluated at differing gestational ages in the third trimester.

# A RANDOMIZED COMPARISON OF DIFFERENT MEDIUMS IN THE ADMINISTRATION OF VAGINAL MISOPROSTOL IN TERM INDUCTIONS OF LABOR

Madeline Manning Meurer, D.O., MBA, PGY II Department of Obstetrics and Gynecology Faculty Advisor: Martin Caliendo, M.D.

### **BRIEF BACKGROUND**

Misoprostol is a synthetic progstaglandin E1 originally intended for treatment of peptic ulcers. However, one of the drug's other properties is causing cervical change and contractions in pregnant women. Misoprostol, or Cytotec, is now commonly utilized world wide as a cervical ripening agent, among its other uses. Currently, there is variation of how the drug is placed in the posterior vaginal fornix in dosages, schedule, and mediums. Misoprostol tablets are produced in 100 microgram tablets, and are broken into halves or quarters for administration of 50 micrograms or 25 micrograms, respectively. Due to the small size of the tablets, different methods have been theorized for optimal absorption. During the labor process, the progression of cervical dilation and effacement is monitored by physicians by a sterile vaginal exam. Sterile hydroxyethyl gel (K-Y jelly) is used due to patient discomfort of the exam. Since K-Y jelly is readily available in a Labor and Delivery unit, it is common place for physicians to use this medium for placement of the misoprostol tablet. Also, It has been previously proven that misoprostol tablets liquefy better in acetic mediums.

### **HYPOTHESIS**

The purpose of this study is to compare the efficacy and safety of placing vaginal misoprostol as an intact tablet alone (or "dry"), in sterile K-Y jelly, or sterile vinegar and hypothesize no statistically significant difference in the outcome measures.

### **METHODS**

• Study population: Women in labor and delivery unit of Medical Center Hospital, seen by Texas Tech University Health Sciences Center of the Permian Basin. Women who will be included are singleton pregnancies at term who require cervical ripening for an induction of labor. Indications include, but are not limited to: post dates, pre-eclampsia, diabetes mellitus, pregnancy induced hypertension, or oligohydramnios. Exclusion criteria include patients attempting a trial of labor after cesarean delivery, premature rupture of membranes, spontaneous rupture of membranes, or vaginal bleeding.

• Study design: Patients will be counseled and evaluated for suitability for cervical ripening and informed consent obtained. The women will be randomly assigned to three groups 1) dry misoprostol tablet 2) misoprostol placed in K-Y jelly 3) misoprostol soaked with vinegar. The physician who administered the treatment will not be blinded. Cytotec 25 microgram tablets will be used, placed every 4 hours. In each of the arms, the Cytotec tablet will not be crushed, or broken into smaller pieces, with the intent to keep the tablet intact. The Cytotec tablet will be placed in the posterior vaginal fornix. A sample size of N=249 (n=83 in each group) will be sufficient to conclude an alpha =0.05 significant difference in the associated 1-way ANOVA with 80% power.

### **EXPECTED RESULTS**

Data to be collected will be age, parity, gestational age, indication for delivery, Bishop score before treatment, and Bishop score after each dose completed. Outcome measures will be cervical ripening to active labor, need for oxytocin, cesarean delivery, and uterine hyperstimulation with fetal heart rate changes. Active labor will be defined as cervical dilation of greater than or equal to 4 centimeters. A log transformation may be employed in the likely event that the times to active labor exhibit a large positive skew (skew >1). If the aforementioned 1-way ANOVA is significant, Dunnett's test will be used to compare the two study groups to the control group as a post-hoc procedure and 95% confidence intervals for the average time to active labor will be presented and plotted in a side-by-side fashion.

### SIGNIFICANCE

The study will determine if a difference exists of efficacy or safety between different methods of cytotec placement.

# EXTERIORIZATION VS IN SITU REPAIR OF HYSTEROTOMY IN OBESE POPULATION. Author: Sarah Burke, M.D., PGY II Department of Obstetrics & Gynecology Faculty Advisor: Martin Caliendo, M.D.

### BACKGROUND

At the time of cesarean section, the hysterotomy can be closed one of two ways. The first is known as in situ repair, in which the hysterotomy is closed while the uterus remains in the abdominal cavity. The second way is known as exteriorization, in which the uterus is removed from the abdominal cavity for closure of the hysterotomy. Proponents of exteriorization claim that exteriorization provides better visualization for closure, as well as decreased operating time 1,2,5,7, blood loss 2,6,8, febrile mortality and length of stay. Several studies have compared these two methods with differing conclusions. Several studies demonstrate decreased blood loss and operating time with exteriorization, however a recent Cochrane review concluded that there is not advantage to exteriorization compared with in situ repair. While these methods have been compared and studied multiple times, there has never been a study that looked at these methods in an obese population. The increased subcutaneous tissue can make exteriorization and subsequent replacement back into the abdominal cavity, technically difficult in obese patients. Given the increasing number of obese patients seen in most patient populations, this is data that would likely be relevant to most practicing physicians.

### **OBJECTIVES**

This study aims to compare in situ vs exteriorization of the uterus for hysterotomy repair in obese population.

### **STUDY DESIGN/METHODS**

Pilot study for planned randomized-controlled trial. Plan to study pregnant patients with BMI>30 who undergo low-transverse cesarean section with phannenstiel skin incision. The patients will be randomized to in situ vs exteriorization of the uterus for hysterotomy repair. Variables to be studied include total operating time, time to close hysterotomy, number of additional sutures needed to achieve hemostasis, post-operative change in hemoglobin, post-operative analgesic requirements, post-operative nausea and vomiting and need for post-operative transfusion.

### **HYPOTHESIS**

We hypothesize that in patients with BMI greater than 40, in situ repair will lead to decreased hysterotomy repair time, decreased change in post-operative hemoglobin, decreased number of additional sutures need to achieve hemostasis, and decreased need for post-operative pain and nausea medication.

### **PROJECT PROGRESS**

We are currently working on obtaining a power analysis and IRB submission.

# PREVENTING PRIMARY CESAREAN SECTION: A QUALITY IMPROVEMENT STUDY

Brittney Brothers, M.D., PGY I Co-author(s): Jonathan Lugo, M.D., PGY 2 Department of Obstetrics and Gynecology Faculty Advisor: Martin Caliendo, M.D.

### BACKGROUND

Over the past 20 years, the cesarean delivery rate in the United States has dramatically increased and approximately one in three pregnancies are now delivered by cesarean. Of those women who undergo a primary cesarean delivery, about 90% will go on to have a repeat cesarean. There is an increased risk of maternal complications with cesarean section and possible serious implications for subsequent pregnancies, especially with multiple cesarean deliveries. An effective strategy to attempt to reduce maternal morbidity associated with cesarean section is to make a concerted effort as a specialty to safely avoid primary cesarean delivery.

### OBJECTIVE

This is a quality improvement study with the purpose of assessing a change in the primary cesarean section rate among low risk, nulliparous, singleton, term, vertex deliveries at Medical Center Hospital for patients of Texas Tech University Health Sciences Center of the Permian Basin after the implementation of a standardized labor management protocol based on data from the safe labor consortium.

### **METHODS**

A formal educational lecture will take place for the Texas Tech University Health Sciences Center of the Permian Basin Obstetrics and Gynecology residents and faculty providing information about the standardized labor management protocol for low risk, nulliparous, singleton, term, vertex pregnant patients based on recommendations from the safe labor consortium data. The protocol definitions will include:

Active labor: Greater than or equal to 6 cm dilation

- First stage arrest: Greater than or equal to 6 cm dilation with membrane rupture and greater than 4 hours of adequate contractions (>200 Montevideo units) with no cervical change OR greater than 6 hours of inadequate contractions with no cervical change

- Second stage arrest: No descent or rotation for 4 hours or more in nulliparous women with an epidural OR 3 hours or more in nulliparous women without an epidural

Medical records will be reviewed and data collected for 1 year before and after the implementation of this standardized protocol to determine cesarean section rate in the study patient population for our program. Additional data will be collected including patient demographics, age, BMI, induction versus spontaneous labor, gestational age, prenatal care, type of anesthesia, cervical exam at time of admission as well as at time of arrest if applicable, time in latent versus active labor, Cytotec use for cervical ripening, Pitocin use for induction or augmentation, complications, and Fetal Heart Tracing by NICHD category. This data will be used for quality improvement as well as possible follow up studies.

### **EXPECTED RESULTS**

We expect to find a decrease in Texas Tech University Health Sciences Center of the Permian Basin Obstetrics and Gynecology's primary cesarean section rate in low risk, nulliparous, singleton, term, vertex deliveries after the initiation of the aforementioned standardized labor management protocol based on data from the safe labor consortium.

#### SIGNIFICANCE

An effort to reduce the primary cesarean section rate may have a significant effect on reducing maternal morbidity and would be an important quality improvement for our institution.

# **24th Annual** *Permian Basin Research Day* POSTER PRESENTATIONS



# EVOLUTION OF THE MECHANISM OF BIRTH: LESSONS FROM THE BABOONS (PAPIO SPP)

Robert Bechtel1 Natalia Schlabritz-Lutsevich1, James Maher1,, Gene Hubbard2 and Edward Dick3.

1Texas Tech University Health Sciences Center of the Permian Basin 2 University of Texas Health Sciences Center San Antonio

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**INTRODUCTION:** The mechanism of human labor and delivery is an important question in obstetric practice. Understanding of the mechanism of human labor is critical for development of the methodologies for prevention of preterm deliveries and complications of vaginal deliveries. Delivery in humans involves a complicated mechanism of rotations of the fetus during the move through the maternal pelvis. Several points of pressure from the evolutionary view have been suggested to explain the complicated birth process in humans and are associated with changes in the pelvic bones and muscle architecture: increased fatness of the infant, increased brain size in the fetus, and the constrains of the straight posture and bipedalism.

Baboons (Papio spp) and other Old World non-human primates share similarities with humans regarding fetal and placental development and pregnancy-related complications. Information about the mechanism of birth in these species is sparse.

These data are important for developing fetal interventions and understanding the mechanism of human birth.

**MATERIAL AND METHODS:** We thought to add information to the described mechanisms of birth in Papio spp, based on the pathology records and observation in a large baboon colony during an eight year period.

**RESULTS:** Our observational study showed that in baboons fetal presentation at birth is usually facial. The presentation of the fetus during pregnancy is vortex, occipital or breech. The amount of the amniotic fluid is significantly less at the end of gestation, as compared to humans. In cases of dystocia, the fetal weight was in the higher percentile of fetal weight for baboons.

**DISCUSSION:** Despite the fact that human birth is considered more traumatic compared to other non-human primate species, we previously reported a higher rate of birth–related trauma as a cause of stillbirths in baboons as compared to humans. It is difficult to estimate the number of perinatal losses due to breech presentation in baboons. Based on our published data, the hip circumference in fetal baboon is less than abdominal, chest and head circumferences. However, since the breech presentation is mixed (with feet and buttocks as presenting parts), the total circumference could be comparable with head circumference.

**CONCLUSION:** The mechanism of birth in non-human primates does not allow natural delivery in the occipital, normal for human, presentation, while occipital presentation is recorded early in gestation in these species. This data is another conformation that human babies are delivered prematurely from the evolutionary point of view. The more elaborative mechanism of birth in humans might be an adaptation for fetal brain protection at delivery.

# INCREASING PREVALENCE OF C DUBLINIENSIS IN NON-IMMUNOCOMPROMISED PATIENTS WITH RECURRENT VAGINAL CANDIDIASIS Emily Cendrowski, MS III Co-author(s): Gillian Graham, MS IV; William Meachum, R.A. Department of Obstetrics and Gynecology Faculty Advisor: Gary Ventolini, M.D.

### **PROBLEM STATEMENT**

The prevalence of vaginal candidiasis (mostly C. albicans) has dramatically increased in recent years. Also other pathogenic and resistant to commonly used antifungal agents species began to emerge. Among these is Candida dubliniensis (described in 1995 on HIV positive patients in Dublin, Ireland). It is dimorphic yeast of the genus Candida, phenotypically similar but genotypically distinct to C. albicans with a distinct phylogenetic cluster in DNA fingerprinting. These fungi form dark green colonies on chromogenic Candida agar plates and are identified by Bichro-Dubli latex agglutination test and by not surviving cultured above 42 °C. C. dubliniensis has a decreased ability to form hyphae but form chlamydospores (in pairs, chains, and clusters). Additionally an enhanced adherence to vaginal epithelial cells and an increased production of aspartic proteinases explains why is associated with vaginal candidiasis. C. dubliniensis has the ability to rapidly develop resistance to fluconazole (resistance mediated by a multidrug transporter rapidly mobilized in vitro after fluconazole exposure). Retrospective studies have revealed that C. dubliniensis had been commonly misidentified as Candida albicans; therefore a proper identification is mandatory in patients with recurrent vaginal candidiasis.

### METHODS

To report the prevalence of C. dubliniensis in West Texas USA we review a database of 60 patients with recurrent vaginal candidiasis (positive fungal culture and microscopic photograph of wet mount). Each patient had a wet mount photograph obtained at the time their fungal culture is submitted. Reviewing and reporting de-identified microscopic photograph was not considered to require IRB approval by TTUHSC IRB guidelines.

### RESULTS

Six microphotographs from 6 different patients were identified and matched as positive cultured C. dubliniensis. The microphotographs demonstrate abundance of chlamydospores in pairs, chains, and clusters and at the tip of short pseudohyphae.

### CONCLUSIONS

We are reporting a high prevalence (10%) of C. dubliniensis in non-immunocompromised patients with recurrent vaginal candidiasis in West Texas USA. Since other countries in the world are increasingly reporting this resistant yeast, a proper identification is mandatory in patients with recurrent vaginal candidiasis.

# INTEGRATED OUT-PATIENT DIABETES CARE PROGRAM: IMPACT ON DIABETES CARE AND MANAGEMENT IN A FAMILY MEDICINE RESIDENCY TRAINING CLINIC

Linda Esteban, M.D., PGY I Karla Toledo-Frazzini, M.D., PGY III Faculty Advisor: Jamal Islam, M.D., MS

### BACKGROUND

Owing to the complex medical and social nature of diabetes, physicians and patients often fail to take care of necessary outcome measures. In September 2013, the Texas Tech Family Medicine clinic integrated a Diabetes Care Program within its outpatient family health center, utilizing a team of family physicians, residents and dedicated nurses. We would like to hypothesize, that the implementation of this integrated Diabetes Care Program will improve health outcome measures that are vital in the care of the diabetic patient.

### OBJECTIVE

To determine the effect of the integrated Diabetes Care program on glycosylated hemoglobin, blood pressure and LDL-cholesterol levels.

### **RESEARCH DESIGN**

Retrospective cohort study

### SUBJECTS/SETTING

500 adult patients with Type 2 diabetes seen at the Texas Tech FM clinic 3-6 months before and at least 3-6 months after the implementation of the Diabetes Care Program.

### **METHODOLOGY**

Primary endpoint data, will include iHbA1c, to monitor and evaluate treatment pre and post implementation, Secondary endpoint data will include BP levels and LDL-C levels pre- and post-implementation. Data will be gathered via standardized abstraction forms after IRB approval.

### RESULTS

We expect an improvement in the patients' HbA1C, blood pressure and LDL-C levels after 3-6 months of implementation of the program.

### SIGNIFICANCE

This study shall be significant in determining the impact of meeting core measures for Diabetes, emphasizing the necessary multi-disciplinary approach in the care of diabetics and possibly to identify barriers to adherence and treatment failures.

# SPONTANEOUS ANTEPARTUM SUBCAPSULAR HEMATOMA OF THE FETAL LIVER: A CASE REPORT AND REVIEW OF THE LITERATURE Peter Hsu M.D. PGY III Co-author(s): Brittany Van Beek, MS IV Faculty Advisors: James E Maher, M.D. MFM, Randall T Kelly, M.D. MFM

### BACKGROUND

Obstetric Ultrasound screening often detects unsuspected fetal anomalies and abnormalities, but the clinical implications of the ultrasound imaging is sometimes unclear. This ambiguity may cause maternal anxiety over benign conditions and may lead to unnecessary intervention by treating physicians. We describe a case where a fetal cystic abdominal mass was discovered on ultrasound. A literature review was completed and discussed

### CASE

30-year-old G2P1 Hispanic female at 32 weeks gestation. Prior ultrasounds were unremarkable. The patient had a benign past medical history and denied abdominal trauma. The ultrasound revealed a cystic RUQ mass in the fetal abdomen measuring 46x27x14mm. The mass demonstrated lacy internal echo texture and slightly irregular borders. It was intimately associated with the right lateral border of the liver and moved with diaphragmatic excursion during fetal respirations. Follow-up at 33 and 35 weeks demonstrated evolution of the ultrasound characteristics of the cystic mass and gradual diminution in size. By 35 weeks, the cyst was 30x13x11mm and the rim of the lesion had become echo bright and circumscribed a serpigenous hyperechoic border. There were complex internal echoes inside the cystic lesion consistent with a resolving hematoma and organizing blood clot. After consultation with pediatric surgery, plans were made for a controlled delivery with the induction of labor at 39 weeks gestation.

### **CASE POST-DELIVERY**

Physical exam and labs were unremarkable (No cutaneous hemangiomas). Ultrasound performed on day 1 to evaluate the cystic liver mass found an oval hypoechoic nodule with complex internal echoes measuring 7x18 mm in the right lobe of the liver abutting the liver capsule. Also noted was a homogeneous echogenic structure measuring 10x20 mm that was consistent with a hemangioma. Color flow Doppler evaluation of this area demonstrated no evidence of vascular flow within either nodule. The baby had an unremarkable neonatal course and was discharged home for scheduled follow-up with pediatrician.

### CONCLUSION

A case where a fetal cystic abdominal mass was discovered on ultrasound following a previously unremarkable 20-week scan. We could not find a prior report of antenatal Subcapsular hematoma (SCH) of the fetal liver in the literature; however, the location and ultrasound characteristic of the cystic mass closely mimic the findings of a SCH of the liver. Sequential evaluation of the cystic mass showed evolution of the ultrasound characteristics consistent with a resolving SCH of the fetal liver. Pregnancy culminated in a successful vaginal delivery. The presented case was a diagnostic challenge that highlighted an interesting clinical finding of an antenatal SCH in the fetal liver along with its postnatal clinical correlations. Follow up of antenatally detected lesions is important because there are reports of lethal sequelae from undetected hepatic hemangioma in early childhood.

# MANAGEMENT OF NON-AMPULLARY DUODENAL ADENOMAS IN PATIENTS WITH FAMILIAL ADENOMATOUS POLYPOSIS (FAP) AND NON-FAP PATIENTS: SHOULD WE MANAGE THEM DIFFERENTLY? Gandhi Lanke, M.D., PGY II Department of Internal Medicine

### BACKGROUND

Non-ampullary duodenal adenomas are either sporadic or associated with a hereditary syndrome such as familial adenomatous polyposis (FAP). Duodenal adenomas are common in this syndrome, found in approximately 80 to 90% of patients.

### OBJECTIVE

The aim of this study is to compare characteristics of sporadic and FAP-associated duodenal adenomas.

### **METHODS**

This study was approved by the institutional review board. This was a retrospective review at a single center tertiary care institution. Subjects were identified from a pathological database. Subjects with ampullary adenomas only and with less than 2 month follow up were excluded. Data were obtained via review of medical records.

### RESULTS

A total of 213 subjects were identified. Of those subjects, 117 subjects had FAP and the remainder were considered sporadic. Median age at diagnosis was 40 and 67 for subjects with FAPassociated adenomas and sporadic adenomas, respectively (P<0.0001). Length of follow up was  $75\pm67$  months for FAP subjects and  $31\pm30$  months for subjects with sporadic adenomas. At time of last follow up, 87.2% of those patients with FAP-associated adenomas had undergone colectomy versus 13% in the sporadic adenomas (P<0.0001). FAP subjects were more likely to have multifocal disease within the duodenum (69% vs 33%, P<0.0001). On average FAP subjects underwent 6.5 endoscopies during the follow up period, and those with sporadic adenomas underwent 5.3 endoscopies. On initial pathology, there were 71 tubular adenomas (TVA), 15 of

which had dysplasia (4 with low grade dysplasia (LGD) and 12 with high grade dysplasia (HGD)), within the FAP group. There were 48 TAs, 47 TVAs, and 1 villous adenoma, 14 of which had dysplasia (2 with LGD and 12 with HGD), in the sporadic group. 14 of 117 (12%) with FAP and 33 of 96 (34%) subjects with sporadic duodenal adenomas underwent endoscopic mucosal resection (EMR). Histologic progression to dysplasia or cancer was seen in 27 (23%) subjects with FAP and 13 (14%) with sporadic disease (P=0.08). 6 patients within the cohort progressed to cancer, 2 within the FAP group and 4 within the sporadic group. Range of time to progression in those with cancer was 3 to 161 months. Median time to progression was 99.0 months in the FAP group and 122.2 months in the sporadic group.

### CONCLUSIONS

Those patients with FAP were significantly younger, more likely to have ampullary

Involvement, and more likely to have multifocal disease. Median time to progression to dysplasia or cancer as well as percent of subjects who progress is similar among FAP-associated and sporadic adenomas. Progression to cancer is infrequent, however unpredictable, and an interval for surveillance cannot be recommended given the current data.

## PLUMMER- VINSON SYNDROME PRESENTING AS SQUAMOUS CELL CARCINOMA OF ESOPHAGUS Author: Gandhi Lanke, M.D., PGY II Department of Internal Medicine

### ABSTRACT

Plummer-Vinson syndrome (PVS) also known as Paterson-Brown-kelly syndrome is a rare syndrome which comprises of iron deficiency anemia, dysphagia and esophageal webs. The pathogenesis of PVS is not clear. Iron deficiency anemia is essential for diagnosis of PVS. There is increased risk of upper aerodigestive cancer if PVS is not treated. About 10% of patients with PVS develop pharyngeal or esophageal cancer. There are no strict guidelines for endoscopic surveillance in patients with PVS. Iron replacement can improve dysphagia and potentially lead to regression of esophageal webs. In our case, patient had long standing dysphagia for years which progressed to squamous cell cancer (SCC) of esophagus by the time she sought medical treatment.

# "DO WE NEED SYSTEMATIC ANTI-COAGULATION AND DUAL ANTI-PLATELET THERAPY FOR FFR CALCULATION?" Mandeep Dhindsa, M.D., PGY III Department of Internal Medicine

### **OBJECTIVES:**

The goal of the Evaluation of Simplified Anti-Thrombotic Therapy for Coronary Fractional Flow Reserve (SMART-FFR) study was to determine whether fractional flow reserve (FFR) could be safely performed with two simplified anti-thrombotic regimens compared with dual anti-platelet therapy (DAT) plus anticoagulation, including DAT alone without procedural anticoagulation, and single anti-platelet therapy with aspirin plus procedural anticoagulation.

### BACKGROUND

Fractional flow reserve is commonly used to assess the functional significance of intermediate coronary artery stenosis. The optimal anti-thrombotic regimen had not been studied for FFR calculation. Methods

A total of 300 patients undergoing FFR for evaluation of intermediate coronary lesions during elective angiography were randomized in three groups: Group 1: DAT, Group 2:DAT plus bivalirudin, and Group 3: aspirin plus bivalirudin. The clinical outcomes, incidence of thrombotic and bleeding complications were compared between groups, as well as post-procedure troponin levels.

### RESULTS

There were no thrombotic complications in any group. Clinical outcomes, post-procedure, troponin levels and TIMI major and minor bleeding scores were not significantly different among the three groups studied.

### CONCLUSION

FFR appears to be safely performed using a simplified anti-thrombotic strategy including patients pre-loaded with DAT without the need for procedural anticoagulation, and with single anti-platelet therapy with aspirin plus anticoagulation with bivalirudin in low risk coronary lesions.

# AN INFANTILE CAPILLARY HEMAGIOMAS RESPONDED TO SYSTEMIC BETA BLOCKER TREATMENT AND LITERATURE REVIEWS Bhavana Mocherla M.D., PGY II Department of Family Medicine Faculty Advisors: Bhargavi Kola M.D., George Rodenko, M.D.

### INTRODUCTION

Capillary hemangiomas are the most common orbital tumors in children that affect 1% to 3% of newborns. Capillary hemangiomas usually involve in orbit, lids, or orbit & lids. Lesion is predominately presented in females and typically appeared at birth or within the first two months of life. The superior orbit and lids were sites of predilection. Pure proptosis caused by a deep orbital tumor without an anterior component was found only in 9% of all cases.

### **CASE PRESENTATION**

Eight weeks old Hispanic female was brought to our office by her mother for two months well baby check up. Patient is a healthy full term female, born at 39 weeks, weighted 9 pounds 3 ounces, without family history of congenital or vascular disease. Mother noticed prominent clear discharge from patient's right eye for 2 weeks. Physical examination was within normal limits during this office visit. A nasolacrimal stenosis was suspected and the patient was referred to a pediatric ophthalmologist for further evaluation. Three weeks later, patient had developed mild right eye proptosis when she was seen at ophthalmologist's office. Magnetic resonance imaging (MRI) of the brain showed a capillary hemangioma, predominating at the inferolateral aspect of the right orbit, extending superiorly and medially, but not reaching the medial rectus or superior rectus muscles. It abuts the posterior and inferior aspect of the right globe. It does not deform the globe. Patient was started with propronolol 3 mg/kg/day initially then tapered to 2 mg/kg/day with a close follow up.

Repeat MRI (Figure A-F) two months later showed slightly reduction in bulk of hemangioma. The mass effect / proptosis related to the lesion on the right globe appear improved. Clinically the proptosis was resolved 2 months after propranolol treatment. However, since MRI did not show complete remission, the propranolol of 2 mg/kg/day was resumed and patient is still on it now. A repeat MRI will be done in 8-12 months.

### CONCLUSION

Ultrasound and color Doppler imaging are useful modalities in the diagnosis of intraorbital and periorbital hemangiomas. However, MRI is a more important and complementary study for the delineation and diagnosis of malformations. In addition, MRI is also very helpful for choosing the appropriate clinical approach (oral medicine, local injection or surgery) and follow-up.

# BILATERAL ORBITAL MYELOID SARCOMA PRECEDING ACUTE MYELOID LEUKEMIA IN AN ADULT: CASE REPORT AND REVIEW OF THE LITERATURE Osama Mukarram, M.D., PGY I

Co-author(s): Jesus Vera-Aguilera, M.D., PGY II, Prathiba Nutalapati, M.D., PGY I, Mary Mok, M.D., PGY I, Anushi Bulumulle, M.D., PGY I Department of Internal Medicine

### INTRODUCTION

Acute myeloid Leukemia is typically a disease of the older population presenting mostly in the fifth decade of life. Myeloid sarcoma is rare presentation of acute myeloid leukemia previously well reported in children and younger population. We present an unusual case of retro-orbital myeloid sarcoma as an initial presentation of acute myeloid leukemia in a 43 year old Caucasian male.

### **CASE REPORT**

In the present case, a 43-year-old male with prior unsuccessful retro-orbital masses biopsies presented with pancytopenia, further studies revealed the diagnosis of AML. The presence of retroorbital masses preceding AML is a rare, to our knowledge since 1993 a total of 11 cases of granulocytic sarcoma preceding AML in adults have been reported, most of them presenting with the cytogenic t(8:21) feature with fair prognosis, in the present case we describe a very aggressive case of myelomonocytic leukemia positive for CD34 and CD 117 and rearrangement of chromosome 11q23 involving MLL gene with fatal outcome. Differential diagnosis in adults who present with similar symptoms is broad and require a high index of suspicion; in a recent review performed by Priego 2012, differential diagnosis should include inflammatory/metabolic disease (orbital inflammatory pseudotumour, thyroid orbitopathy, sarcoidosis) and neoplasm (lacrimal tumors, lymphoma and metastasis). However, the clinical behavior and response to therapy seem not influenced by age; sex; anatomic site; de novo presentation or clinical history related to AML, MDS, or MPN; histotype; phenotype; or cytogenetic findings.

### CONCLUSION

Granulocytic sarcoma or Myeloid sarcoma is an uncommon malignant neoplasm associated with myeloid leukemia, the differential diagnosis in this age is broad and diagnosis is a challenge, therefore a multidisciplinary approach, an appropriate clinical exam and history accompanied by a high index of suspicion are needed for proper diagnosis and treatments to avoid fatal outcomes.

# ACTINOMYCES IS A POTENTIAL CAUSE OF PERFORATED AND GANGRENOUS APPENDICITIS Ravi Patel, MS III Department of Surgery Faculty Advisor: Dr. Saju Joseph, M.D.

### BACKGROUND

Acute appendicitis can present with a wide range of symptoms from an indolent course to severe peritonitis and overwhelming sepsis. The patients clinical status often indicates the severity of the disease and if perforation and diffuse peritonitis is present. While there have been many attempts to identify patients who may develop sepsis and peritonitis, little has been found as to the cause of severe cases.

Actinomyces, a gram positive anaerobe, is part of the normal flora of the alimentary tract and vagina, however when pathologic it causes severe inflammation, perforation, and possible intestinal obstruction. Actinomyces can easily be identified by the formation of sulfur granules or clusters of filamentous branching rods. We hypothesized that Actinomyces could be a causative agent in patients who present with perforated/gangrenous appendicitis.

### **METHODS**

We did a retrospective review of the 102 appendix specimens removed for acute appendicitis at our institution over an 8 month period. Specimens were reviewed by a pathologist to identify sulfur granules or Actinomyces species. Demographic data and lab values were reviewed for all patients. Specimens were categorized as either gangrenous/perforated or acute inflammation.

### RESULTS

There were a total of 20 cases of perforated/gangrenous appendicitis amongst our 102 cases (19.6%). For patients with gangrene/perforation (n=20) there were 7 cases of Actinomyces identified (35%). For the 82 patients with acute inflammation, Actinomyces was identified in 6 specimens (7%). p=0.0008 The average WBC level for all patients in our sample was 14.5. No clinically significant difference was found in WBC levels between gangrenous/perforated and acutely inflamed (14.4 vs 14.5). However, patients with Actinomyces had a slightly higher average WBC of 15.3

#### CONCLUSIONS

In patients with gangrenous/perforated appendicitis there is a 35% chance that Actinomyces is present in the appendix. While in patients without perforation/gangrene there is a 7% chance of identifying Actinomyces. Furthermore, patients with Actinomyces were found to have a slightly higher WBC level then the patients without. This data suggests that Actinomyces may be a cause of gangrenous/perforated appendicitis. Since Actinomyces is best treated with a long course of Penicillin based antibiotics, patients with gangrene/perforation may benefit from penicillin based treatment for longer than the standard 2 week course. Finally, Actinomyces may account for failure of non-operative management.

### **QUESTION 1:**

Actinomyces is present normally in all of the following except: Mouth Vagina Ear\* GI tract

### **QUESTION 2:**

Actinomyces is: Gram negative anaerobe Gram negative aerobe Fungus Gram positive facultative anaerobe\*

# CASE REPORT: RECURRENT ISOLATED SLEEP PARALYSIS IN AN ADOLESCENT PATIENT

Tamareál N. Ross, M.D., PGY I Department of Pediatrics Research Advisor: Bhargavi Kola, M.D.

### BACKGROUND

Recurrent isolated sleep paralysis is characterized by repeated episodes of the inability to move voluntarily upon awakening from sleep while consciously aware of one's surroundings without the diagnosis of narcolepsy. Although it is believed sleep paralysis poses no serious health risk, it can be terrifying, especially in the pediatric population.

### OBJECTIVE

Because it is a rare phenomenon in the general population and even less in the pediatric population, we present a case of recurrent isolated sleep paralysis in an adolescent in order to add to the limited data on the prevalence, diagnosis, and treatment of sleep paralysis in the pediatric population.

### **CASE PRESENTATION**

A 15 year old female presents with a history of lightheadedness, a headache, vomitus, blurry vision. She previously had episodes of not being able to speak or move eyes upon awakening from sleep, while consciously aware of her surroundings over the course of a year. The initial EEG showed rare frontal sharp waves. On MRI, there was a lesion in the posterior pituitary, causing a mild convexity to the roof determined to be a non-functioning pituitary adenoma. The patient was started on Topamax, however, it was discontinued after one dose as it was determined that the symptoms were inconsistent with a seizure-like activity. After the presenting episode, the patient began experiencing daily headaches, localized to the left frontal area and extending to the left side of the head. She was prescribed 600mg magnesium daily and started on an SSRI, in addition to increasing fluid intake to 2L a day, eating three meals a day with snacks, and eight hours of sleep per night. The patient's recurrent isolated sleep paralysis subsequently subsided. She is on surveillance every 6 months with MRI by her pediatric neurologist.

### DISCUSSION

While it is suggested that there may be a hyperactivity of the cholinergic connections or decreased activity of the serotonergic inhibitory connections in the sleep-wake cycle regulatory centers, the exact pathophysiology of recurrent isolated sleep paralysis is unknown. However, behavioral modification, such as increased nocturnal sleep of at least eight hours at a regular scheduled time, is suggested. It has shown a perceived benefit, in at least one similar case report in a college student with recurrent isolated sleep paralysis. Moreover, low dose tricyclic agents, such as clonidine or clonazepam, is suggested to be helpful with recurrent episodes. Although these treatments have been suggested, there are no clinical trials to verify their effectiveness.

### SIGNIFICANCE

Because recurrent isolated sleep paralysis is rare in the pediatric population and there are limited clinical trials to verify the effectiveness of suggestive treatment models, further observational studies, case reports, case studies are needed. With subsequent case reports or case studies, we hope to develop a diagnostic tool or parental advisory for recurrent isolated sleep paralysis in children who may present with a history of lack of sleep, nightmares, sleep disturbances, irritability, behavioral problems, learning difficulties, motor vehicle accidents in teenagers who drive, and poor academic performance.

# TRANSLATIONAL RELEVANCE OF "ENDOCANNABINOIDOME" STRUCTURE IN NON-HUMAN PRIMATES.

Marco Ruiz, Natalia Schlabritz-Loutsevitch, M.D., Ph.D., Josee Guindon

### INTRODUCTION

The endogenous cannabinoids, or "endocannabinoid" system (ECB) were identified by research on the effects of Tetrahydrocannabinol (THC). Recent discoveries of the role of endocannabinoids in the regulation of the brain metabolism, adipose tissues, pancreatic beta cells fate and pregnancy maintenance makes this family of molecules an attractive target for pharmacological interventions. The variety of animal models used in endo-cannabinoid research: rodents, ruminant and primates raised the question regarding the translational value of these models for the human applications. Baboons – Papio Spp are well characterized, closest to human primate model to study pregnancy-related questions, ageing and lipid metabolism. The goal of this study was to evaluate the nucleotide composition of ECBs in baboons and compare it to known human genetic variations.

### **METHODS**

Based on the previously reported by our group (Placenta. 34(9), p A80),

analyses of the nucleotide structure of components of endocannabinoid system, we searched PubMed and Mutation data bases for known genetic variants of the components of ECBs: anandamide, 2-Arachidonoylglycerol, Fatty Acid Amide Hydrolase, Monoacylglycerol lipase, Diacylglycerol Lipase.

### RESULTS

While CB1 receptor showed 100% homology to human sequence, the number of known human SNPs in this receptor was 15 and associated with pre-eclampsia, non-alcoholic fatty liver diseases in polycystic ovarian syndrome, increased microvascular complications of diabetes, obesity, anorexia nervosa, etc. From these phenotypes 12 are well characterized in the baboons, while 3 others documented in the experimental settings. The CB2 receptor showed 96% homology with human sequences, with the differences in the structure of the first and fourth cellular, first, second and forth extracellular regions. The difference in the first cellular region Q63R has SNP analogue in humans, phenotypically associated with celiac disease. The FAAH has 14 identified AA differences with human enzyme, but only two known human mutations, both associated with the obesity phenotype.

### CONCLUSION

The most evolutionary conserved regions in ECBs were paralleled by the increased mutational variability in humans and vice versa. These facts should be taken in consideration by the pre-clinical study design of the pharmacological studies, associated with the application of endocannabinoids.

# PATTERN OF MANAGEMENT OF HEPATITIS C IN A FAMILY MEDICINE RESIDENCY CLINIC ROSARIO SALARZON M.D., PGY III CO-AUTHOR(S): KHALID GHAZY M.D., PGY III, BHAVANA MOCHERLA M.D., PGY III FACULTY ADVISOR: JAMAL ISLAM, M.D., MS DEPARTMENT OF FAMILY AND COMMUNITY MEDICINE

### BACKGROUND

National Health and Nutrition Examination Surveys (NHANES) data from 2003-2010, found that individuals born between 1945-1965 accounted for 81.0% of the total estimated population with chronic HCV infection and the prevalence of those that are HCV RNA positive is at 3.25%. Due to this, several organizations, including the USPSTF, have endorsed the screening of Hepatitis C status in this group of people.

Basic care of these patients consists of an anti-HCV test for screening. Current active infection should be confirmed by an HCV RNA test. Quantitative HCV RNA testing is recommended prior to initiation of therapy and document the baseline viremia. Testing for HCV genotype is recommended to guide selection of the most appropriate antiviral regimen. Previous research showed that screening of Hepatitis C in primary practice is not optimized and once found to have Hepatitis C, patients are not evaluated further for optimal treatment. There is a need to determine the management practices of the primary care providers, and in the process, describe the level of care received by patients with Hepatitis C infection in our clinics.

### OBJECTIVE

To determine the practices and pattern of management of Hepatitis C infection in a Family Medicine residency clinic.

#### **STUDY DESIGN**

Cross-sectional, descriptive.

### SUBJECTS/SETTING

300 patients with Hepatitis C infection, 2008-2013 at TTUHSC FM Residency Clinic in Odessa, Texas.

### STUDY METHODS

Cross sectional study. Data collection with standardized abstraction forms. Demographics, laboratory information on HCV Antibody, HCV RNA, HCV genotype, quantitative RNA, AST, ALT, liver imaging, referrals made

### RESULTS

Rates of HCV infection will be high, follow-up on HCV infected subjects for appropriate diagnostic and referrals will be less than 50%.

#### CONCLUSION/SIGNIFICANCE

This study will be significant in increasing awareness and of how we currently manage patients with Hepatitis C infection and improve our level of care accordingly.

# COMBINED PARASITE DERIVED PEPTIDE GK1 AND PROGRAMMED DEATH LIGAND ANTIBODY (ANTI-PD-L1) THERAPY INCREASED SURVIVAL IN A MELANOMA MOUSE MODEL. JESUS VERA-AGUILERA, M.D., PGY II CO-AUTHOR(S): DIEGO BELTRAN-MELGAREJO M.D., PGY II, CYNTHIA VILLANUEVA-RAMOS M.D., PGY II FACULTY ADVISOR: GARY VENTOLINI M.D.

### INTRODUCTION

Melanoma is the most malignant form of skin cancer, and the incidence of this disease is rising rapidly, especially in the Caucasian population. With the recent discovery of checkpoint receptor inhibitors such as Cytotoxic T LymphocyteAntigen-4 (CTLA-4) and more recently programmed death-1 receptor (PD1) and its ligand (PD-L1) the immunotherapy of cancer entered the new era. The Programmed Death-1 pathway is now recognized to be a major mechanism by which tumors suppress T-cell mediated antitumor immune responses. Studies regarding the PD1/PDL1 pathway suggest that combining therapies targeting tumor mechanisms of immune evasion with activation of normal immune cell may provide optimal treatment strategy. Previous studies in mice have shown that GK1, an 18-aminoacid peptide derived from Taenia crassiceps cysticerci, has the potential to be used as a primary or adjuvant component of chemotherapeutic or immunotherapy cocktails for the treatment of human cancers by stimulation of the proinflammatory cytokines IFN-gamma, TNF-a and the inflammatory chemokine CCL2 (MCP-1) in dose-dependent manners.

### **OBJECTIVES**

In this study, the efficacy for GK1 in combination with Anti-PD-L1 as an adjuvant treatment in a melanoma mouse model was evaluated.

### **METHODS**

Forty mice, 6- to 8-week-old C57BL/6 were injected with 2 X105 B16-F10-luc2. Tumor-bearing mice 20mm3 were separated in four different groups: GK1, Anti-PDL-1, GK1/anti-PDL-1, and control, (10 mice per group). GK1-treated peritumorally until sacrifice day. The anti-PD-L1 treated group injected intraperitoneally (IP) with anti-PD-L1 antibody until sacrifice day. The combined immunotherapy group injected with an antiseptic peritumoral injection of GK1 and anti-PDL-1 until sacrifice day and the control group injected with peritumoral or IP sterile saline. Mice were sacrificed when moribund or lethargic or when they fail to respond to gentle stimuli, and day of death was recorded. All experimental procedures comply with the "Principles of Laboratory Animal Care" and the Guide for the Care and Use of Laboratory Animals (NIH publication No. 80-23, revised 1985) and by the University Laboratory Animal Care Committee at Texas Tech University Health Sciences Center.

#### RESULTS

The GK1 peptide in combination with Anti-PD-L1 demonstrated therapeutic properties in a mouse melanoma model, as treatment resulted in a significant increase in the mean survival time of the treated group of 34 days compared to 23 days in the control group (P< 0.01). Moreover, the combination group demonstrated statistically significant increase of survival compared to GK1 or Anti-PD-L1 alone (P< 0.01).

#### CONCLUSION

The potential for GK1 to be used as a primary or adjuvant component of chemotherapeutic cocktails for the treatment of experimental melanoma was demonstrated in this study for the first time. Further studies to evaluate the direct translational bench-to bed-side translational potential are being performed by our group.

# PRE-RECORDED PRESENTATION

"CASE REPORT: STILLS DISEASE" ENA SHARMA, M.D., PGY II

"ACTINOMYSIS IS A POTENTIAL CAUSE OF PERFORATED AND GANGRENOUS APPENDICITIS" RAVI PATEL, MS III



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