

## 2024 Ob/Gyn Ongoing Research Studies

Our ongoing research endeavors in the Obstetrics and Gynecology department play a pivotal core in not only pinpointing and rectifying healthcare disparities but also in elevating outcomes in maternal and child health and advancing overall women's health. At the core of our mission is the commitment to augmenting access to top-notch healthcare, engaging in impactful community outreach, fostering cultural competence, championing advocacy, and forging collaborative partnerships. Through these concerted efforts, we aspire to leave an enduring positive imprint on the health landscape of the vibrant city of El Paso, Texas.

### 1. Perceptions of Mesh Use for Pelvic Floor Surgery in the Latina Population at the U.S.-Mexico Border

- a. **Description:** Limited studies have investigated patients' knowledge or perceptions of mesh use for POP or UI surgery. Brown et al found that greater levels of patient education are needed given the degree of misconceptions regarding mesh surgery.<sup>16</sup> Investigators uncovered several misconceptions about mesh use and 57% of patients would avoid surgery using mesh. Important limitations of existing studies are that patients are predominantly White, have higher level of education, speak English only, and surveys are anonymous (which does not allow for correlation between severity of symptoms and perceptions of mesh or willingness to have surgery with mesh). In such an area, it is critical that providers understand their patients' unique attitudes and beliefs to help guide patient education and decision-making, ultimately providing more culturally appropriate care to Latina patients.
- b. **PI:** Pedro A. Maldonado M.D.
- c. **Status:** Ongoing

### 2. Her2/neu expression in cervical dysplasia and cancer

- a. **Description:** Early stage cervical cancer remains primarily treated with surgical intervention, however late-stage disease has few viable options for treatment. HER2/neu is an oncogene which has been found to be mutated in several malignancies and presents a viable target for treatment. Literature regarding HER2/neu expression in cervical dysplasia and cancer is promising, however limited studies and sample sizes limit clinical applicability. This study aims to further expand HER2/neu expression evaluation among cervical dysplasia and cervical cancer patients treated at Texas Tech University Health Sciences Center at El Paso (TTUHSC El Paso) from 2010-2021. Archived biopsy specimens will be evaluated for HER2/neu expression using immunohistochemistry staining. Additionally chart review will be performed to correlate clinical features of the disease. Endpoints of this study will include evaluation of HER2/neu expression as well as correlation with clinical characteristics of disease including grade, stage, and disease response to treatment.
- b. **PI:** Eugene P. Toy M.D.
- c. **Status:** Ongoing

### 3. The Role of Incorporating video Aids into Informed Consent for Hysterectomy

- a. **Description:** Health literacy results from the interaction between the healthcare system and the individuals in it. As healthcare providers, we are responsible for implementing tools and strategies to improve the comprehension of our patient population. During the consent process for a hysterectomy, the surgical removal of the uterus, physicians discuss several important components of care that are essential for surgical candidates to understand, such as the reason for the procedure, the risks involved, the benefits of the surgery, and other treatment options available. Our study explores whether adding a video presentation to the consent process for a hysterectomy will improve patient understanding of the procedure they will undergo, what their options are, and their postoperative satisfaction.
- b. **PI:** Mary Ann Son M.D.
- c. **Status:** Ongoing

### 4. Utility of a Mindfulness-Based mobile application for Women with Overactive Bladder and Depression

- a. **Description:** Overactive bladder (OAB) is a chronic condition that involves urinary urgency/frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology.. There is also evidence that depression and anxiety symptoms may be more prevalent in underserved (predominantly Latina) patients seeking care for urinary incontinence. Mindfulness-based mobile apps may, therefore, prove beneficial in some low-resource areas (such as the southern U.S. border) where there is a growing need for improved access to care and patients have issues with cost, transportation to frequent weekly sessions, and embarrassment about going out in public due to severe OAB symptoms. The purpose of this study is to first describe the prevalence of depression/anxiety in our patients with OAB and then to perform a pilot study investigating the impact of using a mindfulness-based mobile app in a subset of women with OAB.
- b. **PI:** Pedro A. Maldonado M.D.
- c. **Status:** Ongoing

### 5. Physician vs Patient (Self) Administered Ferriman Gallwey Score and its Relation to Androgen Levels: A Prospective

- a. **Description:** Hirsutism is defined as the development of excessive terminal hair growth in a male pattern distribution in women and it affects approximately 5-8% of the population. PCOS, the most common cause of hyperandrogenic hirsutism, is a heterogeneous disorder characterized by hyperandrogenism and chronic anovulation that is associated with multiple comorbidities including metabolic syndrome, depression, infertility, and obesity (Lumezi, 2018). While there are multiple scoring systems to evaluate hirsutism, the current gold standard is the

modified Ferriman-Gallwey (mFG) scoring system. This system can be subjective and has limitations when considering ethnicity, race, genetics, grooming tendencies, and who is performing the survey. By correlating the physician scores with the patient self-reported scores to androgen levels and analyzing which score is most accurate at determining the degree of elevated androgen, this scoring system could be best optimized to the management and treatment of an adolescent female patient suffering from hirsutism.

- b. **PI:** Sireesha Reddy M.D.
- c. **Status:** Ongoing

## 6. Study of ovarian cancer biomarker

- a. **Description:** Ovarian cancer is the deadliest gynecological disease that accounts for approximately 140,000 annual female deaths worldwide and because of the ovarian cancers' highly aggressive nature, the overall survival rate in ovarian cancer patients remains poor despite of recent advances in targeted therapies. We have identified a novel player doppel in tumors and found that doppel collaborates with tumors in creating new blood vessels for them by controlling the actions of VEGF. Since this protein does not express and has no known function in female reproductive organs, we now propose to study the applicability of doppel as a therapeutic biomarker in epithelial ovarian cancer.
- b. **PI:** Sireesha Reddy M.D.
- c. **Status:** Ongoing

## 7. Effect of the phthalates exposure on sex steroid hormones in the Hispanic females having menstrual irregularities

- a. **Description:** Several studies have suggested that women with irregular menstruation have a higher concentration of phthalate plasticizers than women with regular cycles. Irregular menstruation is commonly associated with polycystic ovary syndrome (PCOS). Additionally, new data demonstrate irregular menstruation is associated with disrupted androgen. Underlying mechanisms associated with phthalate concentrations in women with irregular menstruation are not clearly understood. Reconciliation of this knowledge gap and perhaps determining the association of androgen with phthalates would significantly advance the field in providing screening algorithms to provide therapeutic advancements in reproductive endocrinology.
- b. **PI:** Pallavi, Dubey PhD
- c. **Status:** Ongoing

## 8. Association between Vaginal pH on Cervical Dysplasia

- a. **Description:** A study by Teng et al showed a negative correlation between vaginal pH and CIN3+. This could be due to the understanding that increased vaginal pH leads to a decrease in natural epithelial defense mechanisms such as defensins which are antimicrobial peptides and prevent pathogenic proteins from

binding to female genital tract cells. There is a gap in the literature examining an association between vaginal pH and cervical dysplasia. The goal of this study would be to demonstrate a relationship between high vaginal pH and high-grade cervical dysplasia.

- b. **PI:** Eugene P. Toy M.D.
- c. **Status:** Ongoing

#### **9. Evaluating menopausal symptoms in a border population in west Texas**

- a. **Description:** Menopause is a natural event that occurs in the life of all women. The field of menopause management is a relatively new field and our understanding of issues surrounding menopause is still limited and is evolving as data from new studies are published. Most of the studies on menopause so far have been conducted in women of European ethnicity and the findings have been generalized to women of all ethnicities. However, we know that the experience of menopause, symptoms and concerns of women vary between women of different ethnicities due to a variety of causes. The purpose of this study is to gain a better understanding of the issues surrounding menopause in our patient population that is comprised primarily of women of Hispanic ethnicity. This better understanding of menopausal issues in Hispanic women will enable us to develop effective management strategies for these patients.
- b. **PI:** Anjana Nair M.D.
- c. **Status:** Ongoing

#### **10. Evaluating cross-border reproductive healthcare practices in El Paso, TX**

- a. **Description:** Communities along both sides of the U.S.-Mexico border are closely connected, with members of either side crossing frequently for work, pleasure, and other activities, including medical care. Members of border communities are well aware of the practice of seeking medical care on the opposite side of the border, with practitioners citing logistics, financial considerations, convenience, and personal preference all as reasons to seek care in the country one does not reside in. This study seeks to clarify what access to reproductive healthcare patients have, using specific metrics related to contraception, to determine if: patients have adequate care in the United States alone; patients have adequate care but seek some reproductive healthcare services in Mexico out of personal preference; patients have incomplete or inadequate care in the United States and seek reproductive healthcare services in Mexico to fill a gap in care.
- b. **PI:** Anjana Nair M.D.
- c. **Status:** Ongoing

#### **11. Implementing learning tools into an integrated longitudinal curriculum**

- a. **Description:** An OBGYN handbook provided to medical students during their third and fourth years of medical school may help students feel more prepared and confident during their OBGYN rotation. This study aims to explore the potential benefits of such a handbook by administration to medical students of a pre- and post- behavioral confidence survey. Supervisory faculty and residents will also receive a pre- and post- survey in order to analyze if there is a difference in the perception by faculty and residents who oversee the medical students in the levels of their confidence and preparedness.
- b. **PI:** Mary Ann Son M.D.
- c. **Status:** Ongoing

**12. Association of women with clinical features of Polycystic Ovarian Syndrome (PCOS) to a higher prevalence of having biological children diagnosed with neuropsychiatric disorders (NPD)**

- a. **Description:** This study aims to investigate if there is a higher prevalence of neuropsychiatric disorder affected children in women with polycystic ovarian syndrome (PCOS) or clinical features of PCOS. The evidence of PCOS is the highest in Hispanic females, with an average of 12% as compared to a 6% national average. We developed a survey questionnaire for mothers who have PCOS or clinical features of PCOS. The survey asks about their children and any neuropsychiatric diagnoses that they may have had. This study would help us establish a possible association between PCOS and neuropsychiatric disorder diagnosed biological children, and allow us to explore any possible reasons for this link.
- b. **PI:** Pallavi, Dubey PhD
- c. **Status:** Ongoing

**13. Perception Regarding Tdap Vaccination during pregnancy among women living on the US-Mexican border**

- a. **Description:** *Bordetella Pertussis* (also called whooping cough) is a highly contagious disease that causes severe coughing. Whooping cough is most dangerous for infants under 6 months old, who cannot be fully vaccinated. In order to protect infants from getting whooping cough, Tdap vaccine is recommended to pregnant women. Vaccinating pregnant patients is a strategy to protect newborns from pertussis before they are fully immunized. We would like to evaluate the knowledge and attitudes of pregnant women towards maternal vaccination to protect newborns against *Bordetella Pertussis*.
- b. **PI:** Ghislain Hardy M.D.
- c. **Status:** Ongoing

**14. Pessary specific didactic and simulation to improve resident knowledge and comfort with pessary placement**

- a. **Description:** Vaginal pessaries are flexible silicone devices in various shapes used by OB/GYNs to treat pelvic organ prolapse in women such as uterine, bladder or rectal prolapse. Despite their common use, many residents and physicians report feeling that they lack knowledge and training on pessary placement. The purpose of this study is to determine if a pessary specific didactic training session improves resident knowledge and comfort in placing pessaries. A pre and post questionnaire will be used to assess resident knowledge and perception of comfort. The questionnaire will be redistributed 6-months post-didactic to evaluate long-term effect of the didactic session.
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- c. **PI:** Ignacio T. Montoya M.D.
- d. **Status:** Ongoing