Medical Education Foundation of American College of Osteopathic Obstetricians & Gynecologists

"The mission of the MEFACOOG is to foster continuing improvements in women's healthcare. The goals of the MEFACOOG are to support Continuing Medical Education – Undergraduate, Graduate and Postgraduate Research Programs; Faculty Development; and Development of Educational Networks in women's healthcare."

Year of 2022

MEFACOOG ANNUAL REPORT

Inside This Issue

Message from the Chair

Octavia M. Cannon, DO, FACOOG (Dist)

Dear members of the Osteopathic OBGYN Community:

While we are entering the third year of the COVID pandemic, there seems to be a glimmer of light at the end of a tortuous tunnel. On behalf of the MEFACOOG Board, I want to thank you for your continued dedication to medicine and patient care. Further, I entreat you to remember the importance of SELF-CARE. We must support each other; both in and out of the workplace. Physician burnout is real and prevalent. You cannot be of service to others when you are personally unwell. Take time for yourselves.

The mission of MEFACOOG is, "Fostering continuing improvements in women's healthcare". We want to continue to promote our mission and provide awards to our outstanding residents via osteopathic research, posters and reporting at our conferences. This will help us to continue to reinforce and educate everyone on the importance of osteopathic principles and practices to the OBGYN community. Providing excellent educational experiences remains our priority; starting with a strong foundation for our medical students then continuing through postgraduate training and beyond! It is our hope that you will consider making a donation to MEFACOOG. There are many payment options for you to help us perpetuate our mission and strengthen our family. We appreciate you! Be well, be kind and be good to yourselves.

Sincerely yours,

Octavia M. Cannon D.O.

Octavia M. Cannon, DO, FACOOG(Dist)
MEFACOOG Chair 2022-2023

Message from Executive Vice President

Michael Geria, DO, MS, FACOOG (Dist)

Dear Members of the Osteopathic OB/GYN Community,

Over the past two years, there have been significant changes in the healthcare world, especially in the field of obstetrics and gynecology. The MEFACOOG remains dedicated to quality education and research programs that support your efforts.

Along with the changes in the world of OB/GYN, there have been changes at MEFACOOG. Valerie Bakies Lile resigned from her position as Executive Director of the ACOOG and MEFACOOG. Ms. Bakies Lile served these organizations for over seventeen years. Both organizations wish her the best in her future endeavors.

The newest endowment, the Sages of ACOOG Unity Lecture, will continue to honor a leader in the profession, recognizing their specific areas of expertise and commitment to women's healthcare through relevant educational content. The "Resident Reporter" program will continue its efforts to engage young professionals within the organization.

Engaging young osteopathic physicians is more important than ever in the era of the "Single Accreditation System" of GME. Another way we hope to impact education in single accreditation is by continuing to recognize excellence in osteopathic research. MEFACOOG research awards and grants will continue to provide the foundation for bringing osteopathic education principles to the greater OBGYN community and create scholarly activity opportunities for residency and fellowship programs.

Providing exceptional educational experiences is our priority, beginning with medical students, through postgraduate training, and in lifelong learning.

Thank You for your continued support.

Sincerely,

Michael J Geria, DO, MS, FACOOG(Dist)
Executive Vice President/CEO

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MEFACOOG/Resident Reporter Scholarship Program

The Resident Reporter Program at the 88th Annual Conference (virtual conference) received commendable contributions from the residents who participated. The top papers given monetary awards and publication in the MEFACOOG Annual Report were:

Kathryn O'Malley, DO - Central Michigan University - Mt Pleasant, MI
"Enhanced Recovery After Surgery"
Article based upon a lecture by lecture by: K. Shawn LyBarger, DO

Megan Piacquadio, DO - Albert Einstein Medical Center Philadelphia - Philadelphia, PA
"Prenatal Screening"
Article based upon a lecture by lecture by: James Hole, DO

Plan your research project now!

The MEFACOOG Research Grant of up to $5,000 is open to osteopathic physicians or any resident or fellow of an osteopathically recognized ACGME residency or fellowship training program.

MEFACOOG/Resident Reporter Scholarship Program

Enhanced Recovery After Surgery

Kathryn O'Malley, DO

Article based upon a lecture by K. Shawn LyBarger, DO

Enhanced Recovery After Surgery (ERAS) is a multimodal and multidisciplinary approach to perioperative care to improve functional rehabilitation after surgery with significant implications to improved patient outcomes as well as reduction in health care cost. It was initially introduced by a group of surgeons with background in fast-track colorectal surgery, spearheaded by Henrik Kehlet in 1997. After growth and expansion into multiple Northern European countries with research to support the approach, the ERAS Society was founded in 2010 in Sweden. The Society has continued to grow globally, expand to other surgical disciplines, hold annual congresses to update guidelines in an evidence-based fashion, and notably create ERAS implementation programs to help institutions adopt ERAS into their workflows. This approach has been adopted by many centers as the standard of care and its implementation has increased patient satisfaction and pain control. Utilizing ERAS has also demonstrated decreased length of stay, postoperative morbidity, time to bowel motility recovery, 30-day readmission rates, and hospital costs. Guidelines generally extend to cover c-sections as well, with few modifications related to pregnancy safety in preoperative medication choice.

ERAS protocol implementation starts in the preoperative setting with patient education and interventions. Providing patient education and psychological preparation in both written and oral formats as well as meeting team members reduces patient anxiety and increases patient satisfaction. This step aids in improving fatigue and facilitating early discharge. Preoperative abstinence from tobacco and alcohol use for 4 weeks is recommended. Alcohol in the perioperative period is known to have impact on cardiac function, blood clotting, immune function and response to surgical stress which is thought to contribute to perioperative morbidity, though exact mechanism is not known. While complete cessation 4 weeks prior has been shown to reduce postoperative complications, it does not impact mortality or length of stay. Based on moderate evidence, it is recommended for cessation 4 weeks prior to surgery. Preoperative behavioral counseling and nicotine replacement therapy such as varenicline has been shown to increase short-term smoking cessation. Tobacco use impacts both the pulmonary system as well as wound healing. Due to less robust tissue oxygenation with smoking, it can prolong inflammation and delay reparative cell function causing delayed healing. While short term tobacco cessation 4 weeks prior to surgery does not impact postoperative morbidity, it is recommended for its benefit in reducing postoperative complications.

Preoperative identification and correction of anemia is also recommended, as perioperative erythropoiesis-stimulating agents and transfusion are associated with poorer outcomes for cancer patients, namely increased risk of cancer recurrence. Prehabilitation is a new addition to the ERAS protocol, aiming to optimize well-being in anticipation of predicted stressors. This approach includes exercise, dietary intervention, psychological intervention, supporting behavioral change, and encouraging overall well-being. Nutritional prehabilitation in colorectal surgery shortened hospital LOS by 2 days, independent of it

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being used in conjunction with ERAS. However, studies have had conflicting results secondary to lack of consensus in method. Therefore, recommendation endorsing this for gynecologic surgery is premature. Risk for post op ileus is lower with minimally invasive, shorter surgeries with minimal manipulation, which is a consideration in preparing the patient for surgery and determining surgical approach.

Preoperative overnight fasting is discouraged, with evidence further supporting a solid food fast of 6-8 hours prior to surgery, with clear liquids only 2 hours pre-operatively. Carbohydrate treatments with 50g carbohydrate 2H prior to surgery or 100g the night before surgery are associated with reduced post-operative insulin resistance, shorter hospital stay, and enhanced return of bowel function. Carbohydrate treatments had no impact on post-op complication rates, but there's insufficient data to make recommendations for well-controlled diabetic patients. Mechanical bowel preparation alone does not decrease post-operative morbidity and increases dehydration risk and its related effects. Per 2005 Cochrane Review, there were also increased risks of bowel leak rate, infection rate, length of stay, and postoperative ileus associated with bowel preparation. Mechanical bowel preparation has not been shown to improve visualization, bowel handling, or ease of performing procedure for minimally invasive gyn surgery. Therefore, preoperative bowel preparation is recommended against for minimally invasive gyn surgery and is discouraged before open laparotomy. Its use should be limited to patients with colon resection planned and used in conjunction with oral antibiotics, if used at all. Studies of oral antibiotic bowel prep may be associated with decreased infection rates, but those benefits have not been confirmed by comparison in RCT to antibiotics alone and as such, is not currently recommended.

Multimodal analgesia starts in the preoperative state and is carried through to postoperative state. Opioid-sparing multimodal analgesia involving acetaminophen, gabapentin, Celebrex, and dexamethasone preoperatively is recommended and shown to improve outcomes. NSAIDs have decreased opioid consumption by one-third, with a reduction in time to bowel sounds, bowel movement, and tolerance of solid diet by 12 hours and reduction to time discharge by 2 days (based on median values). Utilization of COX-2 inhibitors (celecoxib) preoperatively have shown efficacy, though mixed results if given postoperatively. COX-2 inhibitors block the increase in COX-2 and prostaglandin expression, which is directly proportional to the extent of small bowel manipulation intraoperatively. There is a dose-dependent risk of ischemic cardiovascular disease with use of NSAIDs. Preoperative considerations for analgesia also include alvimopan, which is an FDA approved oral selective μ-antagonist that blocks negative effects of opioids on gut motility for patients with planned bowel resection, ideally given preoperatively before any opioids are administered. RCT in multiple surgical settings have demonstrated reduction time to bowel recovery and postoperative ileus rates.

Surgical site infection reduction bundles are a new addition to the 2019 update to ERAS protocol and demonstrate decreased risk in an additive fashion. Starting preoperatively, first generation cephalosporins are the first line therapy for hysterectomy and should be dosed by weight, administered within 1 hour of incision, and re-dosed dependent on blood loss and operative time. For skin preparation, patients are encouraged to shower preoperatively with a chlorhexidine-based soap. Hair removal has not been demonstrated to reduce surgical site infection, and if needed

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should be completed just before surgery by clipping. A chlorhexidine skin preparation in the OR is also recommended, as there is a 40% reduction of infection vs povidone-iodine preparation.

Continuing with perioperative considerations with relation to reduction in surgical site infection, there is an absence of high quality evidence to address role of peritoneal or subcutaneous drains. These drains have not been sufficiently demonstrated to decrease surgical site infection and as such are strongly discouraged as biofilm colonization can be detected as early as 2 hours after placement. Perioperative normothermia reduces risk of infection and cardiac event. Perioperative glycemic control <200 for both diabetic and nondiabetic reduces infection and mortality. Perioperative multimodal analgesia should include use of local anesthetic. Utilization of liposomal bupivacaine over bupivacaine-HCl in setting of ERAS protocol has shown reduction in post op ileus by 50% and reduction in total opioid consumption.

Postoperatively, foley catheters should be discontinued within 24 hours, as soon as possible. With relation to analgesia, postoperative use of transabdominis plane block or thoracic epidural have decreased length of stay, with data favoring TAP block due to improved transition to oral medications over epidural. However, due to lack of direct comparison, neither is recommended over perioperative local infiltration of incision site with bupivacaine.

Nasogastric tubes, delayed feeding, excessive IVF, hypoalbuminemia, bleeding, pelvic/lower abdominal surgeries and laparotomies increase risk of post-operative ileus. Nasogastric tubes are not recommended prophylactically per several trials and a Cochrane review, citing there is an earlier return of bowel function, decrease in pulmonary complications, lower rate of ileus, shorter length of stay without nasogastric tube use. Chewing sugarless gum after colon surgery has shown to reduce time to flatus by 0.3 days, bowel movement by 0.5 days, and length of hospital stay by 0.7 days. Limiting IV fluids to <2L/day and ideally restricting to 40-70cc/hour on POD#0, until 500-600cc PO intake achieved or 8AM next day (whichever comes first) aids in reduction of bowel edema and ileus risk.

Postoperatively, laxatives may be considered to increase colonic motility, given 6 hours after surgery and continued twice daily POD#1 and POD #2. In two separate studies, it was shown to reduce time to first bowel movement by 16.8-24 hours but did not have any significant effect on time to first flatus or tolerance of PO solids, pain, PONV, or narcotic use. Gastrograffin has been reviewed in two studies of prolonged ileus, with mixed results. One study of its use in (2015, Vather) showed accelerated time to flatus by 13 hours but no improvement in PONV, the other study (2016, Biondo) noted improved tolerance of oral intake, but no significant difference in time to resolution of ileus. Postoperatively, early feeding of normal diet (within 2 hours) is recommended. The primary obstacle to early feeding is postoperative nausea and vomiting, which is reduced with multimodal analgesia and is best addressed by combination of 2 or more antiemetics such as Zofran and dexamethasone and/or preoperative application of scopolamine patch. Metoclopramide also may be beneficial to decrease time to tolerance of solid food, but has not shown any statistically significant benefit for post-operative ileus despite pro-kinetic effect on small intestine.

Early mobilization within 24 hours is strongly recommended on the basis of multiple

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associated positive patient outcomes and reduction to length of stay, supported by ACOG Guidelines as well to be out of bed at least 2 hours the evening after surgery and at least 8 hours on subsequent postoperative days (including up in chair, walks). Patient is recommended to be up in chair for all meals. For VTE prophylaxis, all gyn oncology patients undergoing major surgery >30min should receive dual VTE mechanical prophylaxis and chemoprophylaxis and this dual prophylaxis should continue throughout hospital stay. For gyn oncology patients, it is also recommended to continue chemoprophylaxis for 28 days postoperatively based on the ENOXECAN II study that reflected 60% increased risk VTE for those who received LMWH for 28 days as opposed to 10 days postoperatively.

Of note, there are separate recommendations for vulvar and vaginal surgery. For pain management, general or regional anesthetic techniques such as epidural anesthesia may be used intraoperatively but should be discontinued soon after as there are associated risks of hypotension or urinary retention. If a neuromuscular blocking drugs are used, complete reversal must be confirmed objectively at end of procedure. Local anesthetic injected into affected wound edges, vaginal cuff and paracervical blocks have had some support, but further study is needed. Utilization of ketamine, alpha-2 agonists, or pregabalin in vaginal surgery patients is acceptable if avoiding opioid-related problems such as tolerance or opioid-induced hyperalgesia, but there is little evidence to support this. Scheduled acetaminophen and ibuprofen is recommended for vulvar and vaginal surgery patients postoperatively, and for these to continue scheduled after discharge. Oral opioids may be given as needed with IV opioids for breakthrough pain if indicated. However if patients are having breakthrough pain, evaluation for wound infection is recommended as severe postoperative pain is rare in these patients. For pelvic surgery patients, immediate postoperative voiding and concern for urinary retention is a common concern. Retrograde bladder filling for the voiding trial as opposed to awaiting spontaneous fill should be considered as it may shorten time in PACU and was preferred by patients. Use of urinary catheters is recommended for postoperative bladder drainage in complex vaginal surgery, to be removed after a short period of time as removal timing is associated with lower rates of recatheterization, bladder infection, and length of stay. Catheters may be avoided in uncomplicated vaginal hysterectomy. Currently, there are not sufficient studies to make urinary drainage recommendations in vulvar surgery.

Implementation of Enhanced Recovery After Surgery provides significant patient benefit as outlined above with decreased complication rates, but also reduction in cost savings to health care facilities. After 1 year of implementation, Johns Hopkins reported savings of $948.5K; net savings of $395K after offset costs of implementation of $550K. There is a cited net cost savings $1K-2.7K per cancer patient, $3.3K-7.1K per noncancer patient. Of note, improved compliance of ERAS utilization from 56% to 77% was associated with a 31.4% reduction in adjusted length of stay and net cost savings of $952 per patient in a gyn-oncology population. This compliance had been obtained through active auditing of ERAS utilization and as such, active auditing of its use in hospitals is recommended.

In summary, ERAS protocol recommends preoperative patient education and preparation, anemia correction, cessation of alcohol and tobacco 4 weeks prior to surgery, and prehabilitation. These interventions improve patient anxiety, fatigue, satisfaction, and

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wound healing while decreasing perioperative morbidity. A preoperative solid food fast of 6-8 hours prior to surgery, with clear liquids only 2 hours pre-operatively as well as carbohydrate treatments are recommended while mechanical bowel preparation and oral antibiotic bowel prep are not. Opioid-sparing multimodal analgesia with oral medications starting preoperatively, as well as perioperative local anesthetic (specifically utilization of liposomal bupivacaine) is recommended as reduces total opioid consumption and impacts post op ileus rates. Surgical site infection reduction bundles support preoperative antibiotic therapy as well as patient showering preoperatively with chlorhexidine soap and a chlorhexidine skin prep. Antibiotics should be weight based, within 1 hour of incision and re-dosed based on blood loss and operative time. Use of peritoneal or subcutaneous drains are not recommended due to biofilm and foleys should be removed as early as possible within 24 hours postop. Perioperative glycemic control should be maintained <200 regardless of diabetic status. Postoperatively limiting IV fluids to <2L/day, avoiding nasogastric tubes, early feeding normal diet within 2 hours reduces length of stay and postop ileus rates. Postoperative nausea and vomiting is best addressed by a combination of antiemetics and is reduced with multimodal analgesia. Early mobilization with patient out of bed 2 hours on POD#0 and at least 8 hours on subsequent postoperative days reduces length of stay and is associated with positive outcomes. Gyn-oncology patients should receive dual mechanical and chemoprophylaxis while inpatient and continue chemoprophylaxis 28 days postoperatively. ERAS protocol has applications and a role in vulvar and vaginal surgery as well as c-sections and should be implemented whenever possible. It should be noted epidural and other regional anesthetic techniques should be discontinued soon after vaginal or vulvar surgery due to risk of associated risks of hypotension or urinary retention. Retrograde bladder filling should be considered as it shortens PACU time and time to void. Significant healthcare savings to facilities has been noted with ERAS implementation, as well as significant patient benefit and decreased complication rates.

ERAS Resources

1. The ERAS Implementation Program
2. American Society for Enhanced Recovery (ASER) Protocols
3. ERAS Society Guidelines
4. American Association of Nurse Anesthesiology (AANA)- ERAS Guidelines
5. AANA Resources to Share

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MEFACOOG/Resident Reporter Scholarship Program

Prenatal Screening

Megan Piacquadio, DO

Article based upon a lecture by James Hole, DO

Introduction

Prenatal screening is an advancing and evolving field at the forefront of obstetrical care. Often complex and overwhelming, it is challenging to not only counsel patients on prenatal screening, but to interpret the meaning of results. Dr. Hole's lecture provided an overview of prenatal screening and offered insight on how to counsel patients and translate screening results. Prenatal screening is vital to early recognition of genetic conditions, most notably trisomy 21, 18, and 13. Screening for these conditions leads way to discussions regarding options for invasive diagnostic genetic testing. Ultimately early diagnosis plays a critical role in empowering patients to have management options in a timely manner, especially for patient who face limitations in abortion care.

Background

Chromosomal abnormalities occur in approximately 1 in 150 live births. This statistic fails to capture the larger prevalence of chromosomal abnormalities which often result in early pregnancy loss. Because of this statistic, it is general practice that all pregnant patients be offered prenatal screening and diagnostic testing regardless of demographic factors or risk for chromosomal anomalies. Providers should provide comprehensive pre-test counseling regarding prenatal screening and diagnostic testing methods, as well as the risks, limitations, and benefits of each method. Dr. Hole suggested this may be done with a brochure provided by clinics at early prenatal visits.

Prenatal screenings are designed to assess if a patient's fetus is at increased risk for a genetic disorder. Diagnostic testing is used to determine whether a fetus is affected by a specific genetic disorder or condition. If a patient elects for genetic screening, only one method should be utilized. Should a screening indicate increased risk, the patient should be counseled on the likelihood of the fetus being affected by a particular condition (i.e the positive predictive value (PPV) of the given screen), as well as options for additional testing to further elucidate risk. It is important to note the limitations, as well as the strengths, of each genetic screening method. Additionally, many screening methods may not provide timely results, limiting access to time sensitive management options such as abortion.

Genetic Screening

There are four major categories of genetic screening: ultrasonography, maternal/paternal carrier status of specific genetic disorders, maternal serum assays assessing specific biochemical markers indicative of aneuploidy, and maternal plasma fetal cell-free DNA (cfDNA). ACOG Practice Bulletin 226 "Screening for Fetal Chromosomal Abnormalities" Table 2 summarizes the characteristics, advantages, and disadvantages of the available screening modalities.

Ultrasound

Ultrasound is used to detect major structural abnormalities associated with chromosomal anomalies. Additional "soft" markers can be detected which are nonspecific and generally

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non-pathologic findings that are more common among fetuses with trisomies. Such "soft" markers include echogenic intracardiac foci, thickened nuchal fold, renal pelvic dilation, echogenic bowel, and choroid plexus cysts. If a "soft" marker is isolated and a patient has not undergone genetic screening, screening should be recommended. If aneuploidy screening was previously performed and low risk, no further assessment is indicated in the setting of an isolated "soft" marker. However, if more than one "soft" marker is identified, genetic counseling, maternal fetal medicine consultation, or both are recommended.
A first trimester ultrasound can assess nuchal translucency (NT) at 10 weeks to 13 weeks and 6 days gestation. The NT is the fluid-filled space on the dorsal portion of the fetal neck. An enlarged NT (≥3mm) is independently associated with risk of genetic anomalies and syndromes. NT can be useful in multifetal gestations as it can be individually assessed for each fetus, while other genetic screening methods may not be accurate or available and cannot provide information specific to each fetus.

At the forefront of testing is the first trimester anatomy ultrasound performed at 11 weeks to 13 weeks 6 days of gestation. During the first trimester anatomy ultrasound, a comprehensive anatomical survey is performed with a 43.1% detection rate, diagnosing 37.7% of cardiac defects, 95.6% of abdominal wall defects, 66.3% of nervous system defects, 33.8% of limb and skeletal malformations, 30.8% of facial abnormalities, 21.2% of urogenital abnormalities, 18.4% of thoracic and lung abnormalities, and 4.1% of gastrointestinal tract abnormalities. Patients undergoing a first trimester anatomy ultrasound should be offered a second trimester ultrasound to assess fetal structural defects, which may occur with or without aneuploidy, between 18 to 22 weeks gestation.

Maternal/Paternal Carrier Screening
Carrier screening should be performed prior to pregnancy to guide couples regarding their reproductive risk and options. If an individual is found to be a carrier of a specific condition, the patient's reproductive partner should be offered testing as well. Currently it is recommended that the following conditions are screened for: Spinal Muscular Atrophy (SMA), hemoglobinopathies, Fragile X, and Cystic Fibrosis.

Serum assays
Maternal serum assays can assess the following biomarkers: pregnancy-associated plasma protein-A (PAPP-A), human chorionic gonadotropin (hCG), alpha-fetoprotein (AFP), dimeric inhibin A (DIA), and unconjugated estriol (uE3). Maternal serum assays may be performed in a single step such as the first trimester screen, the triple screen, the quadruple screen, or the penta screen. One may combine first and second trimester screening to yield a higher detection rate for genetic anomalies through either the integrated, sequential, or contingent screening protocols. Of note, first trimester screens are performed between 10 to 14 weeks of gestation, whereas second trimester screens are performed between 15 weeks to 22 weeks and 6 days gestation.

Maternal plasma fetal cell free DNA (cfDNA)
cfDNA has become the most widely used genetic screening method as it is the most sensitive and specific screening test for common fetal aneuploidies (trisomies 13, 18, and 21). A recent meta-analysis noted >99% detection of trisomy 21, >98% for trisomy 18 and >99% for trisomy 13 in screening tests where results were obtained. cfDNA is currently the only screening test available to identify sex chromosome aneuploidies. cfDNA is produced by both the mother and fetal-placental unit. Approximately 3-13% of cfDNA

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in maternal circulation is of fetal-placental origin. The vast majority of "fetal" cfDNA in maternal circulation is theorized to come from apoptosis of placental cells, more specifically syncytiotrophoblasts. However, a small amount of fetal cfDNA results from the apoptosis of fetal erythroblasts. Although the fetus and placenta are derived from a single fertilized egg, and usually genetically identical, discordance in cfDNA test results can stem from confined placental mosaicism.

cfDNA can be performed as early as 9-10 weeks gestation when the fetal fraction (amount of fetal-placenta cfDNA in maternal circulation) reaches adequate levels for testing. A benefit of cfDNA is that it can be performed up to term. cfDNA is often used as a secondary screening test in patients who decline diagnostic testing after a positive screening test. Important to note, the screen is unreliable in settings of low fetal fraction and will result in a false negative or test failure; thus limits for fetal fraction are set by each specific laboratory (usually a minimum of 3-4% cfDNA). Fetal fraction is affected by numerous factors including gestational age, BMI, race, maternal medication exposure, aneuploidy status if present, maternal mosaicism, and single vs multiple gestation. Interestingly, IVF pregnancies have a lower fetal fraction and the cfDNA test failure rate is two to three times higher than naturally conceived pregnancies.

cfDNA is reported to have high detection rates for common aneuploidies (96-99%). However, this data does not include patients with low fetal fraction or test failures who are more likely to have genetic anomalies, thus falsely increasing the sensitivity and PPV of the screen. This likely results in an overestimation of detection rates. As a result, it is important to understand lab results are not as predictive as they may appear. Additionally, the PPVs of cfDNA screens vary by patient demographics, thus it is imperative obstetrical providers translate screening results. It is important for the provider to include how these results should be interpreted and subsequent next steps. The use of online programs/ PPV calculators can assist in this translation. Although cfDNA can detect sex chromosomal aneuploidies, it is important to note the lower detection rates and higher false positive rates for these disorders. Additionally, some labs offering cfDNA started offering whole genome, microdeletion, copy number variant, and trisomy 16 and 22 evaluation, which also do not have established false positive rates and thus are not recommended. Understanding the limitations of cfDNA will not only guide patient counseling and recommendation for next steps, but also help avoid termination of healthy fetuses, as approximately 10% of patients with positive results will have an unaffected pregnancy.

Where are We Headed?

Dr. Hole concluded his discussion of prenatal screening by discussing what lies ahead. He states the first trimester anatomy ultrasound in conjunction with cfDNA screening is the direction in which the field is headed. First trimester ultrasound, in addition to cfDNA screening, will provide early information and maximize available management options for patients with affected pregnancies.

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Table 2. Characteristics, Advantages, and Disadvantages of Common Screening Tests for Chromosomal Abnormalities

Screening Approach	Approximate Gestational Age Range for Screening (Weeks)	Detection Rate (DR) for Trisomy 21 (%)	Screen Positive Rate* (%)	Advantages	Disadvantages	Method
Cell-free DNA†	9–10 to term	99	2–4% Includes inability to obtain results, which is associated with increased risk†	1. Highest DR 2. Can be performed at any gestational age after 9–10 weeks 3. Lowest false-positive rate	Results may reflect underlying maternal aneuploidy or maternal disease	Several molecular methods
First trimester‡	10–13 6/7§	82–87‖	5	1. Early screening 2. Single time point test	Lower DR than tests with first and second trimester component NT required	NT+PAPP-A, free beta hCG, +/− AFP¶
Quad screen‡	15–22	81	5	1. Single time point test 2. No specialized US required	Lower DR than first trimester and first and second trimester combined tests	hCG, AFP, uE3, DIA
Integrated‡	10–13 6/7§, then 15–22	96	5	High DR	Two samples needed No first-trimester results NT required	NT+PAPP-A, then quad screen
Serum integrated‡	10–13 6/7§, then 15–22	88	5	1. DR compares favorably with first-trimester screening 2. No specialized US required	Two samples needed No first-trimester results	PAPP-A + quad screen
Sequential**: stepwise	10–13 6/7§, then 15–22	95	5	1. First-trimester results provided 2. Comparable performance to integrated, but FTS results provided	Two samples needed NT required	NT+ free beta hCG + PAPP-A, +/− AFP¶, then quad screen
Contingent screening**		88–94	5	First-trimester test result: Positive: diagnostic test or cell-free DNA offered Negative: no further testing Intermediate: second-trimester test offered Final: risk assessment incorporates first- and second-trimester results	Possibly two samples needed NT required	NT+hCG+ PAPP-A, +/− AFP¶, then quad screen

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Table 2. Characteristics, Advantages, and Disadvantages of Common Screening Tests for Chromosomal Abnormalities (*continued*)

Screening Approach	Approximate Gestational Age Range for Screening (Weeks)	Detection Rate (DR) for Trisomy 21 (%)	Screen Positive Rate* (%)	Advantages	Disadvantages	Method
Nuchal translucency alone#	10–13 6/7§	70	5	Allows individual fetus assessment in multifetal gestations Provides additional screening for fetal anomalies	Poor sensitivity and specificity in isolation NT required	US only

Abbreviations: AFP, alpha-fetoprotein; DIA, dimeric inhibin-A; DR, detection rate; FTS, first-trimester screening; hCG, human chorionic gonadotropin; NPV, negative predictive value; NT, nuchal translucency; PAPP-A, pregnancy-associated plasma protein A; PPV, positive predictive value; uE3, unconjugated estriol; US, ultrasonography.

All patients should be offered second-trimester assessment for open fetal defects (by ultrasonography, with or without second-trimester serum AFP) and ultrasound screening for other fetal structural defects.

*A screen positive test result includes all positive test results: the true positives and false positives. For cell-free DNA, this includes the test failure rates given the association with increased risk of aneuploidy (see † below).

†Gil MM, Accurti V, Santacruz B, Plana MN, Nicolaides KH. Analysis of cell-free DNA in maternal blood in screening for aneuploidies: updated meta-analysis. Ultrasound Obstet Gynecol 2017;50:302–14.

‡First-trimester combined screening: 87%, 85%, and 82% for measurements performed at 11 weeks, 12 weeks, and 13 weeks, respectively (Malone FD, Canick JA, Ball RH, Nyberg DA, Comstock CH, Bukowski R, et al. First-trimester or second-trimester screening, or both, for Down's syndrome. First- and Second-Trimester Evaluation of Risk (FASTER) Research Consortium. N Engl J Med 2005;353:2001–11.)

§Because of variations in growth and pregnancy dating, some fetuses at the lower and upper gestational age limits may fall outside the required crown–rump length range. Also, different laboratories use slightly different gestational age windows for their testing protocol.

‖Use of free beta hCG in conjunction with nasal bone assessment increases the detection rate to 97% with a screen positive rate of 5% (Cicero S, Bindra R, Rembouskos G, Spencer K, Nicolaides KH. Integrated ultrasound and biochemical screening for trisomy 21 using fetal nuchal translucency, absent fetal nasal bone, free beta-hCG and PAPP-A at 11 to 14 weeks. Prenat Diagn 2003;23:306–10.)

¶Testing of first trimester AFP depends on commercial lab used. First trimester AFP should not be used in lieu of second trimester AFP for open fetal defects screening.

#Alldred SK, Takwoingi Y, Guo B, Pennant M, Deeks JJ, Neilson JP, et al. First trimester ultrasound tests alone or in combination with first trimester serum tests for Down's syndrome screening. Cochrane Database of Systematic Reviews 2017, Issue 3. Art. No.: CD012600. DOI: 10.1002/14651858.CD012600.

**Cuckle H, Benn P, Wright D. Down syndrome screening in the first and/or second trimester: model predicte performance using meta-analysis parameters. Semin Perinatol 2005;29:252–7.

References

- "ACOG Practice Bulletin No. 226: Screening for Fetal Chromosomal Abnormalities." Obstetrics & Gynecology, vol. 136, no. 4, Oct. 2020, pp. e48–e69., https://doi.org/10.1097/00006250-200701000-00054.

MEFACOOG Annual Report - Year 2022 Support

The Medical Education Foundation relies on its members to support its mission.

The mission of the MEFACOOG is to foster continuing improvements in women's health care. The financial review below reflects the year ending December 31, 2022. Below are ongoing grants we hope to continue in the upcoming year.

- MEFACOOG Resident Reporter Scholarship Program-educating osteopathic OB/GYN residents at the ACOOG Annual Conference and reporting back to their programs and to the profession.
- MEFACOOG Awards for Excellence in Poster Presentation-encouraging research and rewarding dissemination via poster presentation at the ACOOG Annual conference.
- MEFACOOG Postgraduate Research Grant encouraging research in osteopathic OB/GYN residency and fellowship programs.

The 89th Annual Conference of the ACOOG hosted three funded lectureships. The Sages of ACOOG Unity Lecture was given by Boyce K. Fish, DO. The MEFACOOG Distinguished Lecture was presented by Francis A. Chervenak, MD, MMM. The Distinguished Fellows Lecture was presented by Mollie Gordon, MA, MD. The Past President's Honorary Lectureship was presented by Traci A. Kurtzer, MD at the 2022 Advances in Women's Health Conference.

The National Student Society of the ACOOG met for the fourteenth during the ACOOG 2022 Advances in Women's Health. These projects would not be possible without the support of you, the donors. Thank you for your continuing support.

Financial Review

Statement of Activities

Year Ended December 31, 2022

Support

Corporate Contributions	$10,000
Individual Contributions	$29,411
Interest & Dividends	$22,199
Realized & Unrealized	$(119,600)
In-Kind Contributions	$59,860
Total Revenues, Gains, and Other Support	**$1,870**

Expenses

Program Services	$14,370
Support Services	$82,202
Total Expenses	**$96,572**
Net Assets, Beginning of Year	$759,686
Change in Net Assets	$(94,702)
Net Assets, End of Year	**$664,984**

Statement of Financial Position

Year Ended December 31, 2022

Assets

Current Assets

Cash and Equivalents	$28,395
Investments	$628,900
Dues from ACOOG	$7,940
Total Assets	**$665,235**

Liabilities and Net Assets

Accounts Payable	$250
Without Donor Restrictions	$616,178
With Donor Restrictions	$48,807
Total Liabilities and Net Assets	**$665,235**

MEFACOOG Awards for Excellence

89th Annual Conference Posters – 1st Place Winner

The Impact of the COVID-19 Pandemic on Perinatal Depression in a Resident Clinic Patient Population

Leah M. Kurth, DO
Ethan Steele, OMS
Catherine Schuller, MD, FACOG

Henry Ford Wyandotte Hospital (Wyandotte, MI)
Department of Women's Health, Department of Medical Education, Ob/Gyn Residency Program

OBJECTIVES

The 2019 coronavirus disease (COVID-19) is a public health emergency of international concern. To date, there are limited studies that have explored the impact of the COVID-19 pandemic on maternal mental health. The extraordinary condition created by the COVID-19 pandemic could negatively affect maternal psychological health and the mother-infant relationship by enhancing psycho-emotional distress in the postpartum period. Perinatal depression is already an all-too-common problem that can have devastating consequences for women and their children, as well as a long-term impact on the global burden of disease. As it is essential for obstetric care providers to screen for and recognize perinatal depression, it too is critical to determine if and to what extent the ongoing COVID-19 pandemic may contribute to the burden of perinatal depression. The aim of this study is to determine the impact of the COVID-19 pandemic on the prevalence of perinatal depression.

METHODS

A retrospective cohort study was performed among a convenience sample of 158 eligible women delivering at Henry Ford Wyandotte Hospital during and prior to the COVID-19 pandemic. Women appearing to Henry Ford Wyandotte Ob/Gyn Resident Clinic for their routine 6-week postpartum appointment between March 1, 2019 and February 28, 2021 – corresponding to one year before and one year during the pandemic – were screened for perinatal depression using the standardized Edinburgh Postnatal Depression Scale (EPDS). The results of subjects assessed during the COVID-19 pandemic (n=72, from March 1, 2020 to February 28, 2021) were compared to those assessed before the COVID-19 pandemic (n=86, from March 1, 2019 to February 29, 2020). The final number of women included in this study was 158, with 86 (54%) from the pre-COVID period and 72 (46%) from the COVID period. Comparisons between the two time periods were done using Fisher's exact tests for the binary variables, a two- sample t-test for maternal age, and Wilcoxon two sample tests for the EPDS score and the ordinal variables. Multivariate logistic regression was used to assess the relationship between the time periods and postpartum depression after adjusting for the other variables (maternal age, Medicaid insurance, history of depression/anxiety, gravidity/parity, and any documented delivery complications).

RESULTS

Table 2: Multivariate Logistic Model for Postpartum Depression

Variable	Odds Ratio	95% Confidence Limits for OR		p-value
COVID vs pre-COVID	0.65	0.29	1.46	0.294
Age	0.99	0.91	1.07	0.738
Medicaid insurance	2.49	1.00	6.22	0.051
Preexisting depression/anxiety	6.62	2.35	18.63	0.0003
Gravidity	1.33	0.94	1.88	0.113
Parity	0.67	0.41	1.08	0.098
Delivery complications	0.33	0.03	3.39	0.352

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The difference in postpartum depression rates between the pre-COVID and COVID time periods was not statistically significant (29% vs 24%, p=0.474, OR=0.75, 95%CI=(0.37, 1.54)) (Table 1).
No other differences were detected between the two time periods for any of the other aforementioned variables. After adjusting for these other variables, the association between postpartum depression and COVID remained not significant (OR=0.65, 95%CI=(0.29, 1.46), p=0.294) (Table 2).

Table 1: Comparing Pre-COVID and During COVID Groups

Variable	Response	Pre-COVID (N=86)	During COVID (N=72)	p-value
EPDS score (total)	Mean ± SD Median (IQR)	6.4 ± 5.2 5 (3, 9)	5.9 ± 6.0 4 (1,8)	0.254[1]
EPDS score categories	<=8	61 (71%)	55 (76%)	0.496[1]
	9-11	11 (13%)	7 (10%)	
	12-13	5 (6%)	2 (3%)	
	14 or more	9 (10%)	8 (11%)	
PP depression based on EPDS	Not Likely (<=8)	61 (71%)	55 (76%)	0.474[2]
	Possible (>=9)	25 (29%)	17 (24%)	
Maternal age	Mean ± SD Median (IQR)	27.0 ± 5.5 27 (23, 31)	27.6 ± 5.7 26 (24, 31)	0.492[3]
Medicaid insurance		59 (69%)	40 (56%)	0.101[2]
Preexisting depression/anxiety		9 (10%)	12 (17%)	0.347[2]
Previous PP depression		3 (3%)	0 (0%)	0.251[2]
Gravidity	1	29 (34%)	24 (33%)	0.504[1]
	2	27 (31%)	16 (22%)	
	3	15 (17%)	14 (19%)	
	4+	15 (17%)	18 (25%)	
Parity	0	1 (1%)	2 (3%)	0.792[1]
	1	40 (49%)	35 (49%)	
	2	25 (30%)	12 (17%)	
	3	9 (11%)	15 (21%)	
	4+	7 (8%)	7 (10%)	
Delivery complications		4 (5%)	3 (4%)	>0.99[2]

[1]p-value from Wilcoxon two sample test.
[2]p-value from Fisher's exact test.
[3]p-value from two sample t-test.

CONCLUSIONS

The results of this study indicate that the COVID- 19 pandemic has not significantly impacted the prevalence or severity of perinatal depression within the resident clinic patient population it evaluated. However, it is important to note that the overall prevalence of perinatal depression within the population examined in this study was nearly double (27%) the national incidence (14%) for both the pre-COVID and COVID groups. Although at this point not specifically impacted by the unique condition created by the ongoing COVID-19 pandemic, perinatal depression remains one of the most common medical complications during pregnancy and the postpartum period. Perinatal depression is influenced by a variety of socioeconomic and health risk factors that must be screened for – especially in at-risk populations like the one examined in this study – in an effort to curb the devastating effects that untreated perinatal depression can have on women and their children

KEY REFERENCES

1. Layton H, et al. Depression, Anxiety, and Mother-Infant Bonding in Women Seeking Treatment for Postpartum Depression Before and During the COVID-19 Pandemic. J Clin Psychiatry. 2021 Jul 6;82(4):21m13874. doi: 10.4088/JCP.21m13874.
2. Screening for perinatal depression. ACOG Committee Opinion No. 757. American College of Obstetricians and Gynecologists. Obstet Gynecol 2018;132:e208– 12.

MEFACOOG Awards for Excellence

89th Annual Conference Posters – 2nd Place Winner

Implementation of Pediatric Mental Health Calls During the COVID-19 Pandemic and Postnatal Depression Findings Among Mothers

Sarina Desai, MPH, OMS-II,
Andi Winn
Joanna Garcia, MPH
Priya Bui, DO

Texas College of Osteopathic Medicine, Fort Worth, Texas
The University of North Texas Health Science Center

BACKGROUND

- In March 2020 the University of North Texas Health Science Center (UNTHSC) Pediatrics Clinic in Fort Worth, TX had to reduce the number of in-person medical visits due to the COVID-19 pandemic.
- Physicians expressed concern due to patients and mothers not receiving the same quality surveillance and patient-physician collaboration that they would have receivedduring routine in-person visits, which were postponed or done virtually due to health precautions.
- As a result, the Pediatric Mental Health Calls (PMHC) Program was created to provide support to the pediatric patients and their guardians over the span of thepandemic.

METHODS

- Medical and physician assistant (PA) student volunteers were recruited and trained as callers through the PMHC program.
- Patient information from 758 subjects at the UNTHSC Pediatrics Clinic was collected and managed using REDCap electronic data capture tools hosted at UNT Denton.[2]
- Call scripts are used to standardize conversations with caretakers of patients ranging from 2-6 months old and to evaluate maternal mental health during isolation.
- The script includes the Edinburgh Postnatal Depression Scale (EPDS), a 10-question nationally mandated screening tool that is valid to assess maternal health during the first three post-natal visits.
- Individual questions in the EPDS are scored 0-3 in order of increased symptom severity and total EPDS scores can range from 0-30.
- A total EPDS score cut-off of ≥ 10 is recommended for use in routine primary care settings and a cut-off of ≥ 12 suggests depressive illness which should be assessed further.[1]
- EPDS scores ≥ 10 are used to signify increased risk of postnatal depression and patients having EPDS scores < 12 are given resources or referred based on volunteer's judgement.
- 289 subjects out of those called completed the EPDS survey. Mothers with an EPDS score cut-off of ≥ 12 are referred.
- Analysis used Chi-squared test of independence. Significance was set at $p<0.05$.

RESULTS

Table 1. Comparison of the percentage of mothers surveyed that did or did not need referral to a mental health specialist.

Referral	Total (N= 289)	Percentage
Yes	29	10.03%
No	260	89.97%

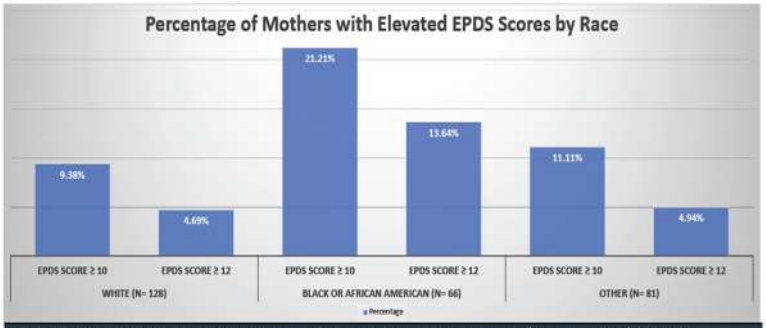

Figure 1. Comparison of the percentage of mothers with elevated EPDS scores (≥ 10 and ≥ 12) by race.

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"Implementation of Pediatric Mental Health Calls During the COVID-19 Pandemic and Postnatal Depression Findings Among Mothers

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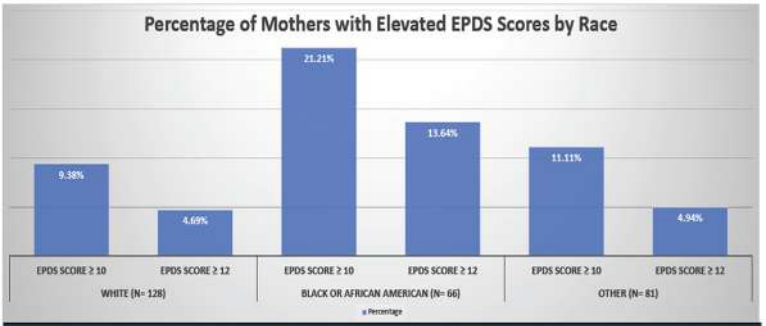


Figure 1. Comparison of the percentage of mothers with elevated EPDS scores (≥ 10 and ≥ 12) by race.

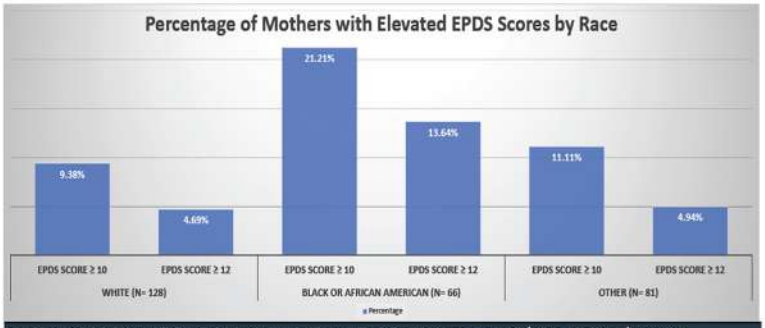


Figure 1. Comparison of the percentage of mothers with elevated EPDS scores (≥ 10 and ≥ 12) by race.

- Of the mothers who completed the EPDS, approximately 10% needed referral to a mental health specialist because they either received a total EPDS score ≥ 12 or they exhibited signs of postnatal depression based on volunteer judgement.
- A majority of the mothers with elevated EPDS scores (EPDS score ≥ 10) were Black or African American and of those who were referred (EPDS ≥ 12) Black or African American mothers were the highest percentage.
- There was a significant association between race and elevated EPDS scores (X2(2, N=200)= 37.01, p= 9.172 x 10-9)
- Mothers who were not working had a lower percentage of elevated EPDS scores (EPDS score ≥ 10) when compared to working others with the father as the primary aretaker of the children, which highest percentage of elevated EPDS scores across day-time caretakers.
- There was no statistically significant association between EPDS scores ≥ 10 (X2(3, N=59)= 2.91, p= 0.405) or EPDS scores ≥ 12 X2(3, N=54)= 1.44, p= 0.695) and workday caretakers.
- Mothers of infants 6 months of age exhibited the highest percentage of EPDS scores above the referral cut-off (18.7%) in comparison to other infant ages included in the data.
- There was no statistically significant association between elevated EPDS scores and age in months (X2(4, N=226)= 3.93, p= 0.416) and age in months.

DISCUSSION/CONCLUSIONS

- Overall, the data shows a high prevalence of postnatal depression risk and need for referral among mothers of patients during the COVID-19 pandemic.
- Given that the data reflected significant disparities in postnatal depression risk between White and Black or African American mothers during the pandemic, improvements should be made to both PMHC and standard clinical practice to include implementation of culturally sensitive treatment to better support minority mothers during the postnatal period.
- Program modifications should include mothers of infants in older age ranges who may need referral for postnatal depression. The EPDS is only valid for the first 3 post natal visits, however a few questions to assess maternal health beyond these visits should be included for future PMHC.
- The PMHC program is feasible and should continue to serve as a means of increasing access to healthcare

Key References

1. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987; 150:782–786.
2. PA Harris, R Taylor, R Thielke, J Payne, N Gonzalez, JG. Conde, Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, *J Biomed Inform. 2009 Apr;42(2):377-81.*

MEFACOOG Awards for Excellence

89th Annual Conference Posters – 3rd Place Winner

Metformin-mediated Cardioprotection and Adenosine Monophosphate Activated Protein Kinase (AMPK) in Doxorubicin Cardiotoxicity

Jaclyn Del Pozzo, DO
Katherine Livatova, DO
Puja Mehta, Fei Cai, Cairong Li,
Satoru Kobayashi, and Qiangrong Liang

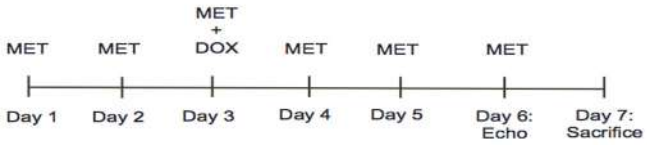
Department of Biomedial SciencesNew York Institute of Technology College of Osteopathic Medicine,
Old Westbury NY

BACKGROUND

Doxorubicin (Dox), a commonly used antineoplastic drug, raises clinical concern due to its irreversible cardiotoxicity. Metformin (Met), a drug used for the treatment of type 2 diabetes mellitus, has been suggested as a cardioprotective agent against Dox-induced cardiotoxicity. Adenosine-monophosphate activated protein kinase (AMPK) is a regulator of cell homeostasis; this pathway is activated in response to adenosine triphosphate (ATP) depletion by stressors such as ischemia, hypoxia, low glucose and heat shock. Previously, the cardioprotective effects of Met on Dox-induced damage has been studied in wild type animals. However, the underlying mechanisms are not fully understood. Although many studies have suggested that AMPK may be responsible for the ability of Met to decrease Dox-induced cardiomyocyte death in cultured cardiomyocytes, other in vivo studies have shown that the AMPK activation by a direct allosteric activator (MK-8722) or gene point mutations (Prkag2) promotes cardiac hypertrophy, suggesting a detrimental role of AMPK activation in the heart. In the present study, we determined the role of the AMPK pathway in Dox cardiotoxicity and in Met-induced cardioprotection in vitro using siRNA AMPK knockdown cardiomyocytes and in vivo using AMPK knockout mice.

METHODS

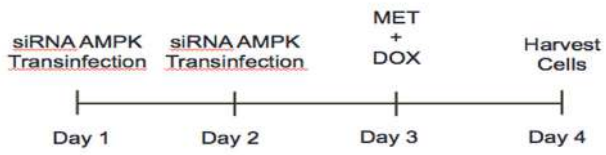
In vivo:



Wild type (WT) and AMPK α2 knockout (AKO) mice were distributed into four groups (Control, Met, Dox, Met+Dox). Mice were administered Met (200 mg/kg/d, oral) every day for 6 consecutive days and Dox once on day 3 (20 mg/kg, intraperitoneal) according to their respective groups.

Echocardiography was used to determine cardiac function as shown by fraction shortening. Serum analysis of lactate dehydrogenase activity and cardiac troponin I were measured. Terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) staining was performed to quantify the amount of apoptosis per tissue sample.

In vitro:



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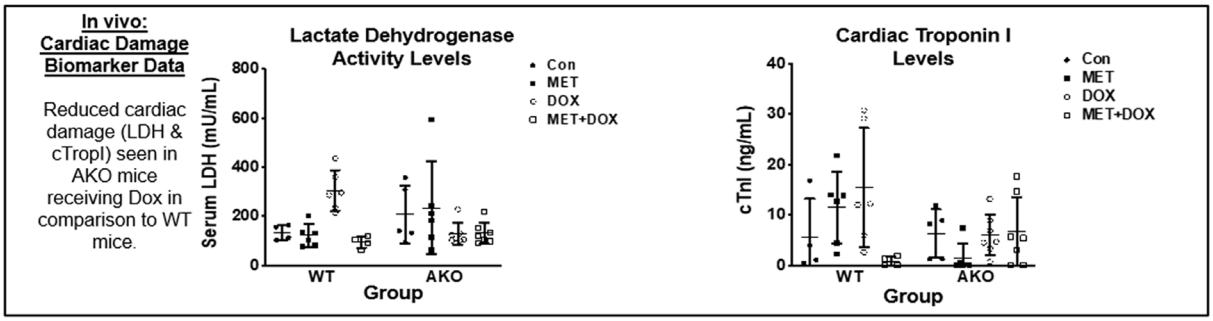
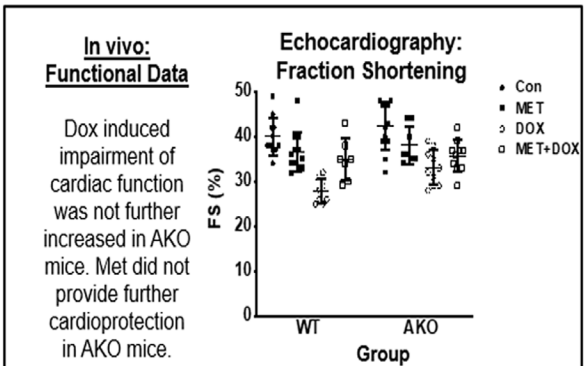
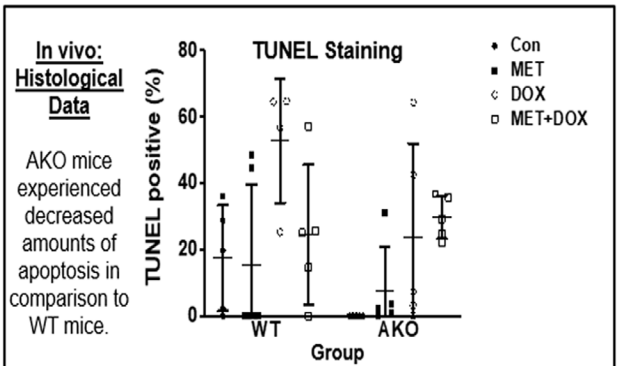
- H9C2 rat cardiomyocytes were cultured in DMEM with 1% FBS. Double transfection using 6uL siRNA AMPK alpha 1 and 6uL siRNA AMPK alpha 2 were performed on day one and day two. On day three, 3.0 mM of metformin and 0.5 uM of doxorubicin were added. On day four, cells were harvested for total lysate.

- Western blots were performed to confirm decreased siRNA AMPK activity. Membranes were incubated with AMPK alpha 2 #SC19131 (1:2000 of 2.5% milk in TBST) and anti-goat secondary antibody (1:5000 of 2.5% milk in TBST). Membranes were also incubated with PARP #CS9542 (1:2000 of 2.5% milk in TBST) and cleaved caspase 3 #CS9664 (1:2000 of 2.5% milk in TBST) and anti-rabbit secondary antibody (1:5000 of 2.5% milk in TBST) to determine levels of apoptosis.

RESULTS







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"Intraoperative Foley Catheter Tip Exchange and its Effects on Postoperative Urinary Tract Infections Following Gynecologic and Urogynecologic Procedures"

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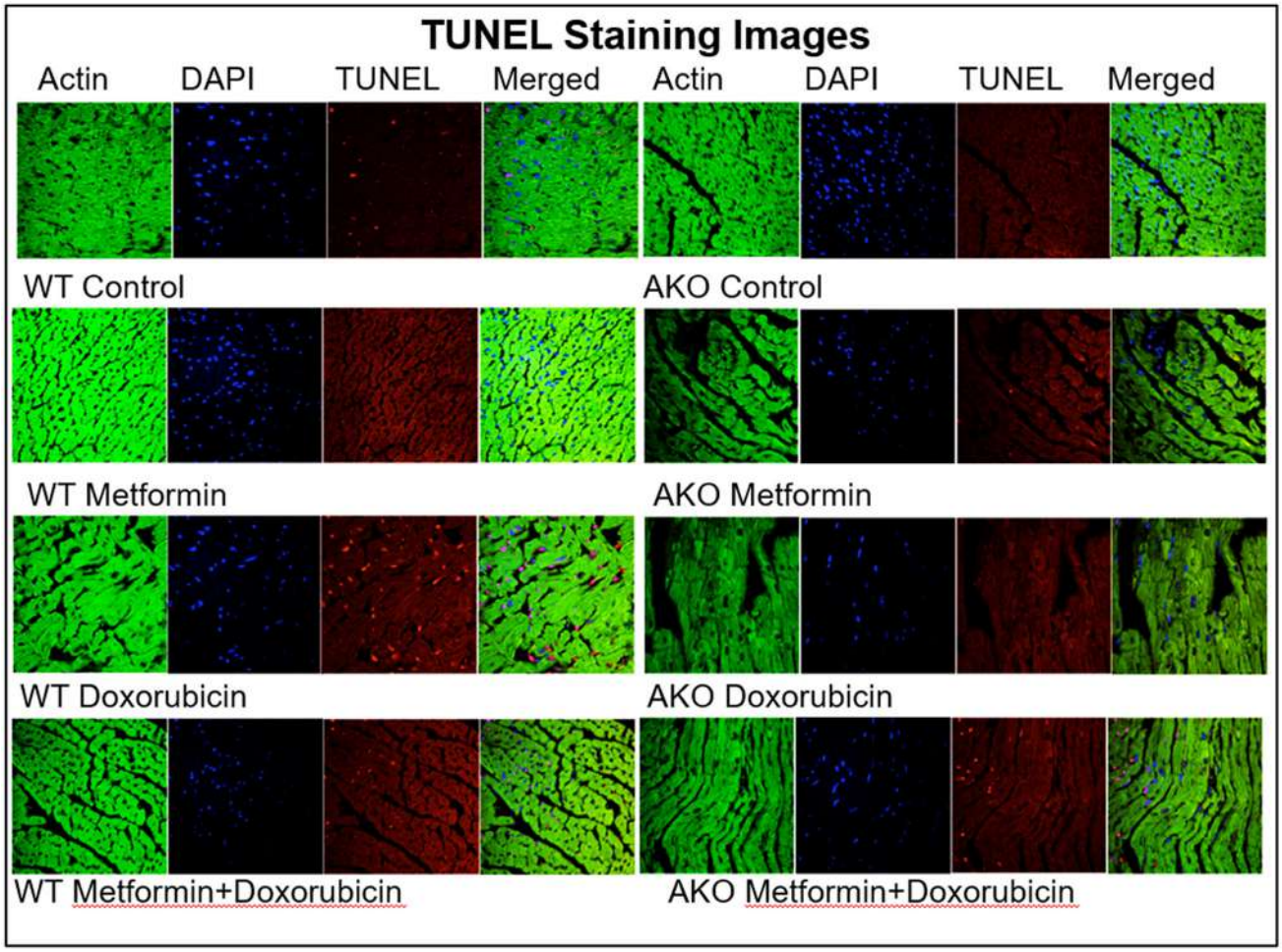

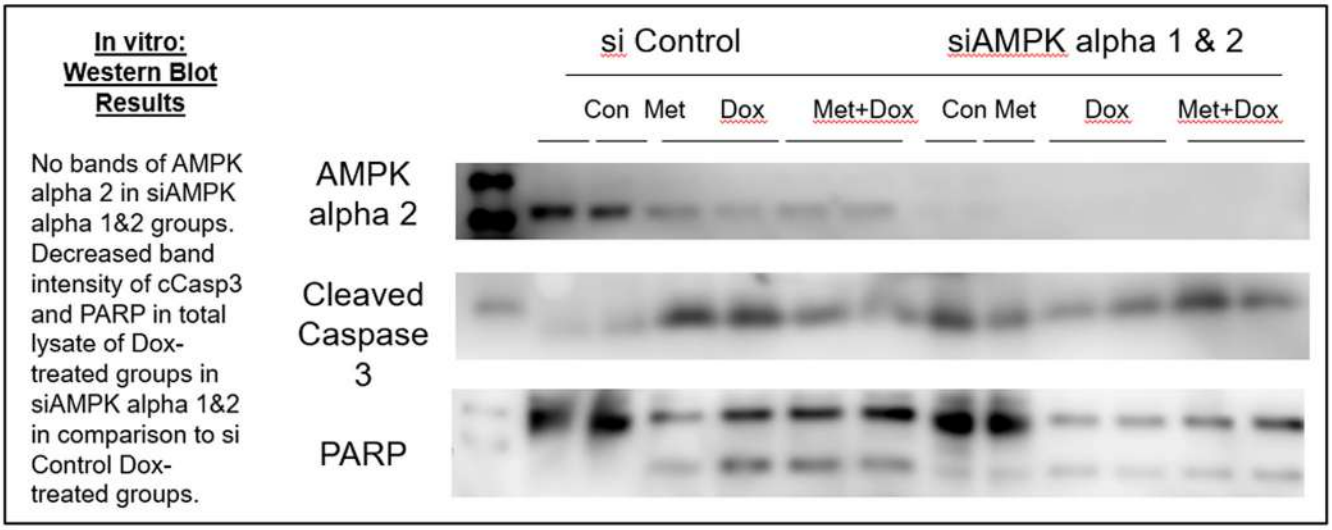

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SUMMERY AND CONCLUSIONS

- Surprisingly, knocking down AMPK alpha 1 & 2 isoforms decreased Dox-induced cardiomyocyte death as shown by reduced levels of cCasp3 and PARP. This effect was also confirmed in vivo as TUNEL staining showed reduce apoptotic cell death in the heart from Dox-treated AMPK α2 KO (AKO) mice relative to WT mice. Also, echocardiography demonstrated improved cardiac function in Dox-treated AKO mice in comparison to WT mice. In addition, the serum levels of lactate dehydrogenase (LDH) and cardiac troponin I (cTnI) were reduced in Dox-treated AKO mice as compared with WT mice. These results revealed that AMPK deficiency diminished rather than exacerbated Dox cardiotoxicity, suggesting that AMPK is not always cardioprotective, in contrast to the prevailing belief.

- Met reduced Dox cardiotoxicity in WT mice as shown by all the parameters described above. However, the ability of Met to protect against Dox cardiotoxicity was not affected in AKO mice, suggesting that Met protected the heart through mechanisms other than AMPK activation.

- In vitro, Doxorubicin treatment induced cardiomyocyte apoptosis as shown by increased levels of cleaved caspase 3 (cCasp 3) and PARP which was attenuated by Metformin, highlighting metformin's cardioprotective effects. This was confirmed in vivo as the administration of Metformin was sufficient to reverse Doxorubicin-impaired cardiac function in WT mice as indicated by improved fraction shortening.

ACKNOWLEDGEMENTS

Thank you to Dr. Qiangrong Liang, Dr. Satoru Kobayashi and Tamayo Kobayashi for your support and assistance throughout the course of this project.

CALL FOR VOLUNTEERS

MEDICAL EDUCATION FOUNDATION OF ACOOG

Are you looking for a new way to be involved? Do you enjoy developing innovative educational programs or social philanthropy? Being a MEFACOOG Board Member could be for you! MEFACOOG volunteer leaders can be physicians, educators, non-physician clinicians, spouses/family of ACOOG members, health care industry supporters....anyone with a passion for women's health!

Several positions will be open for nomination this year and we need your expertise. The MEFACOOG Board of Trustees meets twice per year with one meeting usually conducted by phone or web conference. The primary, in-person meeting of the MEFACOOG Board coincides with the ACOOG Annual Conference.

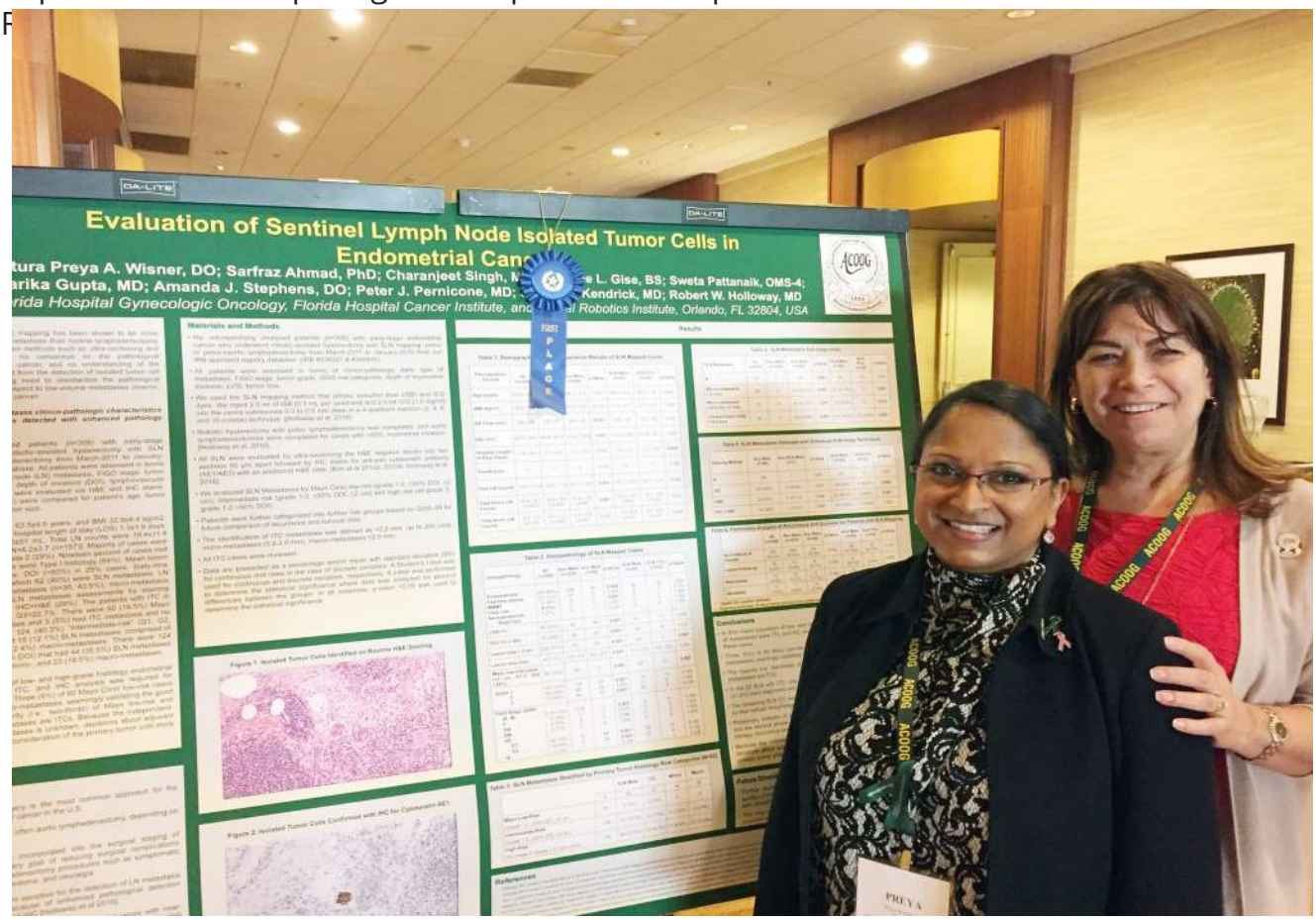
Key MEFACOOG activities include:

- Community Service Projects-past projects include work at a youth community center in Chicago, home repairs in New Orleans for Katrina recovery effort, blood drives, and support for a residential home for pregnant mothers in crisis.
- Resident and Postgraduate Fellow Research Awards and Grants
- Resident Reporter Scholarships provide an opportunity for residents to attend an ACOOG conference and potential article publication
- Resident Education Resources
- Endowed lectureships for CME (Lifelong Learning for attending physicians)
- Support for Osteopathic Continuous Certification (Lifelong Learning, Practice Performance Improvement for attending physicians)
- Fundraising events such as the 'Evening with the Stars' planetarium function and Cirque Du Soleil Mystere

This is just an overview of the potential that exists with MEFACOOG.
We welcome new opportunities, new leaders, and new ideas!
If you are interested in **MEFACOOG Board of Trustees** service,
please forward a statement of interest and a brief bio or CV to
Valerie Bakies Lile, CAE by email to vblile@acoog.org or by fax to (817)377-0439
by **December 1st**.

Eric J. Carlson, DO Resident Reporter Scholarship Program

The Eric J. Carlson, DO Resident Reporter Scholarship Program provides a select group of residents the opportunity to attend a scientific meeting they otherwise may be unable to attend. The purpose of the program is to expose the residents to new scientific knowledge and technology in obstetrics and gynecology. The resident in turn, provides a written summary report on that lecture to ACOOG and then reports to the base institution and colleagues on information presented at the meeting . All Resident Reporter Scholarship Program recipients will be publication in the MEFACOOG Annual F



SUBMISSION DEADLINE

Abstracts: December 1st, 5 PM (Central Time)
Posters: February 15th, 5 PM (Central Time)

ACOOG Calendar of Events

2023 Advances in Women's Health
September 28-October 1, 2023
Westin Peachtree Plaza
Atlanta, GA

Chairs:
Brad Irving, DO and Emmie Strassberg, DO

91st Annual Conference
May 5-10, 2024
Hyatt Regency Coconut Point
Bonita Springs, FL

Chairs:
Diana Okuniewski, DO and Sadaf Lodhi, DO

92nd Annual Conference
April 6-11, 2025
Omni Rancho Las Palmas Resort and Spa
Palm Springs, CA

Chairs:
Karen Kreig, DO

Membership Donations

Cumulative October 1999 through December 31st, 2021

Chairman Level $50,000+

Eric Carlson, DO

Diamond Level $40,000+

Sapphire Level $30,000+

William Bradford, DO

Emerald Level $20,000+

Steve Buchanan, DO
Robert H. Debbs, DO
Ronal Librizzi, DO

Platinum Level $10,000+

Patricia F. Arnett, DO
David J. Boes, DO
Thomas Dardarian, DO
Michael Geria, DO
Mark Kalchbrenner, DO
Paul Krueger, DO
James J. Perez, DO
Marydonna Ravasio, DO
Kedrin Van Steenwyk, DO
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Octavia M. Cannon, DO
Anthony J. Cortese, DO
Lori Crites, RN, RDMS
Laura Souders Dalton, DO
Douglas C. Dedelow, DO
Carl Della Badia, DO
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