The mission of the MEFACOOG is to foster continuing improvements in women’s health care. 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 health care.
MEFACOOG’s mission is to foster ongoing improvements in women’s healthcare and support osteopathic lifelong educational opportunities. We achieve this through: continuing medical education; undergraduate, graduate and postgraduate research programs; faculty development; and, facilitating educational networks. MEFACOOG sponsored programs and events staged during the past 12 months have enabled us to make progress towards achieving our mission goals. Highlights for the year include:

- **Resident Reporter Program** - Residents representing their respective programs receive a scholarship to attend the ACOOG Annual Conference. Each resident is assigned a session to report on and possibly write an expansion article for publication. Their attendance also offers valuable networking opportunities to discuss issues, challenges, and current realities facing residents today.

- **Resident Research Forum** - Supported resident produced research by funding the online research training modules for every ACOOG program, which was also used as the curriculum outline for the ACOOG Resident Research Training Seminar during Fall Conference. 2nd year residents are required to attend so that they may be educated in research methodology as well as the overall process in conducting research in their respective specialties.

- **$1500 annual stipend available to all COM campuses** - A $500 grant is provided so that a delegate and/or alternate may attend ACOOG Fall Conference NSS Meeting. An additional $1000 is provided to each school scheduling a Visiting Professor. This can be used to fund projects in the community or on campus and to facilitate student clubs. The NSS and Visiting Professor programs help foster mentoring opportunities, student interest in the specialty, and networking with leadership and residents.

- **Community Service Projects** - Past projects have included:
  - Home builds in New Orleans after Hurricane Katrina
  - Women’s support organizations in Fort Worth and Philadelphia
  - After school community center and Build-a Bike program in Chicago

Such projects permit a chance for students, residents, and members to work together and alongside members of a community in a worthwhile project.

- **Golf outing with COM/OPTI sponsorship** - Provided a forum for fellowship; competitive spirit between teams paired by COM or GME training site generated funds for MEFACOOG educational initiatives

- **Provided sponsorship for four endowed lectures**:
  - Gail Goldsmith – women’s health research
  - Barbara Hawks – honorary fellows lecture / service to the college
  - Past Presidents – leadership
  - MEFACOOG Distinguished Lecture – education

Potential new Programs and Initiatives:
We continue to look for initiatives that will have a positive impact in education. As examples, a couple of possibilities include:

- Faculty Development for Program Coordinators & Program Directors
- A “Prep for Practice” course designed to help new graduates prepare for life outside of residency

Regardless of any new initiatives, we will maintain our focus on four primary areas:

- Education
- Lectures - Our goal is to have enough money to fund five fully endowed lectureship ($50,000 each or $250,000 total).
- Scholarship
- Resident Reporter
As we continue to develop new programs and events promoting medical education, we would like to extend a heartfelt thank you to all of our donors and supporters. It is only through your continued financial support and volunteerism that we are able to provide such opportunities. The MEFACOOG mission is very important and we greatly appreciate your continued support.

Sincerely Yours,

Teresa Hubka, DO, FACOOG (DIST), FACOG, CS

Our MEFACOOG Board of Trustees members for 2014-2015 includes:

Teresa Hubka, DO.............................Chair
David Forstein, DO,.............................Vice-Chair
Deanah Jibril, DO....................Secretary Treasurer
Mark Barbee....................................Trustee
David J. Boes, DO............................Trustee
Lori Crites, RN, RDMS..................Trustee
Lisa Fritz, DO.................................Trustee
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Richard Polk, DO.............................Trustee
Jeffrey Postlewaite, DO..................Trustee
Steve Buchanan, DO...............Ex-Officio
Valerie Brennan, CAE........Executive Director

• NSS Society
• Community Service
• Research

“Letter from the Chair; MEFACOOG Board Members”

(Continued from Page 2)
The Medical Education Foundation has welcomed many changes this year. New investment management services, new officers, and new accounting staff. New officers are Teresa Hubka, DO-Chair, David Forstein, DO-Vice Chair, and Deanah Jibril, DO-Secretary Treasurer. Our new Manager of Accounting for ACOOG and MEFACOOG is Jimmie Evans. We have greatly appreciated our relationship with Dean Jacobson Financial while transitioning foundation investment services and look forward to a full year in 2015.

Many thanks to everyone who contributed to the Safe Haven service project during the ACOOG 2014 Fall Conference. Participants donated and delivered over 50 items such as pack n’ play cribs, car safety seats, and strollers.

Did you know? Donors have the ability to restrict their donation to any of the following programs/initiatives:
- National Student Society of ACOOG
- Resident Reporter Program
- Endowed Lectureships
- Osteopathic Graduate Medical Education
- Postgraduate Research Awards
- Fundraising Events
- Community Service Projects

This is a great opportunity if you’ve been a recipient of a particular award or scholarship and want to support the participation of another young ACOOG member. The Resident Reporter Scholarship Program alone has benefited more than 270 residents, many of whom have gone on to serve in ACOOG leadership roles. Many other postgraduate training resources have been supported by MEFACOOG, including online evaluation systems, research training modules, and OMM video curriculum. Endowed lectures ensure that quality CME sessions will continue to be offered while allowing some containment of ever increasing costs of conference production. Awarding excellence in research will provide opportunities for bringing osteopathic education principles to the greater OBGYN community.

Continuing to provide educational opportunities for our members is crucial; beginning with medical students, through postgraduate training, continuing medical education, and osteopathic continuous certification.

Sincerely,

Valerie Brennan, CAE
Executive Director
RECURRING GIFT FORM

Name: _____________________________________________________________________________________
Address: ___________________________________________________________________________________
City: _______________________________________ State: ____________________ Zip: ________________
Phone Number: _____________________________________ Email: __________________________________

Option #1 Direct Debit
☐ Please draft my bank account*  ☐ monthly ($25 minimum) or  ☐ quarterly ($75 minimum)
Enclose a voided check for accuracy ★  Bank Draft Start Date (circle one): 15th  25th
Scheduled Draft Amount (if different from above): $ ____________________________
Signature: ________________________________  Date: ________________________________

Option #2 Credit Card
Type of Credit Card (circle one): Visa  MasterCard  American Express
☐ Please charge my credit card  ☐ monthly ($25 minimum) or  ☐ quarterly ($75 minimum)
Credit Card Charge Start Date (circle one): 15th  25th  Scheduled Charge Amount: $ _________________
Acct. No.: ________________________________  Expiration Date: ________________________________
Signature: ________________________________  Date: ________________________________

Please designate to help support the following programs:
☐ MEFACOOG General Support
☐ Gail Goldsmith Memorial Lecture (Annual Conference)
☐ Barbara Hawkes & Honorary Fellows Address (Annual Conference)
☐ MEFACOOG Distinguished Lecture (Annual Conference)
☐ Past President’s Honorary Lecture (Fall Conference)
☐ National Student Society of the ACOOG Scholarship grant
☐ Visiting Professor Program
☐ MEFACOOG Fall Service Project

* This agreement will remain in effect until MEFACOOG receives written notification of termination. Quarterly donations will occur every three months after the first gift.

Return this form to: 8851 Camp Bowie West, Suite 275, Fort Worth, TX 76116
Fax: 817-377-0439
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 (OMM video curriculum, Challengergrants, L3 for Residents quarterly learning modules)
- Endowed lectureships for CME (Lifelong Learning for attending physicians)
- Support for Osteopathic Continuous Certification (Lifelong Learning, Practice Performance Improvement for attending physicians)
- Annual Silent Auction and Golf Tournament
- 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 Brennan, CAE by email to vbrennan@acoog.org or by fax to (817)377-0439 by December 1, 2015.
Last year, 2014, ACOOG has been able to enrich the opportunities of education to its membership in many ways. The Board of Trustees and the many committees have been diligent at keeping Osteopathic OB/GYN lifelong learning in women’s healthcare at the forefront of these activities. Review of each of the committee’s activities is available for those who are interested, but the following excerpts from highlights from 2014 will give an example as to these notable accomplishments.

The ACOOG continuing medical education committee did a spectacular job of putting on two memorable conventions. The annual meeting in Las Vegas set in ACOOG membership record for attendance. Membership had noted that the didactic experience for the fall conference in Dallas/Fort Worth was exceptional. CMEC should be congratulated for their design of the conference schedule to maximize learning capabilities of each audience. Membership should be aware that there are many CME activities available online at ACOOG. Topics that have been identified by needs assessment profiles have been carefully presented for these educational components. Please feel free to avail yourself of some of the CME activities and quizzes located under your login at ACOOG in the profile section.

http://members.acoog.org/source/OnlineExam/Wel come.cfm

The ACOOG Membership and Promotions committee is now present at both of the ACOOG conferences. They are to be congratulated for engaging the general membership with the candidate members (residents in training and osteopathic students). The level of excitement generated by the next generation of OB/GYN’s is truly encouraging. The annual ceremony presented on Presidents’ Day is largely due to the collaboration of the Historian and Traditions committee with the Membership and Promotions committee. Please look forward to the development of legacy traditions as Presidents’ Day evolves in the future.

The distinguished fellows of ACOOG have initiated a campaign to fund lectures for the general membership for years to come. If you have a favorite Osteopathic OB/GYN or a family member who is a distinguished fellow, please consider a MEFACOOG contribution for this educational grant. It is expected that the goal be reached during the next year.

The postgraduate evaluation and standards committee has also seen some milestone activities during the last year. Several residency training and fellowship programs have been initiated and have taken candidates during 2014. Competition for these programs is rather high, indicating the value that medical students place on OB/GYN training. Evaluation of these residency and fellowship programs continue to support that excellent training is being provided for those in women’s healthcare.

The postgraduate curriculum committee initiated the process for a ultrasound syllabus that would span a four-year OB/GYN residency. Formulation of how osteopathic principles modalities and therapies can be incorporated within the residency and fellowship programs is being reviewed. Needs assessment for minimally invasive surgery and robotics is being evaluated. More robust research during residency and fellowship has been suggested and will be the target of discussion for future PCC meetings.

It has been my privilege to represent ACOOG at the Council of Patient Safety in Women’s Health care. This is a national collaborative to promote a cultural change with the endeavor to continually improve women’s health.

http://www.safehealthcareforeverywoman.org/in dex.html

Several products have been made available for those with an interest in patient safety. There is a monthly Safety Action Series available through a
teleconference with online participation. Please feel free to view these archived resources or join in the monthly teleconference. http://www.safehealthcareforeverywoman.org/safety-action-series.html

These are just a brief synopsis of committee activity that is taken place by ACOOG during the last year. The level of involvement of ACOOG general membership is truly inspiring. Approximately 15% of the senior membership of ACOOG is integrally involved with the growth of “the college”. All are to be congratulated on their level of dedication to women’s health care.

Included in the MEFACOOG annual newsletter, are three articles submitted by residents who attended the annual conference. Please enjoy the review of the lectures given at the 81st meeting. The “Resident Reporter” is a MEFACOOG sponsored activity.

1. Summary of: Antibiotic Prophylaxis for OB/GYN [Dipak Delvadia, DO]
   By: Jenna Kolodziej, DO (Resident Reporter)

2. The Workup of a Pelvic Mass
   [DeEtte Vasques, DO]
   By Scott Rynearson, DO (Resident Reporter)

3. The Evaluation/Treatment of Abnormal Labs in The Infertile Patient
   [David Forstein, DO]
   By Ryan Sandlin, DO (Resident Reporter)

I would like to personally attest to the hours and quality of skill and attention provided for ACOOG membership by the ACOOG office. Their dedication to ACOOG membership is truly commendable.

Respectfully submitted,

William C Bradford, DO FACOOG (Dist.)

**Things to Know...**

Plan your research project now.

The MEFACOOG Research Grant of up to $5,000 is open to all residents, fellows and junior faculty in Osteopathic Postdoctoral Training Institutions to support research efforts. **The deadline date for the MEFACOOG Research Grant is November 1, of each year prior to our Annual Conference.** Get your application and guidelines on the MEFACOOG website under Research Grant Award.

**MEFACOOG/Resident Reporter Scholarship Program**

- **Summary of: Antibiotic Prophylaxis for OB/GYN**
  Grandview Hospital and Medical Center
  By: Jenna Kolodziej, DO

- **The Workup of a Pelvic Mass**
  Doctors Hospital
  By Scott Rynearson, DO

- **The Evaluation/Treatment of Abnormal Labs in The Infertile Patient**
  O’Bleness Memorial Hospital
  By Ryan Sandlin, DO
Why have antibiotic prophylaxis guidelines? The simple answer is surgical site infections are a common but preventable complication.

A surgical site infection (SSI) is defined as infection that occurs after surgery in the part of the body where the surgery took place within 30 days of the general procedure; or up to 90 days if implants were used. Most patients who have surgery do not develop an infection. However, serious infections develop in about 1 to 3 out of every 100 patients who have surgery, are responsible for 10% of deaths and can add up to $25,000 to cost of care per patient. Since surgical site infections remain the most common surgical complication, it is important that all surgeons (including ob/gyn physicians) understand the importance of correct antibiotic prophylaxis.

The Joint Commission has stated that all hospitals adopt core measurements. These Measurements/Guidelines are used to help improve the health care delivery process. In 2003, the Surgical Infection Prevention (SIP) measures were added as a core measure set for hospitals. In 2006 the SIP set was combined with other measures and is now known as the Surgical Care Improvement Project (SCIP) measures. SCIP is currently a national quality partnership of organizations interested in improving surgical care by significantly reducing surgical complications.

“To understand these measurements is important when planning surgery. A large portion of the measurements revolves around antibiotics selection.

Infection Prevention (SIP) measures were added as a core measure set for hospitals. In 2003 the SCIP measures were added to help improve the health care delivery process. In 2006 the SCIP set was combined with other measures and is now known as the Surgical Care Improvement Project (SCIP) measures. SCIP is currently a national quality partnership of organizations interested in improving surgical care by significantly reducing surgical complications.

To understand these measurements is important when planning surgery. A large portion of the measurements revolves around antibiotics selection. The correct antibiotic choice for the patient undergoing surgery is a crucial component in the fight against infection. Antibiotics work by augmenting the patients natural host immunity, helping to kill bacteria that are introduced into the surgical site. Surgeons should consider the three P’s when choosing what antibiotic coverage they want.

1. Procedure:
   • Type of Surgical procedure and surgical wound classification 1-4

2. Pathogen: Endogenous Flora
   • Skin: Staphylococcus (Usually aerobic gram-positive Coccii)
   • Vaginal: Polymicrobial flora (aerobic and anaerobic)
   • Perineum/groin: Fecal flora (Anaerobic bacteria and gram-negative aerobes)

3. Patient: DM, obesity, smoker, etc.

Choosing an antibiotic with the highest cost effectiveness is also important. Once it has been decided that an antibiotic is needed, it is imperative that the Body Mass Index (BMI) is calculated. The patient should be weighed at the time of surgery for this calculation. Self reported weight from the patient is often underestimated and should not be used. For proper antibiotic coverage the surgeon will need to change the dosage according to the calculated BMI. Most surgeons’ drug of choice is a cephalosporin. Cephalosporins have broad antimicrobial coverage and few allergic reactions/side effects. Cefazolin is the most commonly used agent for two reasons; low cost and longer half life (1.8hours). For BMI < 35 a 1g IV dose should be given, if BMI is >35 a 2g IV dose should be given. Another commonly used antibiotic in gynecologic procedures is cefoxitin. For BMI <40 a 2g IV dose should be given, if the BMI is >40 a 3g IV dose should be given. For patients with a penicillin allergy, cephalosporin prophylaxis is still the drug of choice as long as the allergy is not believed to be immunoglobulin E mediated (Immediate hypersensitivity). For those who do have an immediate hypersensitivity a Clindamycin combination or
Metronidazole combination would be appropriate.

The timing of when to give the antibiotic is also very important since skin flora/pathogens are introduced as soon as the incision is made. It is important that the antibiotic is given within one hour prior to surgical incision so that the concentration of the antibiotic will be highest at that point of the procedure. If the procedure takes longer than 3 hours or blood loss is >1,500ml the patient should be redosed for appropriate antibiotic coverage. It is recommended that additional antibiotic doses be given at intervals of one or two times the half life of the drug. All antibiotics should also be stopped 24 hours after time of surgery since prophylaxis should no longer be needed.

Certain gynecologic procedures may require special considerations and treatments. Patients undergoing hysterectomy should be screened for bacterial Vaginosis (BV). Although most will be asymptomatic, they should be treated with flagyl at least 4 days prior to surgery. This regimen has been shown to decrease post-hysterectomy cuff cellulitis/infection rates. Patients undergoing therapeutic/surgical abortion should be preoperatively treated with doxycycline 100 mg orally and given another 200 mg orally postoperatively to reduce risk of postabortal pelvic inflammatory disease (PID). An alternative to doxycycline is flagyl 500mg BID for 5 days. Hysterosalpingogram and chromotubation only require antibiotics for patients with a history of PID or if dilated fallopian tubes are noted during the procedure. The antibiotic of choice is Doxycycline 100 BID for five days.

It is just as important for a surgeon to know when antibiotics are not needed. Antibiotics are not required for Laparoscopy, operative/diagnostic Hysteroscopy, IUD placement, EMB, LEEP or ablation. Table 1 is a list of antibiotic regimens by procedure.

With all that can be done to prevent SSI, ob/gyn surgeons should understand when antibiotics are needed, what type of antibiotic is needed, what dose to give, when to redose and when to stop antibiotics. If all these measures are understood and applied to each surgical case, SSI could dramatically be reduced.

Box 1

The Surgical Care Improvement Project Core Measure Set

1. Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision
2. Prophylactic Antibiotic Selection for Surgical Patients
3. Prophylactic Antibiotics Discontinued Within 24 Hours after Surgery End Time
4. Cardiac Surgery Patients With Controlled 6 A.M. Postoperative Blood Glucose
5. Surgery Patients with Appropriate Hair Removal
6. Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero
7. Surgery Patients with Perioperative Temperature Management
8. Surgery Patients on Beta-Blocker Therapy Prior to Arrival Who Received a Beta-Blocker During the Perioperative Period
9. Surgery Patients with Recommended Venous Thromboembolism Prophylaxis Ordered
10. Surgery Patients Who Received Appropriate Venous Thromboembolism Prophylaxis Within 24 Hours Prior to Surgery to 24 Hours After Surgery

Box 2 (From ACOG PB #104)

Surgical Wound classification system
Class I/Clean: An uninfected operative wound in which no inflammation is encountered and the alimentary, genital and uninfected urinary tract is not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage

Class II/Clean-Contaminated: An operative wound in which the alimentary, genital and urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the appendix and vagina are included in this category, provided there is no evidence of infection or major break in technique is encountered.

Class III/Contaminated: Operations with major breaks in sterile technique or gross spillage from the gastrointestinal tract, and incision in which acute, nonpurulent inflammation is encountered.

Class IV/Dirty-infected: Operative sites involving existing clinical infection or perforated viscera. This definition suggests that the organisms causing the postoperative infection were present in the operative field before the operation.

(Continued on Page 8)
Table 1 (From ACOG PB #104)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Antibiotic</th>
<th>Dose (Single dose)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysterectomy</td>
<td>Cefazolin</td>
<td>1 g or 2 g</td>
</tr>
<tr>
<td>Urogynecology procedures +/- mesh</td>
<td>Clindamycin +/-</td>
<td>600 mg IV</td>
</tr>
<tr>
<td></td>
<td>Gentamicin or</td>
<td>1.5 mg/kg IV</td>
</tr>
<tr>
<td></td>
<td>quinolone</td>
<td>400 mg IV</td>
</tr>
<tr>
<td>Laparoscopy</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>- Diagnostic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Tubal sterilization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laparotomy</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Hysteroscopy</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>- Diagnostic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Endometrial ablation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Essure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hysterosalpingogram or chromotubation</td>
<td>Doxycycline</td>
<td>100 mg orally, twice daily for 5 days</td>
</tr>
<tr>
<td>IUD Insertion</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Endometrial biopsy</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Induced abortion/dilation and evacuation</td>
<td>Doxycycline</td>
<td>100 mg orally 1 hour before procedure and 200 mg orally after procedure 500 mg orally twice daily for 5 days</td>
</tr>
<tr>
<td></td>
<td>Metronidazole</td>
<td></td>
</tr>
<tr>
<td>Urodynamics</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Box 3

\[
\text{BMI} = \frac{\text{mass (kg)}}{(\text{height (m)})^2}
\]

\[
\text{BMI} = \frac{\text{mass (lb)} \times 703}{(\text{height (in)})^2}
\]

\[
\text{BMI} = \frac{\text{mass (lb)} \times 4.88}{(\text{height (ft)})^2}
\]

\[
\text{BMI} = \frac{\text{mass (st)} \times 9540}{(\text{height (in)})^2}
\]

References:
1. Presentation: Antibiotic Prophylaxis for OB/GYN by Dipak Delvadia D.O. April 7, 2014 ACOOG 81st Annual meeting; Las Vegas, NV
2. ACOG practice bulletin #104, May 2009
According to the American Society of Reproductive Medicine (ASRM), infertility affects 1.5 million women and their partners in the United States (1). Infertility is considered by many couples to be an unwanted burden that poses physical and psychological challenges. In addition to challenging the patient and her partner, infertility can prove to be a formidable challenge for even the most skilled practitioner. The challenges faced by treating this disease are systematic and often multi-focal. Given these challenges and the expectation of efficient, expeditious, cost-effective care, many physicians choose to forego the potential frustration of managing infertility patients. However, if approached in a stepwise fashion, many of the confounding variables leading to infertility can be reversed and treated. Therefore, it is the goal of this summary to provide a general reference tool to be used by general Obstetricians and Gynecologists when evaluating the infertile patient.

Infertility is defined as the inability to conceive following 1 year of unprotected intercourse (2). Women who present with a history of unprotected intercourse greater than a year without documented conception or women age 35 or older without conception after six months of unprotected intercourse should be offered evaluation. Also, women with a known history of oligomenorrhea, amenorrhea, tubal, uterine or peritoneal disease should undergo an infertility workup. In couples which male factor subfertility is suspected, an earlier evaluation may be justified. With the initial evaluation, the following histories should be thoroughly explored: past medical, surgical, menstrual and family history. It is also important to inquire on the type of infertility presenting; primary (no prior pregnancies) vs. secondary (infertility following at least 1 prior conception) (2). The duration of infertility should also be documented. This information can further guide the physician’s differential diagnosis regarding the etiology of an infertile couple. Additional information regarding coital frequencies, medications and known sexual dysfunctions can be helpful.

The physical exam should focus on signs of androgen excess such polycystic ovarian syndrome, resulting in anovulation. The cervix and vagina should be carefully inspected for abnormalities such as, cervical polyps or presence of a vaginal septum. A bimanual exam should be performed to assess for parametrial and adnexal tenderness and masses. A positive bimanual exam may raise the suspicion of an enlarge leiomyoma containing uterus or significant endometriosis, both may have an effect on fecundability.

After an adequate historical and physical evaluation, laboratory analysis should focus on the potential etiology of infertility along with a thorough screening of potential genetic abnormalities that may occur as a result of conception. First step in laboratory analysis is the documentation of ovulation. This can be performed by serum luteal phase progesterone levels, urine luteinizing hormone kits, basal body temperature and endometrial biopsy. Historically, basal body temperature and endometrial biopsies during the suspected luteal phase were performed, but more recently these techniques have been abandoned. More commonly serum analysis of progesterone elevation > 3ng/mL is evidence of ovulation. In women older than 35 years of age, ovarian reserve may be evaluated to aid in the assessment of oocyte quality. Women over the age of 30 with cycle irregularity may undergo further assessment to evaluate ovarian reserve. There are multiple laboratory methods to document ovarian reserve. No single test has been shown to be superior than another; therefore, these tests should be used in conjunction to collectively evaluate ovarian reserve. The following are the 3 most common laboratory test used to document ovarian reserve.

**Ovarian Reserve Laboratory Test**

<table>
<thead>
<tr>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 3 FSH/Estradiol</td>
</tr>
<tr>
<td>Clomiphene Citrate Challenge Test (CCCT)</td>
</tr>
<tr>
<td>Anti-mullerian Hormone (AMH)</td>
</tr>
</tbody>
</table>

(Continued on Page 13)
• Day 3 FSH/Estradiol – Obtain FSH on day 3 of cycle, if elevated greater than 10 mIU/mL suggest decreased ovarian reserve. Important to note that Estradiol (E2) must also be obtained at this time due to its ability to inhibit FSH secretion, thus producing a false-negative test.

• Clomiphene Citrate Challenge Test (CCCT) – Obtain FSH and Estradiol on day 3 of cycle, this is used as a baseline range of ovarian reserve. Days 5-9 of cycle administer 100 mg of Clomiphene Citrate, if FSH is elevated on day 10, compared to day 3 or if FSH is > 10 mIU/mL on day 10, suggest diminished ovarian reserve.

• Anti-mullerian Hormone (AMH) – Is a protein secreted by the a pool of granulosa cells supporting oocytes. If AMH < 1.0 ng/mL, suggest diminished ovarian reserve.

In the patient who presents with obvious or potential endocrinopathies (i.e. galactorrhea, heat intolerance, hirsuitism or morbid obesity) they should undergo additional laboratory evaluation. These tests include TSH, Prolactin, Testosterone, DHEA-S and a 75g GTT with insulin measurement. It is important to note that during the initial laboratory work-up of the infertile patient that these labs are obtained in conjunction with a pre-conception genetic screening laboratory analysis. It would not be prudent to acquire a costly infertile laboratory evaluation to only later determine that conception between the presenting couple would not be advised. Therefore, it is strongly suggested that pre-conception counseling be performed during the initial visit, often before specific infertility labs. Historically, the American Congress of Obstetricians and Gynecologist (ACOG) suggested screening for autosomal recessive disorders and other genetic abnormalities based on ethnicity of origin. However, more recently they have suggested universal screening on all individuals presenting for pre-conception genetic counseling. The following genetic abnormalities regardless of race or ethnicity have been encourage for universal testing, cystic fibrosis, spinal muscular atrophy and fragile X syndrome (3). Identifying a genetic abnormality at the onset allows the physician to properly counsel the couple regarding the possibility of becoming parents in the most economical manner.

References:
1. American Society for Reproductive Medicine; http://www.asrm.org, resources
3. The American College of Obstetricians and Gynecologists Committee Opinion 486, April 2011 “Update on Carrier Screening for Cystic Fibrosis.”
A commonly encountered finding that will test the full evaluation ability of a gynecologist is a pelvic mass. Multiple questions should be considered: Is the mass gynecologic? Is this acute or chronic? Is the mass benign or malignant? Does this require surgery? Should a generalist evaluate the mass or should a referral be made to a gynecologic oncologist? Understanding how to workup a pelvic mass to answer the above questions will allow proper decisions in the care of these women.

A woman’s lifetime risk of ovarian cancer is 1 in 70. In the United States, a woman has a 5-10% lifetime risk of going to surgery for a suspected ovarian neoplasm. Thus, answering the question is the mass benign or malignant is imperative. The anxiety and emotional distress that comes with the uncertainty of a pelvic mass and the possibility of neoplasm these patients is understandable given these statistics. Accuracy in making the diagnosis and giving correct counsel and comfort can help to alleviate these emotional symptoms.

The workup of a pelvic mass should always include an appropriate interview, comprehensive physical exam, analysis of appropriate radiologic imaging, and proper laboratory evaluation. A full workup, whether the patient is postmenopausal, perimenopausal or pediatric will aid in the ability to confidently answer these questions and make the appropriate steps in management.

Women with pelvic masses can present in different ways. Most commonly, they present with an incidental finding of an adnexal mass on physical exam or imaging; or with gynecologic symptoms (i.e. pelvic pain) and a mass subsequently found on imaging. Understanding and identifying risk factors, protective factors, and symptomology for ovarian malignancy will give evidence to help with a diagnosis in both of these scenarios. The most important independent risk factor is age. The median age of ovarian cancer diagnosis is 63 with ovarian cancer diagnosed after the age of 55 in 68.6% of women. Other risk factors include history of infertility, polycystic ovarian syndrome, endometriosis, IUD use, tobacco abuse, and a genetic predisposition (including BRCA and Lynch syndrome). Protective factors include past oral contraceptive use (for five years), multiparity, history of breastfeeding (>12 months), and past tubal ligation.

With regard to symptomology, the most common presenting symptoms of a pelvic mass are pelvic pain and pressure. Determining the acuity of onset, specific location, and duration of the pain along with other associated factors will narrow the differential diagnosis.

In 2007 the Gynecologic Cancer Foundation published a consensus statement regarding ovarian cancer symptoms. Historically ovarian cancer was called the “silent killer.” However, recent studies have shown this term is misleading. The following symptoms are much more likely to occur in women with ovarian cancer: bloating, pelvic or abdominal pain, difficulty eating or feeling full quickly, and urinary symptoms such as urgency or frequency. Women with ovarian cancer report that symptoms are persistent and represent a change from normal for their bodies. Women who have any combination of these daily symptoms for more than a few weeks should see their gynecologist for prompt evaluation. www.foundationforwomenscancer.org. Asking appropriate questions can help us to identify these factors and symptoms in our patients.

A comprehensive physical exam must be performed. The physical exam should be individualized to each patient but should include an abdominal exam and pelvic exam, including a rectovaginal exam. A proper abdominal exam should include inspection and palpation to assess for abdominal distension, ascites, and/or an abdominal mass. The pelvic exam should include a speculum exam and bimanual exam. The size, consistency, contour, mobility and location or laterality of a mass should be noted. Lastly, a rectovaginal exam allows for
further palpation of the ovary posteriorly, identification of rectal masses, and posterior cul-de-sac nodularity consistent with malignancy or endometriosis. It should be remembered that the absence of an adnexal mass on exam does not exclude the presence of a possible pelvic mass. Small masses might not be palpable and might only be found with imaging. Distinct characteristics of malignant pelvic masses include: solid mass, irregular in contour, fixed, bilateral, associated with posterior cul-de-sac nodularity, and ascites. In contrast, characteristics of benign pelvic masses include: mobile, cystic, smooth in contour, and unilateral (1,3).

Once the patient has been interviewed, exam completed and acuity of the situation assessed, proceed with radiologic and laboratory evaluation. The first line imaging modality is a transvaginal pelvic ultrasound. Muto stated, “The most important factor used to determine the clinical suspicion of a malignancy of an adnexal mass is the appearance on imaging…TVUS is the preferred study.” (5) The advantages of ultrasound include its widespread availability, tolerability, relatively low expense, lack of radiation, and distinct characteristics available to differentiate benign and malignant pelvic masses.

Sonographic characteristics suggestive of a malignant mass include (6):
- Solid component that is not hyperechoic and is often nodular or papillary. (Fig. 1A and 2)
- Septations, if present, that are thick (>2-3 mm).

(Continued on Page 16)
Sonographic characteristics of benign masses include:

- Unilocular
- Thin walled
- Sonolucent
- Smooth, regular borders

Regardless of menopausal status, a mass with the above characteristics are overwhelmingly benign, malignancy rate is 0-1%. In a study by Modesitt, et al, 2,763 postmenopausal women with simple cysts less than 10 cm were followed with ultrasound. Spontaneous resolution was noted in two thirds. No cancers were detected with a mean follow-up of 6.3 years. (9) It is important for gynecologists to be able to perform and interpret pelvic ultrasounds. Computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET) should NOT be used for initial evaluation of an adnexal mass (1). MRI may have superior ability to correctly classify malignant masses and is most helpful in differentiating the origin of non-gynecologic adnexal masses. CT is best used to evaluate the abdomen for metastasis when cancer is suspected based on TVUS. However, these studies are extremely expensive and after a thorough evaluation by pelvic and abdominal ultrasound these are usually of limited value (1).

In addition to radiologic assessment, laboratory evaluation with serum markers should be offered. The utility of these tests is to help confirm or make the diagnosis. The most extensively studied serum marker studied to distinguish benign and malignant pelvic masses is CA-125. It must be considered that many benign inflammatory processes and even benign adnexal masses such as endometriomas or leiomyomas can show elevated levels. Therefore, it has been suggested that CA-125 levels are most sensitive in postmenopausal women. Premenopausal women who have a normal CA-125 level and sonographic findings consistent with benign features can be observed (1). Other markers, such as β-HCG can identify masses associated with pregnancy and when ordered along with LDH and AFP can identify certain germ cell tumors. Inhibin A and B can identify granulosa cell tumors. CEA and CA 19-9 may be elevated in mucinous and endometrioid neoplasms. Lastly, human epididymis protein (HE4) has also been approved for monitoring disease progression and recurrence.

Next in the workup is to answer the next questions: Are we sure the pelvic mass is benign or malignant? Should we operate or refer? This last question is one of the most difficult. Many studies show that women with ovarian cancer with initial surgery and care by a gynecologic oncologist have improved overall survival rates (1). The Society of Gynecologic Oncologists (SGO) and American Congress of Obstetricians and Gynecologists (ACOG) collaborated on referral guidelines for a newly diagnosed pelvic mass (Box 1)(10).

<table>
<thead>
<tr>
<th>SGO and ACOG Referral Guidelines for a Newly Diagnosed Pelvic Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premenopausal (younger than 50 years)</strong></td>
</tr>
<tr>
<td>• CA-125 levels greater than 200 units/mL</td>
</tr>
<tr>
<td>• Ascites</td>
</tr>
<tr>
<td>• Evidence of abdominal or distant metastasis (by results of examination or imaging study)</td>
</tr>
<tr>
<td>• Family history of breast or ovarian cancer (in a first degree relative)</td>
</tr>
<tr>
<td><strong>Postmenopausal (older than 50 years)</strong></td>
</tr>
<tr>
<td>• Elevated CA-125 levels</td>
</tr>
<tr>
<td>• Ascites</td>
</tr>
<tr>
<td>• Nodular or fixed pelvic mass</td>
</tr>
<tr>
<td>• Evidence of abdominal or distant metastasis (by results of examination or imaging study)</td>
</tr>
<tr>
<td>• Family history of breast or ovarian cancer (in a first degree relative)</td>
</tr>
</tbody>
</table>

In conclusion, the workup of every pelvic mass is not the same and not all pelvic masses are created equal. Thus, gynecologists should be able to ask appropriate questions, perform a comprehensive physical exam, perform and interpret transvaginal and transabdominal ultrasounds, and order and interpret the appropriate labs so that the proper diagnosis may be made. When to refer or operate, and how best to care for these patients should be part of
“The Workup of a Pelvic Mass”

(Continued from Page 16)

the counseling. This information should help to alleviate these women’s fears and anxieties, comfort them as needed, answer their questions, and aid in proper care and improve survival.

References
Unfortunately, our economic status has remained relatively the same the past few years. The Medical Education Foundation relies more and more 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, 2014. As you can see, we were once again down in corporate contributions but individual contributions remain steady. 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 Resident Research Grant- encouraging research in osteopathic OB/GYN residency and fellowship programs.

The 81st Annual Conference of the ACOOG hosted four ongoing funded lectureships. The seventeenth annual MEFACOOG Barbara Hawkes Memorial Lecture; also the college’s first endowment memorial lectureship, was given by W. Lee Irving, DO. The thirteenth annual MEFACOOG Distinguished Lecture was presented by Ronald Librizzi, DO. These is the ninth of ten year endowment by the friends and colleagues of Gail Goldsmith and Wyeth. MEFACOOG Gail Goldsmith Memorial Lectureship was presented this year by Sister Anne Brooks, DO.

The ninth of a ten year endowment of the MEFACOOG Past President’s Honorary Lectureship was presented by Jim Dethmer at our 2013 Fall Conference in Chicago, IL.

The National Student Society of the ACOOG met for the seventh time in Chicago, IL at the ACOOG Fall Conference. The online Research Training Course was funded for all residency programs through a MEFACOOG grant. These projects would not be possible without the support of you, the donors. Thank you for your continuing support.

<table>
<thead>
<tr>
<th></th>
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<td><strong>Year Ended December 31, 2014</strong></td>
<td><strong>Year Ended December 31, 2014</strong></td>
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</tr>
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<td><strong>Current Assets</strong></td>
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<td>Cash ................................................................. $14,304</td>
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<td>Due from ACOOG ................................................................. $ 0.00</td>
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<td><strong>Expenses</strong></td>
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<td><strong>Total Liabilities and Net Assets</strong> ................................................................. $538,799</td>
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<tr>
<td>Support Services ........................................................................ $72,555</td>
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<td><strong>Total Expenses</strong> ................................................................. $118,636</td>
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<td><strong>Net Assets, Beginning of Year</strong> ........................................ $534,620</td>
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<td><strong>Net Assets, End of Year</strong> ........................................................ $538,799</td>
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INTRODUCTION

Postpartum depression (PPD) affects up to 15% of mothers [1] and is the most common problem of childbearing [2]. It is well documented that despite the high incidence of PPD it is under diagnosed and under treated [3]. Over the last several decades the Edinburgh Postnatal Depression Scale (EPDS) has become the most widely studied and used screening tool for postpartum depression (PPD) [4,5].

It is also well understood that there are certain antenatal risk factors that put women at a higher risk for developing PPD. These include: anxiety or depressive symptoms during the pregnancy, a past history of psychiatric illness, stressful life events during the pregnancy, poor social support, and/or marital or relationship difficulties. Other more moderately associated risk factors include adolescence, complications of pregnancy, and low socio-economic status [6].

At the Doctors Hospital Women’s Health Center (WHC) in Columbus, OH we felt that our patient population suffered from many of the above risk factors. In an attempt to more effectively diagnosis PPD and help provide treatment for these women, in 2011, we began using the EPDS to screen all patients for PPD at their 6-week postpartum visit.

After 2 years of screening we began to ask the following questions:
Do we need to screen all postpartum patients at the WHC for postpartum depression with the EPDS? Can we reduce screening to only those with antenatal risk factors for postpartum depression? What are the antenatal risk factors for our patients at the WHC?

OBJECTIVES

1. To identify risk factors associated with PPD specific to the patient population at the Doctors Hospital WHC.
2. To determine if all women at the WHC need to be screened postpartum with the EPDS or only those women with significant antenatal risk factors.

METHODS

- Retrospective descriptive chart review
- IRB approval was obtained by the OhioHealth IRB
- 345 Women analyzed from Feb 2011 through June 2013 (Figure 1)
- Compared EPDS results of positive (≥10) or negative (<10) for a large set of psychosocial risk factors for PPD.
- Significant risk factors were combined and analyzed to determine ability to be used as an antenatal screening tool prerequisite to the EPDS.
- Statistical analysis performed with SPSS Version 22 (Chicago, IL).
“Assessing the Need of the Edinburgh Postnatal Depression Scale as a Primary Screening Tool for Postpartum Depression in a Resident Clinic”

(Continued from Page 19)

Table 1. Distribution of Maternal Demographics in Association with PPD and Continuous Variables

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>PPD</th>
<th>N</th>
<th>Mean</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>208</td>
<td>26.3 ± 6.7</td>
<td>0.088</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>49</td>
<td>24.8 ± 5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at first sexual intercourse*</td>
<td></td>
<td></td>
<td></td>
<td>0.04</td>
</tr>
<tr>
<td>Negative</td>
<td>199</td>
<td>17.3 ± 3.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>48</td>
<td>16.1 ± 2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of lifetime sexual partners</td>
<td></td>
<td></td>
<td></td>
<td>0.031</td>
</tr>
<tr>
<td>Negative</td>
<td>195</td>
<td>3.2 ± 3.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>43</td>
<td>5.2 ± 5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravity*</td>
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<td></td>
<td></td>
<td>0.622</td>
</tr>
<tr>
<td>Negative</td>
<td>208</td>
<td>3.3 ± 2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>49</td>
<td>3.4 ± 1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity*</td>
<td></td>
<td></td>
<td></td>
<td>0.983</td>
</tr>
<tr>
<td>Negative</td>
<td>208</td>
<td>1.7 ± 1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>49</td>
<td>1.7 ± 1.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean calculated in years

Table 2. Distribution of Maternal Demographics in Association with PPD and Categorical Variables

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>N</th>
<th>Postpartum Depression</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>159</td>
<td>97</td>
<td>0.015</td>
</tr>
<tr>
<td>Married</td>
<td>90</td>
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<tr>
<td>Divorced</td>
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<td>5</td>
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</tr>
<tr>
<td>History of STI</td>
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<td>0.172</td>
</tr>
<tr>
<td>No</td>
<td>183</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td></td>
<td></td>
<td>0.101</td>
</tr>
<tr>
<td>No</td>
<td>182</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Alcohol use</td>
<td></td>
<td></td>
<td>0.957</td>
</tr>
<tr>
<td>No</td>
<td>252</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Drug use</td>
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<td>0.213</td>
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<tr>
<td>No</td>
<td>228</td>
<td>187</td>
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</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>History of psychiatric illness</td>
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<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>194</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>63</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Complicated pregnancy</td>
<td></td>
<td></td>
<td>0.041</td>
</tr>
<tr>
<td>No</td>
<td>201</td>
<td>168</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Mode of delivery</td>
<td></td>
<td></td>
<td>0.409</td>
</tr>
<tr>
<td>Vaginal</td>
<td>204</td>
<td>163</td>
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</tr>
<tr>
<td>Cesarean</td>
<td>53</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on Page 21)
“Assessing the Need of the Edinburgh Postnatal Depression Scale as a Primary Screening Tool for Postpartum Depression in a Resident Clinic”

(Continued from Page 20)

RESULTS

- Of the 345 women studied, a total number of 257 women from the WHC were included and 19% developed PPD (Figure 1).
- The significantly associated psychosocial risk factors for our population at the WHC included (Tables 1 and 2):
  - Age at first intercourse
  - Number of lifetime sexual partners
  - Marital status
  - History of physical abuse
  - History of emotional abuse
  - History of sexual abuse
  - History of psychiatric illness
  - Evidence of a lack of support during the pregnancy
  - Evidence of significant life stressors during the pregnancy
  - Complications with the pregnancy
- When the above factors were tested as a screening tool we found that of the women with PPD 80% (39/49) had at least one risk factor present. The PPV was 24% and the NPV was 89% (Figure 2 and Table 3).

CONCLUSIONS

- We need to continue to screen all women for PPD with the EPDS whether they do or do not have antenatal risk factors.
- Sexual behavior is a risk factor for PPD in our Doctors Hospital WHC population.

REFERENCES

ABSTRACT:

Objectives: Methamphetamine is a potent sympathomimetic drug known to produce acute vasoconstriction. Here, we assess the incidence and morbidity of hypertensive disorders in pregnancy (pHTN) among methamphetamine users compared to non-users.

Study Design: This was a single-center, retrospective study performed over an eleven-month period (January 2012 – November 2012). Fifty-two methamphetamine users were identified and compared to 104 age matched controls. The methamphetamine users with pHTN (N=20) were then compared to non-users with pHTN delivered in the same time period, to determine any differences in morbidity associated with pHTN between users and non-users. Methamphetamine use was defined as self-reported use, or a positive urine drug screen (UDS) at admission for delivery. We defined pHTN as the development of any one of gestational hypertension (HTN), mild or severe preeclampsia, or chronic HTN with superimposed preeclampsia.

Results: The incidence of pHTN in 52 methamphetamine users was 38.5%, compared to 10.6% in 104 age-matched controls (relative risk 3.63, 1.88-7.01CI, P = <0.0001). There was no difference in morbidity associated with pHTN between methamphetamine users and non-users.

Conclusion: Use of methamphetamine during pregnancy increases the chance of pHTN, but does not seem to influence morbidity associated with pHTN.

BACKGROUND:

Methamphetamine is a highly addictive central nervous system stimulant with increasing popularity in women of childbearing age.1-5. Methamphetamine use causes release of norepinephrine, dopamine and serotonin, which lead to increased vascular tone (alpha mediated vasospasm) and hypertension. Current studies on the effects of methamphetamine in pregnancy have focused on growth restriction and long-term neurologic dysfunction in the offspring.6-9 Since acute methamphetamine toxicity is associated with severe hypertension, hypertensive crisis, cerebrovascular accident and intracranial hemorrhage,10,11 we decided to study the effect of methamphetamine use on the incidence of, and morbidity due to pHTN.

METHODS:

This was a single-center, retrospective cohort study of delivered patients in an area known to have a high prevalence of methamphetamine abuse.2,12 Methamphetamine use was defined as self-reported use, or a positive urine drug screen (UDS) at any point during pregnancy. UDS only detects methamphetamine use for up to seven days, hence patient report of use was also considered positive. All patients were screened at the first prenatal visit using the 4P’s Plus© Screen for Substance Use in Pregnancy, a validated screening instrument developed specifically for assessing risk of alcohol or drug use in pregnant women.13 Patients were screened again during history and physical examination at admission for delivery. Patients who denied methamphetamine use, and had a negative UDS or no UDS were categorized as non-users. UDS testing was done voluntarily, and prior to initiation of anti-hypertensive therapy.

Fifty-two methamphetamine users were identified over an eleven-month period (January through November 2012). One hundred and four age matched controls were selected from the two deliveries closest in time to the index methamphetamine user and compared to the users to determine the incidence of pHTN in users compared to non-users. We compared age-matched cohorts to reduce the influence of comorbid conditions on
development of pHTN.

A separate analysis was then performed on the twenty methamphetamine users with pHTN. These patients were compared to non-users with pHTN (N=86) who also delivered within the study period, to determine morbidity associated with pHTN. These cohorts were not age-matched.

pHTN was defined to include gestational HTN, mild and severe preeclampsia, and superimposed preeclampsia. We used ACOG Practice Bulletin #33 (2002, 2012) to define preeclampsia and severe preeclampsia, and included patients with blood pressure elevation consistent with preeclampsia but lacking proteinuria in pHTN (gestational HTN). Patients were considered to have superimposed preeclampsia if they were diagnosed with hypertension prior to 20 weeks of gestation, and had hypertensive urgency leading to delivery or worsening proteinuria, and/or other signs of severe preeclampsia. We considered use of intravenous antihypertensive agents, intrauterine growth restriction (IUGR), placenta abruption, HELLP syndrome, eclampsia, and intensive care unit (ICU) admission as morbidity associated with pHTN.

Student t-test and Fisher’s exact test were used to compare continuous and categorical variables respectively. Confidence intervals were reported at the ninety-fifth percentile. This study was conducted with approval from the Arrowhead Regional Medical Center Institutional Review Board.

**RESULTS:**

Methamphetamine users developed pHTN in 38.5% (20 of 52) cases, compared to 10.6% (11 of 104) of age-matched controls. The unadjusted relative risk of methamphetamine use leading to pHTN was 3.64 (1.89-7.01 CI, P=.<.0001). The statistical power to detect the observed 27.6% difference in incidence of pHTN was 97% based on the chosen sample size. Methamphetamine users also delivered at a slightly earlier gestational age (37.3 ± 3.1 weeks users, 38.7 ± 2.3 weeks non-users, P = 0.0002). The average age of patients was 28.6 ± 6.4 years. Additional perinatal characteristics of the two cohorts are presented in Table I.

The twenty methamphetamine users with pHTN were then compared to 86 non-users with pHTN. Methamphetamine users with pHTN were older, had higher parity, and more frequent use of other illicit substances compared to non-users with pHTN (Table II). There was a slight increase of AST and ALT in methamphetamine users with pHTN compared to non-users, persistent from admission to discharge. Other markers of morbidity associated with pHTN were not seen more often.

Twenty-six (50%) of methamphetamine users denied use but had a positive UDS, and the other 26 (50%) admitted to use. Fifteen patients that admitted to use were UDS negative at time of delivery, nine were UDS positive, and two had no UDS. Fifty-four percent of all 156 patients included in the age-matched cohorts (N=85/156) had UDS performed at time of admission. UDS was performed more often in the cohorts with pHTN (64%, N=68/106).

**CONCLUSIONS:**

This study shows that methamphetamine use in pregnancy is associated with an incidence of pHTN that is 3.6 fold higher than in non-users. This is of particular importance as methamphetamine use increases in the United States, with geographical spread from centers like ours in the West (dubbed by the National Drug Intelligence Center as the “methamphetamine capital of the United States”) to the East. The methamphetamine users in this study were older than controls, a surprising finding in comparison to other reviews that suggest age less than 20 years is a risk factor for methamphetamine use.

One limitation of this study was that UDS was not performed on all patients with pHTN, as it was done voluntarily. UDS has a short time interval to be screen positive (up to 7 days) so UDS testing will only give information about acute intoxication. Therefore, we included self-reported methamphetamine use along with UDS positive screening, with the reasoning that it would be uncommon for a patient to falsely admit to illegal activity. Despite this limitations, our rate of methamphetamine

(Continued on Page 24)
use is comparable to other reports for expected use in this area. Since patients are likely to under-report methamphetamine use, and only two thirds of patients with pHTN had admission UDS, we suspect we have underestimated the number of methamphetamine users and would therefore only have underestimated the incidence of pHTN in users.

Despite the increase in incidence of hypertensive disorders of pregnancy in methamphetamine users, we did not find a significant difference in morbidity associated with pHTN in methamphetamine users. The slight elevation in AST and ALT seen in methamphetamine users may be a direct effect of methamphetamine ingestion on the liver, but does not seem large enough to have a clinical significance.

Methamphetamine is a powerful central nervous stimulant and sympathomimetic, and is associated with IUGR, preterm birth, and childhood behavioral problems. The results of this review indicate we should add hypertensive disorders of pregnancy to the list of complications of methamphetamine use in pregnancy.

REFERENCES:

Submitted by Tara L Smith, DO, James Perez, DO, FACOOG (Dist), Laurence Stempel, MD, FACOG, Lori Crites, RN, RDMS

MEFACOOG Awards for Excellence
81st Annual Conference Posters – 3rd Place Winner
“Integrating a Formal Ultrasound Curriculum into Obstetrics and Gynecology Residency Programs”

INTRODUCTION

All OB/GYN residency programs include basic education in ultrasound but many do not have a formal curriculum or offer hands-on supervised scanning. Much of resident ultrasound education comes from senior residents who were taught by their senior residents without any review of their images. The training guidelines established by both the American College of Obstetricians and Gynecologists (ACOG) and the American Institute of Ultrasound (AIUM) state that it is important for program directors to assure the quality of ultrasound examination with proper instruction in the performance and interpretation of ultrasound scans. The goal of our study is to demonstrate how the introduction of a formal ultrasound education curriculum that includes hands-on scanning, weekly didactic sessions, and daily formal image review is superior to less intensive methods of training and will allow residents to graduate with an acceptable level of competence.

METHODS

During an 8 year period (2005-2013) three different objective structured clinical examinations (OSCE) were given to a total of 81 OB/GYN residents to assess their knowledge and skill level in performing basic obstetric and gynecologic ultrasound examinations. These exams were given to residents in five different osteopathic programs throughout the Ohio. The residents were classified by their postgraduate year status and current ultrasound education format.

Three different ultrasound education models were described. The first one included a one month ultrasound rotation with intermittent ultrasound experience in triage and the clinic. The second one included a one month rotation with maternal fetal medicine which involved watching a certified sonographer or physician performing ultrasound examinations with minimal hands-on scanning experience. The third model, which was developed and integrated into the OB/GYN residency program at Doctors Hospital in Columbus, Ohio, consisted of three components: a structured weekly reading program, hands-on supervised scanning with daily image review, and a four week ultrasound rotation with a registered obstetric sonographer during each academic year.

The OSCE had three components. The first component tested the residents’ ability to perform a basic obstetric ultrasound which included fetal presentation, placental location, and obtaining the appropriate measurements to calculate the estimated fetal weight and amniotic fluid index. The second component tested the residents’ ability to perform a basic gynecologic ultrasound consisting of measuring the uterine size, endometrial stripe and both ovaries. The third component was a written exam.

Descriptive statistics were produced, using means, medians, ranges and standard deviations for continuous variables, and percentages for categorical variables. Independent variables included academic status and ultrasound education model, where analysis of variance (ANOVA) was employed to determine statistically significant differences. All statistical analyses were performed with IBM SPSS Version 22 (Chicago, IL)

CONCLUSIONS

Of the three different ultrasound education models that we studied, our research showed that integrating a formal ultrasound education curriculum that includes a certified sonographer, weekly didactic education, and daily image review is superior in educating residents in OB/GYN ultrasound, the results were highly significant.

(Continued on Page 26)
Integrating a Formal Ultrasound Curriculum into Obstetrics and Gynecology Residency Programs

(Continued from Page 25)

### 2005-2006 OB OSCE Scores (PGY 1-4)

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Analysis of variance P<0.001

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Analysis of variance P<0.001

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Analysis of variance P<0.001

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Analysis of variance P<0.001

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Analysis of variance P<0.001

### 2012-2013 Written Exam Score (PGY3-4)

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<td>66.62-86.58</td>
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Analysis of variance P<0.001

(Continued on Page 27)
A special thanks to Ronald Librizzi, DO, FACOOG (Dist), Larry Platt, MD, FACOG and Nancy Kruse, RDMS, James J. Jenkins ii, Ph.D, William D. Clifton

“Hemoglobin A1C Levels Early in Pregnancy as Predictors of Gestational Diabetes in a County Hospital Populations”

(Continued from Page 26)

Steps to Implement A Formal Ultrasound Curriculum Into Your Residency Program

1. Schedule a hands-on ultrasound rotation for every resident each academic year
2. Hire a certified sonographer who is well trained in OB/GYN ultrasound and who enjoys teaching
3. Hire faculty who are qualified and willing to teach OB/GYN ultrasound
4. Conduct formal daily image review with sonographer and/or faculty member
5. Assign weekly reading didactics
6. Adopt a four-year curriculum with defined goals and objectives
Membership Donations
Cumulative October 1999 through December 31st, 2014

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Membership Donations
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Michael Weiss, DO
Patricia Wilhelm, DO
Janet L. Zurovchak, DO

**CENTURY LEVEL $100-499**
Diane A. Adams, DO
Ahmad I. Al-Jerdi, DO
William Anderson II, DO
Shalini Arnett, DO *
Amy Articolo, DO *
Gyasi Askia, DO *
Diane Aslanis, DO
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David Stroh, DO
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Scott C. Syndergaard, DO *
Rick A. Visci, DO *
Robert T. Walsh, DO *
Bonita Wang, DO *
Kimberly Warren, DO *
Michael Weiss, DO
Patricia Wilhelm, DO
Janet L. Zurovchak, DO

**CENTURY LEVEL $100-499**
Diane A. Adams, DO
Ahmad I. Al-Jerdi, DO
William Anderson II, DO
Shalini Arnett, DO *
Amy Articolo, DO *
Gyasi Askia, DO *
Diane Aslanis, DO
Terry King Badzinski, DO
Manuel Ballas, DO
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