There Is Wide Variation in Genetic Testing of Sperm-Donor Applicants


Sims CA, Callum P, et al:

Fertil Steril 2010; 94 (June): 126-129

The American College of Medical Genetics and the American Society of Reproductive Medicine provide guidelines for genetic testing for sperm donors.

Objective: To assess what genetic tests are being performed on sperm-donor applicants in the United States. Design/Setting: Electronic survey of 18 sperm banks in 12 states describing their genetic testing practices. Results: Cystic fibrosis carrier screening was performed on all patients, and chromosome analyses and hemoglobin evaluations were performed on the majority of potential sperm-donor applicants. Tay-Sachs disease-carrier screening was performed on most donors of Ashkenazi Jewish heritage. Overall, there is significant variation in screening for other genetic disorders. Individual sperm banks use different testing sites for evaluation. There is no standardization of genetic testing for potential sperm donors, although guidelines have been published by the American College of Medical Genetics and the American Society of Reproductive Medicine. Conclusions: Genetic testing performed on sperm donors is subject to considerable variation at sperm banks throughout the country. Reviewer’s Comments: An interesting article describing genetic testing policies at various sperm banks in the United States. As noted, there is considerable variation and lack of standardization. For the practitioner involved in donor insemination, “know thy donor and know thy sperm bank” are important precepts. (Reviewer-Berel Held, MD).

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Keywords: Genetic Testing, Sperm Donors

Print Tag: Refer to original journal article
What Is the Mechanism of Cardiovascular Risk in Women With PCOS?

C-Reactive Protein and Homocysteine Levels Are Associated With Abnormal Heart Rate Recovery in Women With Polycystic Ovary Syndrome.

Kaya C, Akgul E, et al:

Fertil Steril 2010; 94 (June): 230-235

Abnormal heart rate recovery interval in women with polycystic ovarian syndrome may be a marker for cardiovascular autonomic dysfunction.

Objective: To assess heart rate recovery in women with polycystic ovarian syndrome (PCOS) and its correlation with C-reactive protein and homocysteine levels.

Design/Participants: Prospective, controlled study of 68 women with PCOS and 68 healthy controls matched for age and body-mass index.

Methods: Heart rate recovery following a standardized exercise stress test was measured and correlated with serum levels of CRP and homocysteine.

Results: Heart rate recovery was significantly depressed in women with PCOS, and abnormal heart rate recovery was associated with high levels of CRP and homocysteine, both independent determinants of heart rate recovery.

Conclusions: Abnormal heart rate recovery following an exercise stress test may be an indicator of cardiovascular autonomic dysfunction promulgated by elevated levels of C-reactive protein and homocysteine.

Reviewer's Comments: This was an interesting control study of normal women and women with PCOS, in which the authors have tried to provide an explanation for the increased cardiovascular risk suffered by women with PCOS. They postulate that this cardiac risk, presumably secondary to autonomic dysfunction, may be mediated by abnormal levels of C-reactive protein and homocysteine. Perhaps, but why these levels are elevated in women with PCOS is still unclear. (Reviewer-Berel Held, MD).

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Keywords: Heart Rate Recovery, Polycystic Ovary Syndrome

Print Tag: Refer to original journal article
Bilateral mucinous ovarian carcinoma is nearly always metastatic in origin.

**Objective:** To summarize the most current information on mucinous ovarian carcinoma with respect to clinical, pathologic, genetic, and molecular distinctions.


**Results:** Primary mucinous ovarian cancer should be considered as separate and distinct from other epithelial ovarian tumors. They are frequently seen adjacent to areas of benign or borderline mucinous histology as opposed to serous tumors, thus suggesting a continuum from benign to malignant progression of disease not observed in other epithelial cancers. Eighty percent of mucinous ovarian tumors are metastatic, particularly when bilateral lesions exist. These also have a markedly worse prognosis than other ovarian epithelial tumors, which is primarily because of their platinum and taxane resistance.

**Conclusions:** Primary mucinous ovarian cancer, for many reasons, is distinct and separate from other epithelial ovarian cancers, both in terms of its histopathology and genetic and molecular distinctions, as well as its response to traditional chemotherapy.

**Reviewer's Comments:** This is an excellent review article on mucinous ovarian carcinoma and makes a strong case for considering this entity as separate and distinct from other epithelial ovarian cancers. Its presentation is different, its molecular biology unique, and its response to traditional platinum-based chemotherapy disappointing. (Reviewer-Berel Held, MD).

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Keywords: Mucinous Ovarian Carcinoma

Print Tag: Refer to original journal article
The risk for osteoporosis is both genetic and environmental.

**Objective:** To examine the degree of tracking of bone mineral density and content during childhood and adolescence, and to measure variation in tracking relative to age, sexual maturation, and changes in growth status.

**Design/Participants:** Prospective, longitudinal study of 1554 boys and girls, ages 6 to 16 years, who underwent bone mineral density and content measurements by DEXA scan of the whole body, spine, hip, and forearm.

**Methods:** Age-, sex-, and race-specific Z-scores (measures of standard deviation from the mean) were calculated over a 3-year period to determine whether bone mineral density at one point in time continued through another point in time during growth and maturation.

**Results:** Bone tracking was strongly evident, even after adjusting for the effects of age, maturation, and growth.

**Conclusions:** Bone density does show a high degree of tracking over a 3-year period in children and adolescents. Children with low bone density are likely to continue on this trajectory unless effective interventions are instituted.

**Reviewer's Comments:** This was a good longitudinal study exemplifying the concept of tracking, ie the stability of a characteristic during growth. In short, children with low bone mineral density at one point in time continued to have low bone mineral density at a later point in time in this study over a 3-year time frame. This study adds support to a genetic-based contribution to bone mineral density and to the importance of quality of nutrition early in life and during childhood. All of these are determinants and effectors of ultimate adult bone mineral density and risk of fracture and osteoporosis. Osteoporosis has its genesis way, way earlier than in adulthood. (Reviewer-Berel Held, MD).

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**Keywords:** Bone Mass, Density

**Print Tag:** Refer to original journal article
Severe dysmenorrhea is associated with increased contractility of the uterus and may result in an increased risk for retrograde menstrual flow and expulsion of endometrial tissue into the peritoneal cavity.

**Objective:** To investigate early menstrual characteristics associated with later onset of a diagnosis of endometriosis.

**Design:** Case-control study.

**Participants:** 268 Australian women with surgically confirmed moderate-to-severe endometriosis and 244 control subjects.

**Methods:** Women between ages 18 and 55 years were identified for this case-control study. Subjects were recruited from a media campaign over the years 1996 through 2002 for a genetic study of endometriosis. There were approximately 970 women who responded to the media campaign who were surgically diagnosed with endometriosis, but they had no affected sibling who might qualify for the original genetic study. From these women, a group was identified who had moderate-to-severe endometriosis and no first-degree relative who had a history of endometriosis. They randomly selected 310 potential cases and invited all of them to participate, of whom only 2 were found to be ineligible. Control participants were enrolled using the Australian Twin Registry and were randomly selected from women frequency-matched to the cases with regard to age (5-year groups) and geographic location. The final control group included 244 women who agree to participate and return the questionnaires. Data were collected for menstrual characteristics, including age at menarche, cycle length, heaviness of flow, duration of natural menstruation, and pelvic pain associated with menstruation. They also collected information about type, frequency, and timing of sanitary protection and information about sexual intercourse during menstruation. The 268 women with moderate-to-severe endometriosis were compared with 244 controls.

**Results:** There was a strong and inversely associated relationship with endometriosis and menarche after age 14 years (odds ratio [OR], 0.3; 95% confidence interval [CI], 0.1 to 0.6). In addition, a history of dysmenorrhea was associated with the diagnosis of endometriosis (OR, 2.6; 95% CI, 1.1 to 6.2). A shorter menstrual cycle length did show a suggestive trend of association but was not found to be clearly associated with endometriosis. A subsequent risk of endometriosis was not associated with duration of natural menstruation or heaviness of menstrual flow. There also was no association with type of sanitary protection or history of sexual intercourse during menstruation. **Conclusion:** Women who have a history of early dysmenorrhea have an increased risk for endometriosis. Women who give a history of late age at time of menarche have a decreased risk of endometriosis.

**Reviewer's Comments:** The date of onset of disease of endometriosis is almost impossible to determine. There is considerable individual variation in symptom onset and degree of disease-producing symptoms. These issues place this study at considerable risk for a recall bias. (Reviewer-John Jennings, MD).

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Keywords: Endometriosis, Early Menstrual Characteristics

Print Tag: Refer to original journal article
The risk of uterine rupture with single-layer closure is approximately twice that of a double-layer closure.

**Objective:** To evaluate the risk of uterine rupture associated with single-layer versus double-layer closure of the uterus.

**Design:** Multicenter, case-control study. **Subjects:** 96 cases of uterine rupture.

**Methods:** Records were reviewed from 10 centers in the Montreal-Quebec Metropolitan area over a period from 1992 through 2002. Subjects were identified who had undergone a trial of labor after a prior cesarean section and experienced complete uterine rupture. For control purposes, a group of patients were identified who underwent a trial of labor after a single low transverse cesarean delivery without uterine rupture. Eligibility criteria included women over 24 weeks of gestation with a trial of labor irrespective of their final mode of delivery. Patients were excluded if they had a prior classical incision or a J-shaped uterine scar or a previous extension above the low transverse incision, a prior transmural myomectomy, or a history of placenta previa. A complete opening of the uterus, including the visceral serosa or the vesical wall, was considered as a definition of uterine rupture. Women who had an incomplete uterine rupture, or what could be termed a “uterine dehiscence,” were excluded from the study and were not eligible to be control participants. Women in the case group and those in the control group were matched for the time period and the hospital. Method of uterine closure and type of suture material were obtained from the operative reports.

**Results:** Over the study period from 1992 and 2002, there were 288,000 deliveries in the 10 participating centers. The investigators identified 96 cases of uterine rupture and used 288 control participants. There were 35 cases of 96 in the case group who underwent single-layer closure and 58 of 288 in the control group who underwent single-layer closure. The odds ratio (OR) for uterine rupture with single-layer closure was 2.69 (95% confidence interval [CI], 1.37 to 5.28). Birth weight >3500 grams was also linked with a risk for uterine rupture (OR, 2.03; 95% CI, 1.21 to 3.38). The OR for adverse neonatal outcome with single-layer closure was 2.89 (95% CI, 1.01 to 8.27). A prior vaginal birth was found to be a protective factor for uterine rupture.

**Conclusions:** The risk of uterine rupture with single-layer closure is approximately twice that of a double-layer closure.

**Reviewer’s Comments:** Restoration of normal anatomy should be the goal of any surgical procedure. Closure of distinct layers of the uterus is consistent with that surgical principle. It appears from the data from this study that a careful 2-layer closure of the uterus is much better than a single-layer closure. (Reviewer-John Jennings, MD).

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Keywords: Uterine Closure, Rupture

Print Tag: Refer to original journal article
Outcomes Differ According to Technique of Anal Sphincter Repair

Overlapping Compared With End-to-End Repair of Third- and Fourth-Degree Obstetric Anal Sphincter Tears: A Randomized Controlled Trial.

Farrell SA, Gilmour D, et al:

Obstet Gynecol 2010; 116 (July): 16-24

Denervation of anal sphincter is an important contributor to anal incontinence, and extensive dissection of sphincter muscle at time of repair increases the risk of denervation.

**Objective:** To determine the rate of flatal incontinence associated with overlapping repair as compared to end-to-end repair of obstetric tears of the anal sphincter.

**Design:** Prospective, randomized, controlled trial.

**Participants:** 149 primiparous women who had either a complete third- or fourth-degree tear at time of delivery.

**Methods:** Over a 6-year period from 2001 to 2007, women who had obstetric third- or fourth-degree laceration were prospectively enrolled in the study. Women were randomly assigned to receive overlapping repair or end-to-end repair of anal sphincter. The end-to-end closure was accomplished with running closure of the anal mucosa with 3-0 polyglycolic acid suture, and defects in internal anal sphincter were reapproximated with interrupted sutures of 3-0 polyglyconate. A minimum of 2 figure of 8 sutures were used for end-to-end repair of external anal sphincter. In overlapping repair, external anal sphincter was mobilized and 2 to 3 interrupted sutures, approximately 1.5 cm from the edge of the side of the external anal sphincter, were used to overlap the sphincter. These sutures had the effect of pulling one side of the muscle over the top of the other. When subjects were seen at 6 months, they completed an incontinence questionnaire and a 45-item quality-of-life instrument. They were asked to indicate any problems since surgical repair, including pain, dyspareunia, or depressive symptoms. In addition to completing a standardized questionnaire, subjects underwent anal ultrasound assessment and anal manometry at 6 months from initial repair. Investigators recorded presence or absence of defects in internal anal sphincter and defects from external sphincter.

**Results:** There were higher rates of flatal incontinence associated with women who had undergone overlapping repair as compared to those who underwent end-to-end repair, with an odds ratio of 2.44 associated with overlapping repair as compared to end-to-end repair. There was also a higher rate of fetal incontinence, with 15% in the overlapping repair group as compared to 8% in the end-to-end repair group. There is no significant difference in rate of internal and external anal sphincter defects on ultrasonography. If there was a defect in both the internal and external anal sphincters, there was a higher incidence of fecal incontinence. There was no significant difference between groups in anal sphincter function as assessed by anal manometry.

**Conclusions:** There is a lower rate of anal incontinence with end-to-end repair of third- or fourth-degree laceration as compared to an overlapping repair.

**Reviewer’s Comments:** This study has a possibility of a technical bias since the description of this technique can be considerably different than how it might actually be performed. (Reviewer-John Jennings, MD).

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Keywords: Anal Sphincter Tears, Flatal Incontinence

Print Tag: Refer to original journal article
The tendency to form ovarian cysts secondary to ovulation induction increases the risk for ovarian torsion in pregnancy resulting from the use of this type of reproductive intervention.

Objective: To describe a comparison between outcome of adnexal torsion in pregnant women and in non-pregnant women.

Design: Retrospective case-control study of the records of 41 pregnant and 77 non-pregnant women with adnexal torsion.

Methods: Study subjects were identified by using ICD-9 codes for torsion of ovary over a period from 1999 through 2008 in 2 university-affiliated tertiary hospitals. The investigators reviewed records of all pregnant women who were admitted with the diagnosis of adnexal torsion during that period. They also reviewed records of consecutive non-pregnant women with adnexal torsion as a control group. Information was obtained on demographics, medical, surgical, obstetrical, and gynecologic history and any signs and symptoms at physical examination. Admission laboratory work and ultrasonographic findings were recorded in the database.

Results: In pregnant women, these investigators found a 19.5% recurrence rate of torsion. This compared to a 9.1% rate in the control subjects. Of pregnant women with adnexal torsion, 73% of pregnancies were conceived through assisted reproductive technologies. In pregnant women, 61% had a Doppler blood flow that was falsely normal as compared to 45% of the non-pregnant women. Of pregnant women with adnexal torsion, 83.3% delivered at term gestation. Primary operative procedure used in this series of patients was laparoscopic de-torsion.

Conclusions: There is a similar presentation in both pregnant and non-pregnant women for adnexal torsion. Pregnancy that occurs by assisted reproductive technology is an important risk factor for adnexal torsion. Doppler blood flow has a high false-normal rate in pregnancies with adnexal torsion, which limits its diagnostic capability. In addition, there is a high rate of recurrence in women who are pregnant experiencing adnexal torsion.

Reviewer's Comments: When ovarian torsion occurs, it is important for the surgeon to address the causation of the torsion. The high recurrence rate of torsion in pregnant women observed in this study suggests the consideration of ovarian fixation at the time of surgery as a preventive measure. (Reviewer-John Jennings, MD).

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Keywords: Adnexal Torsion

Print Tag: Refer to original journal article
Objective: To determine the false-positive rate of prenatally diagnosed clubfoot, the risk of aneuploidy, and the treatment outcome of infants prenatally diagnosed with clubfoot.

Design: Retrospective study done over an approximately 8-year period.

Methods: Patients who were diagnosed with having an infant with isolated clubfoot were evaluated. After birth, infants were evaluated for other associated abnormalities and were followed up for 2 years. The risk of aneuploidy was determined, as well as other associated abnormalities. Subsequent treatment plans and outcome were also evaluated.

Results: There were a total of 65 patients with a prenatal diagnosis of isolated clubfoot. Of these, 25 (38.5%) were thought to be unilateral, and 40 (61.5%) were thought to be bilateral. Of 65 patients, 2 underwent pregnancy termination and 1 had an intrauterine fetal demise. There were 62 remaining live births, but 1 resulted in a neonatal death secondary to prematurity. In the unilateral clubfoot group, for 21 of 25 the diagnosis was confirmed for a false-positive rate of 16%. In the bilateral group, the false-positive rate was 7.5%. Overall, the false-positive rate for an isolated clubfoot diagnosed prenatally was 10.8%. A total of 61 infants were followed up long term. After follow-up for at least a year, 6 infants were found to have other associated abnormalities. Overall, of those having at least 1-year follow-up, 11.1% diagnosed prenatally with an isolated unilateral clubfoot subsequently were found to have a more complex disorder. Of those with prenatally diagnosed bilateral clubfoot, 14.3% were subsequently found to have a more complex disorder. Overall, of 65 patients, none were found to have an abnormal karyotype. When combining the results from this study with other studies, however, the overall risk for aneuploidy with an isolated clubfoot is 1.7%. With regard to treatment, conservative treatment was used in 75% of infants in the unilateral clubfoot group and 77.8% in the bilateral clubfoot group. At 2-year postnatal follow-up, all patients were ambulatory. Overall subsequent outcome with respect to treatment was considered either very good or excellent.

Conclusions: With a prenatally diagnosed isolated clubfoot, approximately 10% will be found to have a normally positioned foot. Approximately 10% to 13% will also be found to have a more complex disorder.

Reviewer's Comments: When the diagnosis of clubfoot is made prenatally, patients should be informed that the false-positive rate is approximately 10%. Patients should also be informed that in 10% to 13% of cases, there may be other associated abnormalities not detected until postnatal. Overall, patients should also be informed that the risk of aneuploidy is approximately 1% to 4% and that the majority of infants will do well with conservative management. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Clubfoot

Print Tag: Refer to original journal article
The addition of a rescue course of antenatal corticosteroids results in improved respiratory function, especially in infants <34 weeks' gestation.

Objective: To determine if the use of a single rescue course of antenatal corticosteroids results in an improvement in neonatal pulmonary function.

Design/Participants: Prospective, randomized, controlled trial done over a 6-year period. Patients between 26 and 34 weeks’ gestation were eligible for the study. All were believed to be at an increased risk for preterm delivery.

Methods: All patients received 1 course of antenatal corticosteroids and remained pregnant at least 14 days after this initial corticosteroid course. Patients were then randomized to 1 of 2 groups. The rescue antenatal steroid group received another course of betamethasone and the placebo group received a course of a placebo medication similar in appearance to betamethasone. Within 72 hours after delivery, neonatal pulmonary function was measured. Respiratory mechanics were determined, specifically passive respiratory compliance and functional residual capacity.

Results: There were 56 infants in the rescue steroid group and 56 in the placebo group. There was no difference with regard to demographic characteristics in either group, with specific attention paid toward head circumference, small-for-gestational age, birth weight, or APGAR scores. Patients in the rescue steroid group delivered a median of 8 days after the rescue course versus a median of 11 days in the placebo group. Respiratory compliance was improved in the rescue steroid group compared to the placebo group with a mean respiratory compliance of 1.21 mL/cm H₂O/kg versus 1.01 mL/cm H₂O/kg. The functional residual capacity was no different between groups. The difference in respiratory compliance was even greater in the rescue steroid group if infants were ≤34 weeks' gestation compared to the placebo group. In the rescue steroid group, 13% required ≥30% oxygen compared to 29% in the placebo group. Also, in the rescue steroid group, 9% required ≥40% compared to 23% in the placebo group. Of infants in the rescue steroid group, 34% developed respiratory distress syndrome compared to 56% in the placebo group.

Conclusions: Infants who received a rescue course of antenatal corticosteroids had improved respiratory function compared to those who received a placebo.

Reviewer's Comments: It would appear that the additional rescue course of antenatal corticosteroids results in an improved pulmonary function compared to receiving a placebo. This was more evident in infants ≤34 weeks' gestation. There does not appear to be any adverse effects of this rescue course of steroids; however, the numbers in this study are small and larger prospective studies will need to be undertaken to recommend the use of a rescue course of steroids. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Respiratory Compliance, Preterm Infants, Antenatal Steroids

Print Tag: Refer to original journal article
Intimate-Partner Violence Is Responsible for Many Pregnancy-Associated Homicides

Intimate-Partner Homicide Among Pregnant and Postpartum Women.

Cheng D, Horon IL:

Obstet Gynecol 2010; 115 (June): 1181-1186

A significant number of pregnancy-associated homicides are a result of intimate-partner violence within the first 3 months of pregnancy.

Objective: To determine the frequency of pregnancy-associated homicides, to estimate the percent of those homicides performed by a current or former intimate partner, and to determine if there were any risk factors associated with these deaths.

Design: Retrospective review done over a 16-year period.

Methods: During this time, public records in the state of Maryland were reviewed to identify pregnancy-associated deaths. Information was obtained regarding ethnicity, age, educational level, marital status, and specific cause of death. The homicide was classified as pregnancy-associated intimate-partner homicide if the perpetrator was either a current or former intimate partner and if the pregnancy-associated homicide took place either during pregnancy or within 1 year of delivery.

Results: Overall, there were 110 homicides that were considered pregnancy-associated deaths. This was the leading cause of pregnancy-associated deaths in the state of Maryland and was also 17% of deaths during the study period. Of 110 pregnancy-associated homicides, the perpetrator was identified in 95. The perpetrator was an intimate partner in 54.5% of cases and not a partner in 31.8%. In the remaining cases, the perpetrator was not identified. Overall, if the perpetrator was identified, it was found that 63.2% were intimate partners. A total of 51.8% of injuries were caused by firearms. If the homicide took place during pregnancy, there were no surviving fetuses. There were 66 homicides in women who were not pregnant but who had recently delivered an infant. Victims of both non-partner and intimate-partner homicides were more likely to be African American, age <25 years, and unmarried. Women in the intimate-partner group were more likely to have completed >12 years of education compared to those in the non-intimate partner group. The intimate-partner homicide cases were found to be 4 times more likely in the African-American population than in the white female population. The group at greatest risk was African-American women age <25 years.

Conclusions: The greatest number of pregnancy-associated homicides was committed by intimate partners, most within the first 3 months of pregnancy.

Reviewer's Comments: Because of the significant number of pregnancy-associated homicides, it is important for the obstetrician to question the patient either pre-conceptually or early in pregnancy regarding any physical abuse, participation a relationship that is threatening or abusive, or having been forced to have sexual activities that the woman deemed uncomfortable. Screening for domestic violence will hopefully result in a decrease in subsequent maternal mortality. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Intimate-Partner Homicide, Pregnancy, Postpartum

Print Tag: Refer to original journal article
Researchers Compare Transverse vs Vertical Incision for Emergency Cesarean Delivery

Comparison of Transverse and Vertical Skin Incision for Emergency Cesarean Delivery.

Wylie BJ, Gilbert S, et al:

Obstet Gynecol 2010; 115 (June): 1134-1140

Although a vertical skin incision allows for a more rapid delivery of an infant in an emergency cesarean section than a transverse skin incision, neonatal outcome is no different.

Objective: To determine if there is a difference in either maternal or neonatal outcomes in women undergoing emergency cesarean deliveries having either a transverse skin incision versus a vertical skin incision.

Design/Methods: Retrospective, multicenter study done over a 2-year period of patients who underwent emergent cesarean section with a singleton gestation. Both primary and repeat cesarean sections were included. Indications for emergency cesarean section included umbilical cord prolapse, placental abruption, hemorrhage secondary to placenta previa, uterine rupture, or non-reassuring fetal heart rate tracing. The type of skin incision was determined. Outcomes included incision-to-delivery time, incision-to-closure time, uterine rupture, and maternal and neonatal outcomes.

Results: During the study period, there were 3525 emergency cesarean sections performed of a singleton infant. Transverse incision was used in 70.9% compared to a vertical skin incision in 29.1%. In patients undergoing an emergent primary cesarean delivery, median incision-to-delivery time was 1 minute longer in patients having a transverse skin incision compared to a vertical incision (4 minutes vs 3 minutes). In patients undergoing an emergent repeat cesarean delivery, the median incision-to-delivery interval was 2 minutes greater in the transverse skin incision group at 5 minutes compared to 3 minutes in the vertical incision group. Overall, the median total operative time was less in the primary transverse skin cesarean delivery group by 3 minutes compared to the vertical incision group and 4 minutes less in the repeat cesarean section group for the transverse incision compared to vertical incision. There was no difference in either intraoperative injuries or postoperative ileus between the groups. Wound hematomas and wound infections were also similar between groups; however, postpartum blood transfusions were more frequent in both the primary and repeat cesarean section group in women undergoing vertical skin incisions. There was also an increase in the incidence of postpartum endometritis in the emergent primary cesarean section group having a vertical skin incision. With respect to neonatal outcomes, there was an increase in neonatal intubation in the delivery room, umbilical artery cord pH <7, or hypoxic ischemic encephalopathy in those infants delivered with a vertical skin incision. Conclusions: In an emergent cesarean delivery, a vertical skin incision allows for a more rapid delivery of the infant; however, this is not associated with improved neonatal outcomes.

Reviewer's Comments: Neonatal outcomes were certainly not improved using vertical incision; however, a vertical incision may have been chosen in the most serious situations. Also, the surgical experience regarding type of skin incisions was not commented upon, which may have impacted not only the choice of the incision but the rapidity of the delivery. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Emergency Cesarean Delivery, Transverse vs Vertical Skin Incision

Print Tag: Refer to original journal article
Objective: To determine whether single-lens distance glasses result in fewer falls in older wearers compared with the use of multifocal glasses.

Design/Participants: Randomized, controlled trial involving men and women in retirement communities, age >80 years, or age >65 years and having had a fall within the previous 12 months.

Methods: Of 606 regular users of bifocal, trifocal, or progressive lenses, half were randomized to receive single-lens glasses for walking and other activities. The individuals were followed up for 1 year, and the number of falls and injuries resulting from falls were compiled.

Results: Conversion to single-lens glasses resulted in an 8% fewer falls, significantly reducing the number of all falls and injuries.

Conclusions: Provision of single-lens glasses for individuals at risk for falls who participate in regular outdoor activities is an effective fall-prevention strategy. Those with low levels of outdoor activity, however, may be adversely affected by switching from multifocal to single-lens glasses.

Reviewer's Comments: This neat little research article appearing in the British Medical Journal has nothing to do with obstetrics and gynecology but a lot to do with aging and the perils that accompany increasing age. There are many things that we as physicians can advise patients on, and constructive suggestions for the osteoporotic, postmenopausal woman prone to falls and fractures may benefit from the advice suggested in this report. I know for a fact, from a personal standpoint, that my tennis game suffers when I forget to switch from progressive to single-lens glasses—at least that is my excuse. (Reviewer-Berel Held, MD).

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Is Flaxseed Supplement a Cancer Preventive/Suppressor?

Decreased Severity of Ovarian Cancer and Increased Survival in Hens Fed a Flaxseed-Enriched Diet for 1 Year.


Flaxseed dietary supplementation reduces the severity of ovarian cancer and overall mortality in egg-laying hens.

**Objective:** To determine if a flaxseed-enriched diet has an effect on ovarian cancer in the laying hen.

**Methods:** Hens were fed a 10% flaxseed-enriched or standard diet for 1 year. The incidence and severity of ovarian cancer were determined in the 2 groups, and eggs from these hens were collected and analyzed for omega-3 fatty acid levels.

**Results:** Hens receiving a diet of enhanced flaxseed extended the overall survival in laying hens but did not reduce the incidence of ovarian cancer. The severity of ovarian cancer in the flaxseed-supplemented group was less than in the control group, and that group's eggs incorporated more omega-3 fatty acids compared with eggs of control hens.

**Conclusions:** A flaxseed food supplementation in the laying hen resulted in a significant reduction in the severity of ovarian cancer but no change in its incidence.

**Reviewer's Comments:** What can 193 (2½-year-old) white Leghorn, egg-laying hens teach us? Well, egg-laying hens (incessant ovulators) frequently develop ovarian cancer and are the best animal model for studying this disease. One fourth of the hens here developed ovarian cancer within the year. Flaxseed is high in omega-3 fatty acids and antioxidants, the former having an anti-inflammatory activity and the latter having a cancer prevention and suppressor effect. So this study evaluated dietary intervention with flaxseed, which is the highest source of omega-3 fatty acids and antioxidants for the prevention and suppression of ovarian cancer in hens. It did not prevent the cancer, but it did lessen its severity. Indeed, flaxseed-fed hens had better overall general health and reduced mortality. Maybe there is something to the effect of flaxseed, at least in hens, on ovarian cancer progression and overall mortality. It is worth looking into further. (Reviewer-Berel Held, MD).

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Keywords: Ovarian Cancer, Flaxseed Diet

Print Tag: Refer to original journal article
Objective: To compare scar quality following cesarean section associated with subcuticular sutures versus staples.

Design: Randomized trial designed to compare healing outcomes of Pfannenstiel incisions after cesarean delivery using staples or 3 variations of subcuticular running sutures.

Methods: Patients received either a 3.0-monofilament absorbable suture, a nonabsorbable monofilament suture, or a short-term synthetic absorbable braided and coded suture of polyglycolic acid. Subcutaneous sutures were placed only when subcutaneous thickness of ≥2 cm existed, and all staples and suture material were removed on the 7th postoperative day. Suture line and healing was assessed at 8 weeks and 6 months postoperatively, and the scar was assessed using the objective Vancouver Scar Scale and the subjective Patient and Observer Scar Assessment Scale. A total of 123 patients were available for evaluation.

Results: There was no difference in either the subjective or objective scar ratings in both groups at 2- and 6-month follow-up. There was good correlation between objective and subjective scores.

Conclusions: In women undergoing cesarean section through Pfannenstiel incision, stapled and subcuticular skin closures resulted in equivalent cosmetic appearance and integrity of the scar.

Reviewer’s Comments: One can make an argument either for subcuticular suture closure of a scar versus staples, but it really boils down to the physician’s preference since the results are the same. This study probably does not have to be repeated yet again. (Reviewer-Berel Held, MD).

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Keywords: Cesarean Sections, Cosmetic Outcome

Print Tag: Refer to original journal article
A reduction in surgical infection rates results when a combination of preventive measures is consistently applied.

Objective: To study the use of the Surgical Care Improvement Project (SCIP) measures in the prevention of postoperative infection rates.

Design: Retrospective cohort study of the records of 405,720 patients involved in the SCIP.

Methods: The investigators used a retrospective database containing data from the SCIP to determine the effectiveness of the infection prevention measures in this project in predicting postoperative infection. Primary outcome measures included the ability of reported adherence to the SCIP infection-prevention process-of-care measures in the prediction of postoperative infections according to discharge information. They reviewed records from July 1, 2006, through March 31, 2008, or 405,720 patients, of whom 69% were white and 11% were black. There were 46% who were Medicare patients, and 68% had undergone elective surgery. Data came from 398 hospitals throughout the United States in which the SCIP data were being collected. The investigators used the 3 original infection-prevention measures and aggregated these into 2 separate all or non-composite scores.

Results: For this large cohort of patients, there were 3996 postoperative infections documented. A decrease in postoperative infection rates could be predicted by the composite measures of process of care. When these measures were used, the infection rate per 100,000 discharges decreased from 14.2 to 6.8 (adjusted odds ratio, 0.85; 95% confidence interval, 0.76 to 0.95). They observed that none of the individual SCIP's measurements were associated with a lower probability of infection.

Conclusions: The composite infection-prevention score is associated with a lower probability of postoperative infection. In contrast to this, individual SCIP measures are not significantly associated with a probability of lower infection.

Reviewer's Comments: This study demonstrates the vulnerability in quality data reporting. It is possible for a public report of individual preventive measures to imply a quality difference when it does not exist. The investment in time, effort, and money to track quality-care process demands that quality-of-care criteria are truly evidence based. (Reviewer-John Jennings, MD).

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Keywords: Postoperative Infection Control

Print Tag: Refer to original journal article
The volume and complexity of surgical procedures performed by gynecologic surgeons in ambulatory surgical centers is increasing; there must be a parallel effort to increase the emphasis in these facilities toward infection control.

Objective: To evaluate the infection control (IC) practice of ambulatory surgical care centers.

Design: Retrospective analysis of IC audit databases.

Participants: State Survey Agency databases from the states of Maryland, North Carolina, and Oklahoma.

Methods: The Center for Medicare/Medicaid Services requested participating states to provide data from IC audits with the intent of describing the IC practices in a sample of ambulatory surgical centers. The states of Maryland, North Carolina, and Oklahoma were selected because of the geographic distribution, the number of inspections proposed, and cost considerations of the study. State surveyors conducted full unannounced, on-site assessments of compliance with Medicare ambulatory surgical care health and safety standards. Data were collected with IC audit tools that included 5 general categories of IC. These categories were hand hygiene and use of personal protective equipment, injection safety, medication handling, environmental cleaning, and handling of blood glucose monitoring equipment. There was also an emphasis on elements beyond the primary surgical site infection prevention, since many procedures in the ambulatory surgical care centers are traditional surgeries, such as endoscopy, dental surgery, and others. A total of 68 ambulatory surgical centers (32 in Maryland, 16 in North Carolina, and 20 in Oklahoma) were assessed. For purposes of this study, the main outcome measure was considered to be the proportion of facilities with lapses in each IC category.

Results: There was at least 1 lapse in IC in 46 of 68 ambulatory surgical centers evaluated. Twelve of 68 ambulatory surgical centers (17.6%) had lapses identified in ≥3 of 5 IC categories. The most common lapses in IC included using single-dose medication vials for >1 patient, failure to adhere to recommended practices of reprocessing of equipment, and lapses in the handling of blood glucose monitoring equipment.

Conclusions: There are frequent lapses in IC in this sample of U.S. ambulatory surgical centers.

Reviewer’s Comments: The Centers for Medicare & Medicaid Services is updating the health and safety standards for IC in ambulatory surgical centers. This study demonstrates that some of the simple measures for IC are minimized or overlooked in many centers, and data are not often appropriately collected. There is clearly room for improvement in this area. (Reviewer—John Jennings, MD).

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Keywords: Infection Control Practice, Outpatient Surgical Centers

Print Tag: Refer to original journal article
The decrease in hospital admissions for a diagnosis of pelvic inflammatory disease does not necessarily mean there is an overall decrease in the incidence of this disease; it more likely represents improvements in outpatient management.

**Objective:** To study trends in hospitalization for gynecologic disorders throughout the United States.

**Design:** Retrospective review of data from the Healthcare Cost and Utilization Project between 1998 and 2005.

**Participants:** 37 states contributing data on hospital discharge to the Healthcare Cost and Utilization Project.

**Methods:** Investigators used the Nationwide Inpatient Sample, which is the largest all-payer inpatient care database in the United States, to examine trends in hospitalizations for gynecologic disorders in the United States. This database contains approximately 7-million hospital stays from 800 to 1,000 hospitals per year. In that respect, it provides stratified probability samples of hospitals throughout the United States. Investigators used discharge records for women ages 15 to 54 years with ICD-9 codes indicating a principle diagnosis of gynecologic disorders. They also calculated the proportions that were associated with gynecologic surgical procedures.

**Results:** During the study period, gynecologic disorders accounted for 7% of hospitalizations in women ages 15 to 44 years and 14% of hospitalizations in women ages 45 to 54 years. Uterine leiomyoma was the most common diagnosis (27.5%), and menstrual disorders were second (12.3%). There were common gynecologic disorders diagnoses including endometriosis (9.5%), genital prolapse (7.0%), benign ovarian cysts (6.5%), and pelvic inflammatory disease (6.1%). These investigators observed an increased rate of hospitalization for menstrual disorders from 9.8% in 1998 to 13.3% in 2005. During this same period, there was a decline in rate of admissions for pelvic inflammatory disease, genital prolapse, benign ovarian cysts, and endometriosis. There was no difference in percentage of diagnoses during the study period for uterine leiomyoma.

**Conclusions:** Hospitalization in the United States among women commonly involves gynecologic disorders.

**Reviewer’s Comments:** This study represents a shift and decline in certain inpatient gynecologic admissions. Uterine leiomyoma has replaced pelvic inflammatory disease as the most common gynecologic diagnosis for hospital admission. Many gynecologic conditions are now being managed by medical therapy and by less-invasive procedures that are performed in the outpatient setting. (Reviewer-John Jennings, MD).

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Keywords: Gynecologic Disorders, Hospitalization

Print Tag: Refer to original journal article
In levator avulsion, imaging studies are directed to assess physical normality or alterations but not function; imaging and measurements of the levator muscle reveal only limited information about its function.

**Objective:** To determine if there are identifiable predictors of levator avulsion in pregnancy prior to delivery.

**Design:** Prospective, longitudinal study.

**Participants:** 488 pregnant nulliparous women.

**Methods:** Over a period from May 2005 through February 2008, 488 nulliparous women were recruited for inclusion in this study. For purposes of this study, the pregnant women were required to be a singleton pregnancy between 34 and 36 weeks of gestation, have maternal age >18 years, and have no previous pregnancies >20 weeks of gestation. Appointments were arranged at around 36 to 38 weeks for those participants who were interested in the study. All women then underwent a 4-dimensional translabial ultrasound examination in the supine position following emptying of the bladder. Body-mass index was calculated, and ultrasound measurements for bladder neck descent, subpubic arch angle, and a variety of measurements to determine pelvic floor contraction and descent were accomplished. These ultrasound assessments were repeated at the postpartum appointment. The pre-delivery demographic variables and ultrasound parameters were then compared with the postpartum information to assess the diagnosis of levator trauma.

**Results:** Of 488 pregnant women who were initially enrolled in the study, 367 returned for postpartum assessment. Of these, 87 had a spontaneous delivery, 54 had either vacuum or forceps delivery, and 126 had a cesarean section. In patients undergoing vaginal delivery, 14% were found to have a levator avulsion. There was no association with maternal age, family history of cesarean section, hialal dimensions, levator muscle strain, bladder neck descent, or subpubic arch angles with the occurrence of levator avulsion. The only identified predictor of levator avulsion was a lower body-mass index.

**Conclusions:** It is difficult or impossible to predict antepartum the possibility of major levator trauma.

**Reviewer’s Comments:** Levator avulsion at the time of delivery is a multifactorial event. Antenatal prediction of the combination of factors leading to disruption of this muscle is understandably very difficult. The associated events and conduct of the second stage of labor are the best predictors but often are inalterable. (Reviewer-John Jennings, MD).

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Keywords: Levator Trauma Prediction

Print Tag: Refer to original journal article
Objective: To determine if there is a relationship between level of maternal pregnancy-associated plasma protein-A (PAPP-A) in the first trimester and subsequent fetal growth between the first and second trimesters.

Design: Prospective study performed over an approximately 1½-year period.

Methods: Patients underwent first-trimester aneuploidy screening for Down syndrome that included maternal serum PAPP-A and maternal serum-free beta HcG in combination with a nuchal translucency. Besides the nuchal translucency, a crown rump length was performed. Patients also underwent a second-trimester ultrasound at 20 weeks’ gestation. The level of maternal PAPP-A was then correlated with interval fetal growth. Fetal growth was evaluated according to percentiles and classified as either less than the 10th percentile or greater than or equal to the 10th percentile or greater than the 90th percentile or less than or equal to the 90th percentile.

Results: 8347 patients were included in the study. Maternal PAPP-A levels were correlated with an early fetal growth rate. The lower the PAPP-A level, the slower the fetal growth rate. If a PAPP-A level was less than 0.3 multiples of the median, there was a correlation with fetal growth rate of less than the 10th percentile (odds ratio, 1.84). Even after adjusting for pre-pregnancy weight and tobacco use during pregnancy, there continued to be a similar association (odds ratio, 2.05). If the PAPP-A levels were greater than 0.3 multiples of the median, there did not appear to be any association with decreased fetal growth. Although high levels of PAPP-A were associated with increased early fetal growth rate, the association did not reach statistical significance.

Conclusions: Decreased levels of PAPP-A in the first trimester are associated with a decreased rate of fetal growth between the first and second trimesters.

Reviewer's Comments: It would appear that decreased levels of serum PAPP-A are associated with not only decreased birth weight but also a decrease in fetal growth rate between first and second trimesters. Although this relationship is interesting, the possible combination of early fetal growth measurements and low PAPP-A to predict a subsequent intrauterine growth restriction will have to be validated by further studies. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Low PAPP-A, Fetal Growth Rate

Print Tag: Refer to original journal article
A Fetal Cerebral Periventricular Halo at Midgestation May Suggest CMV Infection

Fetal Cerebral Periventricular Halo at Midgestation: An Ultrasound Finding Suggestive of Fetal Cytomegalovirus Infection.

Simonazzi G, Guerra B, et al:

Am J Obstet Gynecol 2010; 202 (June): 599.e1-599.e5

Objective: To identify an intracranial sonographic finding that is possibly predictive of fetal cytomegalovirus (CMV) infection.

Design: Prospective study done over a 2-year period.

Methods/Participants: During this time, pregnant patients identified with primary CMV infection were evaluated. Patients were offered amniocentesis for the confirmation of intrauterine CMV infection using quantitative polymerase chain reaction (PCR) on amniotic fluid. A detailed ultrasound was also performed, which included a transvaginal neurosonographic evaluation. All patients were between 20 and 22 weeks’ gestation. Both fetal and neonatal outcomes were then assessed.

Results: Originally, there were 218 women with primary CMV infection referred to the authors’ institution. Of these patients, 135 underwent amniocentesis to evaluate fetal CMV infection. In 103 cases, a low viral load was noted in the amniotic fluid. The viral load was high in 32 cases. In pregnancies with a low viral load, no sonographic abnormalities were seen. Of these 83 patients who did not have an amniocentesis, no abnormal sonographic findings were noted; all were born asymptomatic. Seven, although infected, were asymptomatic at birth and at subsequent follow-ups. There were 8 infants who had abnormal neurosonographic findings; all had a high viral load in the amniotic fluid. Six of 8 infants had a periventricular echogenic halo, and 2 had abnormality of the sulci with focal calcifications in the brain. There were 37 pregnancies (48 fetuses) with a high viral load in the amniotic fluid but with normal ultrasound findings at 20 to 22 weeks’ gestation. Of these fetuses, 1 was lost to follow-up, 11 were terminated, 1 was an intrauterine death, and 11 were subsequently delivered. Of the 11 newborns, 9 were asymptomatic but infected and 2 were both symptomatic and infected. The periventricular echogenic halo could be seen at 20 to 22 weeks’ gestation. This echogenic halo is seen as an increased echogenicity in the intracranial parenchyma that surrounds ventricular margins. An autopsy was performed on only 2 fetuses. The pathology results correlated with sonographic findings. The 6 infected fetuses having a periventricular echogenic halo were identified transvaginally only. Transabdominal view of the fetal head was normal in all examinations.

Conclusions: The cerebrospinal periventricular halo obtained from a transvaginal neurosonographic evaluation at mid gestation in patients with primary CMV infection may be related to intrauterine fetal infection.

Reviewer’s Comments: The fetal cerebral periventricular halo seen at midgestation in the CMV-infected fetus may be related to a white-matter lesion. In this study, these specific pregnancies were terminated. In continuing pregnancies, this periventricular halo may represent initial changes in the cerebral white matter that may progress to other sonographic findings later. In patients with primary CMV, a transvaginal neurosonographic evaluation should be performed in an attempt to visualize a periventricular halo. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Fetal Cerebral Periventricular Halo, Cytomegalovirus Infection

Print Tag: Refer to original journal article
A history of preterm premature rupture of membranes (PPROM) in a previous pregnancy and a short interpregnancy interval are both risk factors for recurrence of PPROM in a subsequent pregnancy.

**Objective:** To determine the recurrence risk of preterm premature rupture of membranes (PPROM) in subsequent pregnancies, and to determine if this risk was altered by the interpregnancy interval.

**Design/Methods:** Retrospective review of a population-based database over an 8-year period. Patients were identified who delivered either 2 consecutive singleton infants or 3 consecutive singleton infants. Ethnicity of patients was also determined. Patients were divided into either white or African American. The PPROM status was also determined for both the first and second and/or third pregnancies. There were a total of 150,929 patients who delivered 2 consecutive singleton infants and 30,011 patients who delivered 3 consecutive singleton infants. The interpregnancy interval was also determined and subdivided into 6 categories as follows: <12 months, 12 to 17 months, 18 to 23 months, 24 to 29 months, 30 to 35 months, and ≥36 months. The recurrence risk of PPROM in relationship to the interpregnancy interval was determined.

**Results:** Overall, risk of PPROM in the African-American women was 2.9% in the first pregnancy and 2.9% in the second pregnancy. In white women, the risk was 1.4% in the first pregnancy and 1.1% in the second pregnancy. If there was an interpregnancy interval of <12 months, there was a greater risk of PPROM in the second pregnancy in white women and in African-American women. Overall, risk of PPROM in a second pregnancy in white women with a previous PPROM was 5.7% compared to 2.3% in those not having previous PPROM. Risk of PPROM in a second pregnancy was 10.3% in African-American women having had a previous PPROM and 4.3% in those not having previous PPROM. An interpregnancy interval of <18 months was associated with a greater risk of PPROM in the second pregnancy. This risk decreased with an increasing interpregnancy interval. This was consistent in both white and African-American women. In the African-American women, an increase in the interpregnancy interval of ≥36 months was actually associated with an increased recurrence of PPROM.

**Conclusions:** There is an increased risk for PPROM in a subsequent pregnancy in women with a history of PPROM in a previous pregnancy as well as with a short interpregnancy interval.

**Reviewer’s Comments:** It appears that a short interpregnancy interval is associated with an increased risk for PPROM in a subsequent pregnancy, regardless of ethnicity. A history of PPROM in a first pregnancy also is a risk factor for subsequent recurrence, especially if the interpregnancy interval is <18 months. These findings are important in counseling patients regarding subsequent pregnancies after the occurrence of a pregnancy with PPROM. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Premature Membrane Rupture

Print Tag: Refer to original journal article
Can Umbilical Artery Doppler Predict Outcome in Severe Early-Onset Preeclampsia?  
The Prognostic Role of Uterine Artery Doppler Investigation in Patients With Severe Early-Onset Preeclampsia.
Meler E, Figueras F, et al:
Am J Obstet Gynecol 2010; 202 (June): 559.e1-559.e4

Abnormal uterine artery Doppler studies in a patient with severe early-onset preeclampsia are associated with both adverse maternal and neonatal outcomes.

**Objective:** To determine if use of umbilical artery Doppler studies is able to predict maternal and neonatal adverse outcomes in women with severe early-onset preeclampsia.

**Design:** Prospective study done over a 6-year period.

**Participants:** Patients with singleton gestations and severe preeclampsia <34 weeks’ gestation were eligible for the study. Patients underwent uterine artery Doppler integration with calculation of the pulsatility index for both the right and left uterine arteries. Adverse maternal outcomes were evaluated and included development of (1) hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome, (2) neurologic abnormalities, (3) acute renal failure, and (4) pulmonary edema. Neonatal adverse outcomes were also evaluated and included 5-minute APGAR score <7, perinatal death, umbilical artery pH <7.1 with a base excess of >12 mEq/L, or significant neonatal morbidity. Patients had daily fetal heart rate monitoring and Doppler evaluation every 3 days. They were delivered if there was uncontrollable hypertension, significant maternal complications, abnormal fetal heart rate tracing, umbilical artery Doppler studies showing reversed end-diastolic flow, or abnormal ductus venosus Doppler evaluations showing reversed end-diastolic velocities. Doppler studies were considered abnormal if the result was >2 standard deviations from the mean. Two groups of patients were compared: those having normal uterine artery Doppler studies and those with abnormal studies.

**Results:** 120 patients entered the study. Of these patients, 56 were in the group with normal uterine artery Doppler, and 64 had abnormal uterine artery Doppler findings. In the abnormal Doppler group, the mean gestational age at delivery was 30.2 weeks compared to 32.7 weeks in the normal group. Birth weight was also decreased with a median 1150 grams compared to 1300 grams in the normal group. Also, the percent of small-for-gestational age infants was greater in the abnormal Doppler group at 87.5% compared to 67.9% in the normal Doppler group. Overall, maternal complications were also greater in the abnormal Doppler group at 28.0% compared to 5.4% in the normal Doppler group. Neonatal complications overall were also increased at 40.6% compared to 14.3% in the normal Doppler group. There were 3 fetal deaths and 8 neonatal deaths. Of 11 perinatal deaths, 1 occurred in the normal Doppler group and 10 in the abnormal group.

**Conclusions:** In patients with severe early-onset preeclampsia, finding of an abnormal uterine artery Doppler study is associated with both an increase in maternal as well as neonatal adverse outcomes.

**Reviewer's Comments:** Since uterine artery Doppler findings are a reflection of placental function, it would have been helpful if the authors provided histologic placental findings in relationship to the Doppler findings. It would appear that it may be appropriate to incorporate uterine artery Doppler studies in managing patients with early-onset severe preeclampsia; although, further studies will be needed. (Reviewer-Thomas N. Tabb, MD).

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Keywords: Preeclampsia, Uterine Artery Doppler

Print Tag: Refer to original journal article