Outreach

Your Outreach Librarian can help facilitate evidence-based practise for all members of staff, as well as assisting with academic study and research. We can help with literature searching, obtaining journal articles and books, and setting up individual current awareness alerts. We also offer one-to-one or small group training in literature searching, accessing electronic journals, and critical appraisal.

Email Helen Pullen
library@UHBristol.nhs.uk

Literature Searching

We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a 1 to 1 session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence. Please email requests to library@UHBristol.nhs.uk

Books

Books can be searched for using SWIMS our online catalogue at www.swims.nhs.uk. Up to 12 books can be borrowed at one time. Books can be renewed in person, over the phone or on the SWIMS website. Short Loan books cannot be renewed but may be re-issued on return.

Inter-Library Loans

Books and journals that are not available on site or electronically may be requested from other locations. Please email requests to: ills@UHBristol.nhs.uk
Contents

1: Tables of Contents from June/July

2: New NICE Guidance

3: Latest relevant Systematic Reviews from the Cochrane Library.

4: New activity in Uptodate

5: Literature Search (EMBASE)
Tables of Contents from relevant journals

Click here British Journal of Obstetrics And Gynaecology

Click here American Journal of Obstetrics and Gynecology

Click here Obstetrics and Gynaecology

New NICE Guidance

QSD In development Maternal and child nutrition - improving nutritional status
Latest relevant Systematic Reviews from the Cochrane Library

If you require full articles, or a more enhanced search of any of the below topics please email library@UHBristol.nhs.uk

Effect of administration of antihelminthics for soil-transmitted helminths during pregnancy
Rehana A Salam, Batool A Haider, Quratulain Humayun, Zulfiqar A Bhutta
Online Publication Date: June 2015

Tranexamic acid for preventing postpartum haemorrhage
Natalia Novikova, G Justus Hofmeyr, Catherine Cluver
Online Publication Date: June 2015

Diet or exercise, or both, for preventing excessive weight gain in pregnancy
Benja Muktabhant, Theresa A Lawrie, Pisake Lumbiganon, Malinee Laopaiboon
Online Publication Date: June 2015

Methods for assessing pre-induction cervical ripening
Ifeanyichukwu U Ezejialu, Ahizechukwu C Eke, George U Eleje, Chukwuemeka E Nwachukwu
Online Publication Date: June 2015

Impact of *Haemophilus influenzae* type B (Hib) and viral influenza vaccinations in pregnancy for improving maternal, neonatal and infant health outcomes
Rehana A Salam, Jai K Das, Chesarahmia Dojo Soeandy, Zohra S Lassi, Zulfiqar A Bhutta
Online Publication Date: June 2015

Effects of restricted caffeine intake by mother on fetal, neonatal and pregnancy outcomes
Shayesteh Jahanfar, Sharifah Halimah Jaafar
Online Publication Date: June 2015

Amnioinfusion for chorioamnionitis
Joseph AK Kiiza, G Justus Hofmeyr
Online Publication Date: June 2015

Cyclo-oxygenase (COX) inhibitors for treating preterm labour
Hanna E Reinebrant, Cynthia Pileggi-Castro, Carla LT Romero, Rafaela AN dos Santos, Sailesh Kumar, João Paulo Souza, Vicki Flenady
Online Publication Date: June 2015

Pyridoxine (vitamin B6) supplementation during pregnancy or labour for maternal and neonatal outcomes
Antenatal dietary education and supplementation to increase energy and protein intake
Erika Ota, Hiroyuki Hori, Rintaro Mori, Ruoyan Tobe-Gai, Diane Farrar
Online Publication Date: June 2015

Non-pneumatic anti-shock garment (NASG) as a first aid for preventing or reversing hypovolemic shock secondary to obstetric hemorrhage
Amy W Penn, Nancy K Beam, Hana Azman
Online Publication Date: May 2015

Uterotonic agents for preventing postpartum haemorrhage: a network meta-analysis
Online Publication Date: May 2015

Non-surgical interventions for nasal congestion during pregnancy
Wei Wei, Hongqian Liu, Deying Kang, He Wang, Christine E East
Online Publication Date: May 2015

Continuous versus pulsatile oxytocin administration for the augmentation of labour
Annabelle JW Kendrick, James P Neilson
Online Publication Date: May 2015

Intrapartum fetal scalp lactate sampling for fetal assessment in the presence of a non-reassuring fetal heart rate trace
Christine E East, Leo R Leader, Penelope Sheehan, Naomi E Henshall, Paul B Colditz, Rosalind Lau
Online Publication Date: May 2015

Melatonin for preventing pre-eclampsia
Sebastian R Hobson, Joanne C Mockler, Rebecca Lim, Nicole O Alers, Suzanne L Miller, Euan M Wallace
Online Publication Date: May 2015
New activity in UpToDate

What's new in obstetrics and gynecology

Authors
Kristen Eckler, MD, FACOG
Sandy J Falk, MD, FACOG
Vanessa A Barss, MD, FACOG

Disclosures: Kristen Eckler, MD, FACOG Nothing to disclose. Sandy J Falk, MD, FACOG Nothing to disclose. Vanessa A Barss, MD, FACOG Nothing to disclose.

Contributor disclosures are reviewed for conflicts of interest by the editorial group. When found, these are addressed by vetting through a multi-level review process, and through requirements for references to be provided to support the content. Appropriately referenced content is required of all authors and must conform to UpToDate standards of evidence.

Conflict of interest policy
All topics are updated as new evidence becomes available and our peer review process is complete. Literature review current through: May 2015. | This topic last updated: Jun 17, 2015.

The following represent additions to UpToDate from the past six months that were considered by the editors and authors to be of particular interest. The most recent What's New entries are at the top of each subsection.

OBSTETRICS

Gestational age apps (June 2015)
Electronic techniques, such as apps available for download to smart phones, are generally more accurate for determining gestational age than mechanical wheels. However, a high proportion of gestational age apps are also inaccurate [1]. Clinicians and patients should be aware of this possibility when using a gestational age app, and clinicians should test the accuracy of the app they use. UpToDate provides calculators that determine the estimated date of delivery and current gestational age (calculator 1 and calculator 2). (See "Prenatal assessment of gestational age and estimated date of delivery", section on 'Calculator'.)

Skin closure at cesarean delivery (June 2015)
The best method for skin closure at cesarean delivery is controversial. In a recent meta-analysis of staples versus subcuticular sutures for skin closure, stapled closure increased the rate of wound complications (infection and/or separation), while shortening operating time by only a few minutes [2]. Cosmetic appearance, pain perception at discharge, and patient satisfaction were similar for both approaches. Although stapled closure took seven minutes less than sutured closure, the time involved to remove staples also needs to be considered. We suggest reapproximation of the skin with subcuticular sutures rather than staples. (See "Cesarean delivery: Technique", section on 'Skin'.)

Vitamin D supplementation during pregnancy (May 2015)
Several observational studies suggest an association between poor maternal vitamin D status and adverse pregnancy outcomes. A meta-analysis of 13 trials showed that, compared with a control group, vitamin D administration (in varied dosing, types, and schedules) resulted in higher serum 25(OH)D levels at delivery but no difference in the incidence rates of preeclampsia or gestational diabetes [3]. There was also no difference in the incidence rates of small for gestational age, low birth weight, and preterm birth in the neonates. Although routine prenatal vitamin D supplementation does
not appear to prevent low birthweight, preterm birth, or preeclampsia, the earliest interventions in the published trials were made in the late first trimester. Initiation of therapy with vitamin D prior to conception has not been evaluated. (See "Vitamin D and extraskeletal health", section on 'Pregnancy outcomes'.)

Endotracheal suctioning may not benefit nonvigorous neonates with meconium-stained amniotic fluid (May 2015)

Current guidelines recommend intubation and tracheal suctioning (endotracheal suctioning) of residual meconium for nonvigorous (depressed) infants (ie, absent or depressed respirations, decreased muscle tone, or heart rate less than 100 beats/minute) with meconium-stained amniotic fluid (MSAF), although supportive data are limited. In a recent randomized clinical trial of 122 nonvigorous term infants with MSAF in India, there was no additional benefit to endotracheal suctioning compared with no intubation and suctioning [4]. Specifically, there were no differences between the two groups in the incidence of meconium aspiration syndrome (33 versus 31 percent), need for mechanical ventilation (23 versus 25 percent), survival at nine months of age (70 versus 72 percent), and mental and motor developmental status at nine months of age. Although these results suggest that endotracheal suctioning may not be needed in all infants with MSAF regardless of the level of activity, additional confirmatory evidence with larger clinical trials is needed before we recommend a change in practice for nonvigorous infants with MSAF. (See "Prevention and management of meconium aspiration syndrome", section on 'Neonatal care'.)

Effectiveness of pertussis vaccine in infants (May 2015)

Infants younger than 12 months have the highest incidence of pertussis and pertussis-related complications, including death. In a large case-control study, having received ≥1 dose of pertussis vaccine was associated with a 72 percent reduction in the risk of death and a 31 percent reduction in the risk of hospitalization in infants ≥6 weeks of age (the minimum age for the first dose of pertussis vaccine) [5]. However, 64 percent of the deaths occurred in infants younger than six weeks. These findings highlight the importance of timely pertussis immunization for infants, as well as maternal immunization during pregnancy and immunization of the infant’s close contacts, as recommended by the Global Pertussis Initiative [6]. (See "Diphtheria, tetanus, and pertussis immunization in infants and children 0 through 6 years of age", section on 'Efficacy and effectiveness' and "Immunizations during pregnancy", section on 'Tetanus, diphtheria, and pertussis vaccination' and "Bordetella pertussis infection in adolescents and adults: Treatment and prevention", section on 'Tdap booster'.)

Nicotine replacement therapy during pregnancy (May 2015)

Cigarette smoking during pregnancy is associated with adverse pregnancy outcomes. Nicotine replacement therapy has had limited use in pregnant women because of concerns regarding potential adverse fetal effects and limited evidence supporting efficacy. In a retrospective study of nearly 200,000 children born in the United Kingdom, the rates of major congenital anomalies were not statistically different among infants of women using nicotine replacement therapy, women who smoked, and women who did not use either [7]. System-specific analysis reported an increased risk of respiratory anomalies in the nicotine replacement-exposed children, but the absolute risk was 3 per 1000 births, and based on 10 exposed cases out of 157 children with respiratory anomalies. Given
the known benefits of smoking cessation during pregnancy, nicotine replacement therapy appears to be a reasonable treatment option for pregnant women who wish to stop smoking. (See "Cigarette smoking and pregnancy", section on 'Nicotine replacement'.)

**Induction for imminent macrosomia (April 2015)**

Previous studies have reported that induction of labor in pregnancies with suspected macrosomia (estimated fetal weight >4000 grams) has no advantages compared with expectant management. However, induction at a lower weight threshold may be advantageous. In a multicenter randomized trial that evaluated the consequences of induction of pregnancies with imminent macrosomia at 37 to 38 weeks and within three days of randomization, induction reduced the risk of the composite outcome of significant shoulder dystocia and associated morbidity compared with expectant management (2 versus 6 percent) [8]. Imminent macrosomia was defined as estimated fetal weight >3700 grams at 37 weeks or greater than 3900 grams at 38 weeks. We believe these findings are insufficient to recommend induction of labor for imminent macrosomia at 37 and 38 weeks of gestation. For such a strategy to be acceptable, additional large trials would need to confirm a reduction in neonatal morbidity from shoulder dystocia and no increase in neonatal morbidity from iatrogenic prematurity. (See "Shoulder dystocia: Risk factors and planning delivery of at risk pregnancies", section on 'Pregnancies where high birth weight is suspected'.)

**Iron supplementation in pregnancy (April 2015)**

The total maternal iron requirement associated with pregnancy is about 1000 mg. For this reason, many clinicians prescribe a prenatal vitamin with iron for pregnant women. In a 2015 systematic review for the US Preventive Services Task Force, routine iron supplementation in pregnancy resulted in a 50 to 80 percent reduction in the frequency of iron deficiency anemia at term, but effects on other pregnancy outcomes were inconsistent [9]. We suggest prenatal vitamins with iron for pregnant women for prevention of maternal iron deficiency anemia. (See "Nutrition in pregnancy", section on 'Iron'.)

**False positive Down syndrome screening tests (April 2015)**

Noninvasive prenatal Down syndrome screening using cell free DNA results in lower false positive and false negative rates than conventional aneuploidy screening tests. In a recent study of Down syndrome screening in an unselected population including almost 16,000 women, the false positive rates of cell free DNA and conventional screening were 0.1 and 5 percent, respectively, and false negative rates were 0 and 21 percent, respectively [10]. False positive results can be due to factors such as maternal mosaicism, maternal tumors, maternal copy number variants, vanishing twins, confined placental mosaicism, or a failure of the complex bioinformatics necessary to generate a result [11-18]. Despite the low false positive rate with cell free DNA screening, confirmatory diagnostic testing (genetic amniocentesis or chorionic villus sampling) is mandatory after a screen positive result. (See "Noninvasive prenatal testing using cell-free nucleic acids in maternal blood", section on 'Trisomy 21, 18, 13'.)

**Statins and pregnancy (April 2015)**
The safety of statins in pregnancy is uncertain, but animal studies have raised concerns about fetal harm; human data are mixed. A cohort study of women enrolled in the US Medicaid program found that an association between statins and malformations was no longer present after a propensity analysis that controlled for potential confounders; pre-existing diabetes appeared to be the most important confounder [19]. However, the wide confidence intervals in this study do not exclude a potential increase (or decrease) in risk with statin therapy. We continue to recommend that statins be discontinued prior to conception if possible. (See "Statins: Actions, side effects, and administration", section on 'Risks in pregnancy and breastfeeding'.)

**Induction after previous cesarean delivery (March 2015)**

The risks and benefits of labor induction in women with a previous cesarean delivery are best understood when compared with the outcome of expectant management in a similar population, rather than a population of women in spontaneous labor. In one such study of over 12,000 women with singleton gestations ≥39 weeks and one low transverse cesarean delivery, women undergoing induction at 39 weeks without an acute obstetric medical indication were more likely to deliver vaginally than those managed expectantly (74 versus 61 percent), but they also experienced a higher rate of uterine rupture (1.4 versus 0.5 percent) [20]. Uterine rupture was defined as a disruption or tear of the uterine muscle and visceral peritoneum or a separation of the uterine muscle with extension to the bladder or broad ligament. These findings affirm previous findings of the high probability of vaginal delivery with induction after a previous cesarean delivery at the cost of an increased risk of uterine rupture. (See "Cervical ripening and induction of labor in women with a prior cesarean delivery", section on 'Likelihood of successful induction'.)

**Chronic hypertension may increase risk of congenital anomalies (March 2015)**

Children of women with chronic hypertension, either treated or untreated, appear to be at increased risk of congenital malformations, particularly cardiac malformations. In a recent study, the risk of congenital heart disease was increased by 50 percent in offspring of women with untreated hypertension compared with offspring of normotensive controls, which corresponds to 1.4 additional cases of congenital heart disease per 100 pregnancies in women with hypertension [21]. This suggests that factors associated with hypertension or hypertension itself increases the risk for congenital malformations independent of antihypertensive drug therapy. (See "Management of hypertension in pregnant and postpartum women", section on 'Antihypertensive therapy'.)

**Pregnancy outcomes after bariatric surgery (March 2015)**

Bariatric surgery prior to pregnancy appears to reduce the risk of certain adverse pregnancy outcomes associated with maternal obesity. In the largest study to date evaluating this issue, women who had bariatric surgery prior to pregnancy were less likely to have gestational diabetes and large-for-gestational-age infants compared with women matched for age and presurgical body mass index (BMI) who had not undergone bariatric surgery [22]. However, they were more likely to have small-for-gestational-age infants. The risks of preterm birth, stillbirth or neonatal death, and congenital malformations were not statistically different between the two groups. (See "Fertility and pregnancy after bariatric surgery", section on 'Pregnancy outcomes'.)
Safety of inhaled long-acting beta agonist/glucocorticoid for asthma during pregnancy (February 2015)

An important clinical question for pregnant women with asthma is whether using a combination long-acting beta-agonist (LABA) plus inhaled glucocorticoid confers an increased risk for adverse fetal outcomes, compared with monotherapy using a higher dose of the inhaled glucocorticoid. In a study of 1302 pregnant women with asthma, the risk for a major congenital malformation was not increased when a LABA plus low dose inhaled glucocorticoid was compared with a medium dose inhaled glucocorticoid, or when a LABA plus medium-dose inhaled glucocorticoid was compared with a high-dose inhaled glucocorticoid [23]. (See “Management of asthma during pregnancy”, section on ‘Long-acting beta-adrenergic agents’.)

Oral anti-hyperglycemic drugs for treatment of gestational diabetes mellitus (February 2015)

Prevention of macrosomia is a major goal of treatment of gestational diabetes mellitus (GDM), but the best approach is controversial. In a 2015 systematic review and meta-analysis of randomized trials comparing neonatal outcomes in women with GDM treated with glyburide, metformin, or insulin therapy, women assigned to glyburide had a higher rate of macrosomia than those assigned to metformin or insulin therapy [24]. Metformin therapy and insulin therapy resulted in similar rates of macrosomia. We prefer insulin therapy for women with GDM who fail nutritional therapy because it is effective and safe, while there is no information about the long-term effects of transplacental passage of oral anti-hyperglycemic drugs. However, oral anti-hyperglycemic agents are a reasonable alternative for women who refuse to take, or are unable to comply with, insulin therapy. (See "Gestational diabetes mellitus: Glycemic control and maternal prognosis", section on ‘Glyburide’.)

Target diastolic blood pressure in pregnancy (February 2015)

In pregnant women with chronic (preexistent) or gestational hypertension, the effect of less-tight versus tight control of hypertension on pregnancy complications is unclear. A randomized trial that assigned pregnant women with gestational or chronic hypertension to diastolic blood pressure treatment targets of 85 or 100 mmHg reported similar maternal, fetal, and neonatal outcomes in both groups [25]. More women in the 100 mmHg target group developed severe hypertension, although this was not associated with an increase in transient ischemic attack or stroke. The trial was not powered to exclude a clinically important increase in fetal growth restriction in the 85 mmHg target group. For these reasons, we continue to suggest a diastolic pressure target of 90 to 100 mmHg for pregnant women with hypertension without end-organ damage. (See "Management of hypertension in pregnant and postpartum women", section on ‘Blood pressure goal’.)

Risk of depression among pregnant women with epilepsy (February 2015)

Individuals with epilepsy have an increased prevalence of depression compared with individuals without epilepsy, and this appears to be true during pregnancy and the postpartum period as well. In a population-based study that included 706 pregnancies in women with epilepsy and over 100,000 pregnancies in those without epilepsy, peripartum depression affected 27 percent of women with epilepsy compared with 23 percent of women with other chronic diseases and 19 percent of the entire non-epilepsy population [26]. Risk factors for depression included high seizure frequency, antiepileptic drug use, and prepregnancy depression or anxiety. Detection of depression during pregnancy is
important because both pharmacologic and nonpharmacologic treatments are available, and untreated illness may have consequences for both mother and child. (See "Risks associated with epilepsy and pregnancy", section on 'Other risks'.)

Mortality decreasing for extremely preterm infants (January 2015)

Although infants born extremely premature have the highest mortality rate, mortality has decreased with advances in prenatal and neonatal care. This was illustrated in a large prospective study of 22,248 extremely premature infants (defined as gestational age between 22 and 28 6/7 weeks) conducted by the National Institute of Child Health and Human Development Neonatal Research Network that compared mortality across three time periods (2000 to 2003, 2004 to 2007, and 2008 to 2011) [27]. In this analysis, mortality was lowest in the third time period (2008 to 2011) due to decreased rates of deaths related to pulmonary causes (neonatal respiratory distress syndrome and bronchopulmonary dysplasia), immaturity, infection, and central nervous system injury. The study also documented improved prenatal care among mothers of these preterm infants, as the percentage of women who received prenatal care increased throughout the three study periods including higher rates of prenatal glucocorticoid administration. (See "Incidence and mortality of the premature infant", section on 'Extremely preterm infants'.)

Timing of antiretroviral initiation during pregnancy (January 2015)

The risk of HIV transmission from an infected mother to her infant is proportional to the level of maternal viremia at delivery. Among women not already taking an antiretroviral regimen, viral suppression at delivery is more likely when a regimen is initiated earlier during gestation. In a large US cohort of antiretroviral-naïve HIV-infected women who initiated a combination antiretroviral regimen during pregnancy, a detectable viral load at delivery was documented in 13 percent overall, but in 24 percent of those who initiated the regimen during the third trimester [28]. This supports our recommendation to initiate antiretroviral therapy promptly in treatment-naïve pregnant women with advanced HIV disease or CD4 cell count th week of gestation for HIV-infected pregnant women with higher CD4 cell counts. (See "Use of antiretroviral medications in pregnant HIV-infected patients and their infants in resource-rich settings", section on 'When to initiate antiretroviral medications during pregnancy'.)

Risk of congenital anomalies in offspring of consanguineous couples (January 2015)

There is increasing evidence that the prevalence of congenital and genetic disorders among offspring of consanguineous couples is about double that compared to non-consanguineous couples. In a retrospective study of a multiethnic population referred to a specialist center in Berlin, Germany, the prevalence of major anomalies among fetuses with consanguineous and non-consanguineous parents was 6.1 and 2.8 percent, respectively [29]. This information is useful for managing pregnancy in a consanguineous couple or counseling consanguineous couples who are contemplating pregnancy. (See "Genetic and environmental causes of birth defects", section on 'Consanguinity'.)

No change to recommendations for pain medicine use in pregnancy (January 2015)

Studies of pain medicine use by pregnant women have suggested associations between prescription nonsteroidal antiinflammatory drugs (NSAIDs) and the risk of miscarriage, the use of acetaminophen
and subsequent childhood attention deficit hyperactivity disorder (ADHD), and the use of opioids and the development of fetal neural tube defects. A 2015 US Food and Drug Administration (FDA) Drug Safety Communication has found methodologic limitations to these studies and inconclusive results regarding NSAIDs and acetaminophen use [30]. Further investigation is needed regarding maternal opioid use and the risk of fetal neural tube defects. It is always advisable for pregnant women to avoid medications that are not clearly needed. However, specific recommendations regarding analgesic use need not change based on this current analysis. (See "Initial prenatal assessment and first trimester prenatal care", section on 'Treatment of pain and fever'.)

Success of preterm labor induction (January 2015)

Induction of labor is less likely to be successful in very preterm pregnancies, but reliable estimates of success rates have not been published. In a study of data from the National Institute of Child Health and Human Development Consortium on Safe Labor, 57 percent of pregnancies induced at 24 to 28 weeks, and 54 percent of those at 28 to 31 weeks had a successful vaginal delivery [31]. Success rates were highest in multiparous women and pregnancies ≥34 weeks. (See "Induction of labor", section on 'Predicting a successful induction'.)

Congenital anomalies associated with increased nuchal translucency on prenatal ultrasonography (December 2014)

Measurement of fetal nuchal translucency on prenatal ultrasonography is a first trimester screening test for Down syndrome. Increased nuchal translucency is associated with Down syndrome, but also with an increased risk of congenital cardiac and noncardiac anomalies. In a large population-based study of euploid liveborn infants without critical congenital heart defects, the risk of hydrocephalus, osteodystrophy, and anomalies of the lung, diaphragm, and small intestine was increased approximately threefold in infants with first trimester nuchal translucency measurement ≥95th percentile compared with those <95th percentile [32]. These findings highlight the importance of a thorough fetal anatomic survey when increased fetal nuchal translucency is identified. (See "First trimester cystic hygroma and increased nuchal translucency", section on 'Noncardiac'.)

Blunt versus sharp uterine incision expansion (December 2014)

The uterine incision at cesarean delivery can be expanded using a blunt or sharp technique. In a 2014 meta-analysis of randomized trials of blunt versus sharp incision expansion, blunt expansion resulted in a 50 percent reduction in the rate of unintended extensions and a lower drop in postpartum hemoglobin and hematocrit, and reduced operative time by two minutes [33]. These data support our recommendation for blunt incision expansion. (See "Cesarean delivery: Technique", section on 'Procedure'.)

OFFICE GYNECOLOGY

Reduced HPV vaccination rate among women who have sex with women (May 2015)

Prior research has suggested that women who have sex with women (WSW) may be less likely to initiate human papillomavirus (HPV) vaccination than their age-matched heterosexual peers. One possible reason for this discrepancy is that both WSW and their healthcare providers may erroneously believe that WSW are not at risk for HPV infection or cervical cancer. In one study of over 12,000
United States women from 2006 to 2010, of women who were aware of the HPV vaccine, only 8 percent of lesbian women had initiated vaccination compared with 28 percent of heterosexual women and 32 percent of bisexual women [34]. This study highlights the need for healthcare providers to discuss HPV vaccination with all patients. The American Academy of Pediatrics and the American College of Obstetricians and Gynecologists recommend vaccination for females and males ages 11 or 12 years of age, up to age 26. (See "Medical care of women who have sex with women", section on 'Prevention of sexually transmitted diseases'.)

Long duration of hot flashes (March 2015)

For many if not most menopausal women, hot flashes last considerably longer than the duration currently recommended for treatment of symptoms (maximum 4 to 5 years to minimize excess breast cancer risk). Among 1449 women with hot flashes followed longitudinally in the Study of Women Across the Nation (SWAN), the median total hot flash duration was 7.4 years, with symptoms persisting for a median of 4.5 years after the final menstrual period (FMP) [35]. Women who were premenopausal or early perimenopausal when they first experienced hot flashes had the longest total duration (>11.8 years, post-FMP median duration 9.4 years). The long duration of hot flashes raises important treatment challenges for many women, particularly those with early onset symptoms. (See "Menopausal hot flashes", section on 'Duration'.)

Menopausal hormone therapy and risk of ovarian cancer (March 2015)

There have been concerns that menopausal hormone therapy (MHT) may be associated with an increase in ovarian cancer risk, but data are conflicting. A meta-analysis of 52 epidemiologic studies including 21,488 postmenopausal women with ovarian cancer now suggests that there is a small excess risk of ovarian cancer with MHT [36]. While the relative risk of ovarian cancer was greater in ever-users than never-users of MHT (RR 1.14), the calculated absolute excess risk associated with MHT was very low: five years of MHT use in women ages 50 to 54 years would result in about one additional ovarian cancer case per 1000 users and one ovarian cancer death per 1700 users. Given these low absolute risks, we do not consider ovarian cancer to be a major consideration when deciding to take MHT for symptomatic relief. (See "Menopausal hormone therapy: Benefits and risks", section on 'Ovarian cancer'.)

Interim guidelines for cervical cancer screening with primary HPV testing (February 2015)

Interim guidelines from the Society of Gynecologic Oncology and the American Society for Colposcopy and Cervical Pathology are the first US guidelines to suggest primary human papillomavirus (HPV) testing as an option for cervical cancer screening in women starting at age 25 years (table 1) [37]. This option is provided based on a randomized trial comparing primary HPV testing with cytology (Pap test) or co-testing (Pap test and HPV testing) [38]. Among women ≥25 years, primary HPV testing was more sensitive for the detection of cervical intraepithelial neoplasia (CIN) 3 or greater. However, the study is limited by having only three years of follow-up, use of a surrogate outcome (CIN3 rather than cancer), and highly structured follow up protocols that may not be feasible in practice. Given these limitations, we continue to suggest that women age <30 years not be screened for cervical cancer with primary HPV testing. (See "Screening for cervical cancer", section on 'Primary HPV testing'.)
GYNECOLOGIC SURGERY

Efficacy of surgical treatment for ovarian remnant syndrome (February 2015)

Ovarian remnant syndrome is the presence of residual ovarian tissue after oophorectomy, which may cause pelvic pain. Most studies have reported high success rates with surgical treatment. In a retrospective series of women with ovarian remnant syndrome or the related disorder ovarian retention syndrome (when the ovaries are purposefully left intact), rates of success with surgical treatment were lower than described in previous studies [39]. Only 10 of 20 women with ovarian remnant syndrome experienced improvements in pain scores. Endometriosis was a significant risk factor for lack of treatment success. (See “Ovarian remnant syndrome”, section on ‘Choice of treatment method’.)

GYNECOLOGIC ONCOLOGY

Morcellation associated with worse prognosis in uterine sarcoma (February 2015)

Uterine sarcoma prognosis appears to be worsened if morcellation is used on uterine tissue, typically in cases in which the malignancy was unsuspected at time of surgery. A meta-analysis of observational studies in women with uterine sarcoma found that morcellation (scalpel or power methods) compared with no morcellation was associated with a 3.2-fold higher recurrence rate and 2.4-fold higher mortality rate [40]. This analysis provides the first set of pooled data regarding the adverse impact of uterine morcellation in uterine sarcoma. (See “Differentiating uterine leiomyomas (fibroids) from uterine sarcomas”, section on ‘Do morcellation, myomectomy, or supracervical hysterectomy worsen prognosis?’.)

REPRODUCTIVE ENDOCRINOLOGY

Empiric progesterone supplementation of no benefit in recurrent pregnancy loss (April 2015)

Recurrent pregnancy loss is an extremely stressful experience for families and clinicians. One proposed mechanism of recurrent pregnancy loss is luteal phase deficiency, or inadequate progesterone production by the corpus luteum. A 2015 Committee Opinion by the American Society of Reproductive Medicine concluded that there is no evidence that empiric treatment of luteal phase deficiency with progesterone supplementation is beneficial to women with recurrent pregnancy loss in natural, unstimulated cycles (ie, no use of fertility therapy) [41]. When abnormal luteal function is the result of an identified medical condition, such as elevated prolactin, the underlying medical problem should be addressed. (See “Management of couples with recurrent pregnancy loss”, section on ‘Progesterone’.)

Modified IVF to prevent transmission of mitochondrial DNA disorders (February 2015)

Modified in vitro fertilization (IVF) techniques, including donor spindle cell transfer and pronuclear transfer, have been developed to prevent the transmission of inherited mitochondrial DNA (mtDNA) mutations from affected mothers to offspring. These techniques are controversial because the resultant offspring carry DNA from three different individuals— the mother, the father, and the mitochondrial donor, although only 0.05 percent of the individual’s total DNA would originate from the mitochondrial donor. In January 2015, the United Kingdom House of Commons approved two
techniques, making the UK the first country to offer these therapies [42]. Within the UK, an estimated 150 women a year could benefit from this technology [43]. (See "In vitro fertilization", section on 'Other uses of IVF'.)

UROGYNECOLOGY

Transobturator versus retropubic slings for stress urinary incontinence in women (December 2014)

Five-year follow-up data from the Trial of Midurethral Slings (TOMUS), which randomized women to either a retropubic sling or a transobturator sling, demonstrated decreasing continence rates for women in both treatment groups [44]. The continence rate was higher in retropubic sling patients as compared with transobturator sling patients, but not statistically different (51.3 percent versus 43.4 percent). A greater proportion of women who underwent a transobturator sling procedure reported a "much better or very much better" urinary status. The overall mesh erosion rate was low, but new mesh exposures developed remote from surgery. Both retropubic slings and transobturator slings are reasonable choices for the surgical management of stress urinary incontinence in women, but the continence rates of both procedures decrease with time. (See "Surgical management of stress urinary incontinence in women: Choosing a type of midurethral sling", section on 'Transobturator versus retropubic midurethral slings'.)

OTHER GYNECOLOGY

Circulating influenza A H3N2 viruses and influenza vaccine effectiveness in the United States (December 2014, MODIFIED March 2015)

In December 2014, the United States Centers for Disease Control and Prevention (CDC) released a health advisory stating that more than half of influenza A H3N2 viruses collected and analyzed in the United States in October and November 2014 were antigenically different (drifted) from the H3N2 antigen included in this season's influenza vaccines [45]. Most isolated influenza viruses to date have been H3N2 strains. During previous seasons in which influenza A H3N2 viruses have predominated, higher hospitalization and mortality rates have been reported among older people, very young children, and individuals with certain medical conditions. In seasons where predominant circulating influenza viruses have antigenically drifted, decreased vaccine effectiveness has been observed. Nevertheless, vaccination typically provides some cross-protection against drifted viruses and should still reduce hospitalization and death. As of late February 2015, overall vaccine effectiveness was only 19 percent and vaccine effectiveness against influenza A H3N2 was only 18 percent [46]. Influenza vaccination is still highly recommended [45]. The CDC health advisory was issued to reemphasize the importance of the use of neuraminidase inhibitors (eg, oseltamivir, zanamivir) when indicated for the treatment and prevention of influenza infection as an adjunct to vaccination. (See "Seasonal influenza vaccination in adults", section on 'Drifted H3N2 viruses during the 2014 to 2015 influenza season' and "Seasonal influenza in children: Prevention with vaccines", section on 'Drifted H3N2 viruses during the 2014 to 2015 influenza season'.)

New human papillomavirus (HPV) vaccine targets nine HPV types (February 2015)
Infection with human papillomavirus (HPV) types 16, 18, 31, 33, 45, 52, and 58 is implicated in approximately 90 percent of invasive cervical cancers. The US Food and Drug Administration has approved Gardasil 9, a 9-valent HPV vaccine that targets those seven HPV types in addition to the two types associated with genital warts (6 and 11), for the prevention of HPV-related disease [47]. In a trial that included approximately 14,000 females randomly assigned to receive the 9-valent or quadrivalent HPV vaccine, immune responses with the two vaccines were comparable for the HPV types targeted by both (6, 11, 16, and 18). Additionally, the 9-valent HPV vaccine was 97 percent effective for preventing precancerous and cancerous lesions of the cervix, vagina, and vulva associated with the other targeted HPV types (31, 33, 45, 52, and 58). Safety profiles were overall similar. We favor the 9-valent HPV vaccine for its broader HPV type coverage.

Routine immunization should be offered to boys and girls aged 11 to 12, but can be administered as early as nine years of age. Catch-up vaccination should be offered for males between the ages of 13 to 21 and females between 13 to 26 years who have not been previously vaccinated. Repeat vaccination with the 9-valent vaccine is likely not warranted for individuals who have completed a series with a different HPV vaccine.

(See “Recommendations for the use of human papillomavirus vaccines”, section on ‘Available vaccines’.)

Use of UpToDate is subject to the Subscription and License Agreement.

REFERENCES


42. Dyer C. UK is set to allow mitochondrial donation after MPs vote in favour. BMJ 2015; 350:h657.
47. FDA approves Gardasil 9 for prevention of certain cancers caused by five additional types of HPV http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm426485.htm.

**Literature Search**

**Search History:**
1. EMBASE; ("Intrapartum care" OR pre-eclampsia OR "preterm labour" OR "multiple pregnancy" OR "maternal medicine" OR "fetal abnormal*" OR "fetal growth").ti,ab; 29995 results.
2. EMBASE; 1 [Limit to: Latest Update and English Language]; 53 results.

**Title:** Evaluation of high-sensitivity C-reactive protein and serum lipid profile in southeastern nigerian women with pre-eclampsia

**Citation:** Medical Principles and Practice, May 2015, vol./is. 24/3(276-279), 1011-7571;1423-0151 (28 May 2015)

**Author(s):** Onuegbu A.J., Olisekodiaka J.M., Udo J.U., Umeononihu O., Amah U.K., Okwara J.E., Atuegbu C.

**Language:** English

**Abstract:** To evaluate the serum C-reactive protein (CRP) and lipid profile in women with pre-eclampsia. Materials and Methods: Thirty-five women with and 35 women without pre-eclampsia, who were in the 3rd trimester of pregnancy, were enrolled in this study. Weight in kilogrammes and height in metres were measured to calculate the mean body mass index (BMI) for each group. The diastolic and systolic blood pressures were measured. Lipid profile tests and serum CRP assay were done for all patients. Total cholesterol, triglycerides (TG) and high-density lipoprotein cholesterol (HDL-C) were determined using enzymatic methods, while low-density lipoprotein cholesterol (LDL-C) was calculated using Friedewald's formula. Results: The mean values of the BMI were 29.47 +/- 6.90 versus 26.14 +/- 2.92, of the diastolic blood pressure 109.14 +/- 15.41 versus 72.29 +/- 9.42 mm Hg and of the systolic blood pressure 170.57 +/- 19.55 versus 120.86 +/- 17.72 mm Hg for women with and without pre-eclampsia, respectively, and the differences were statistically significant (p = 0.012, p = 0.001, and p = 0.001, respectively). The biochemical analysis also indicated that the women with pre-eclampsia had a significantly higher mean serum CRP (8.57 +/- 2.68 vs. 6.46 +/- 2.46 mg/l, p = 0.001), TG (2.84 +/- 0.45 vs. 1.87 +/- 0.38 mmol/l, p = 0.001) and total cholesterol (5.59 +/- 0.92 vs. 4.63 +/- 0.78 mmol/l, p = 0.001) level but a lower mean HDL-C (1.10 +/- 0.12 vs. 1.26 +/- 0.15 mmol/l, p = 0.001) level than the controls. There was no statistical difference in the mean LDL-C values between the 2 groups (1.58 +/- 0.8 vs. 1.45 +/- 0.78 mmol/l, p > 0.05). Conclusion: Significant changes in CRP as well as TG, total cholesterol and HDL-C were associated with pre-eclampsia in these Southeastern Nigerian women.
Title: Influence of sampling site on uterine artery Doppler indices at 11-13+6 weeks gestation

Citation: Fetal Diagnosis and Therapy, May 2015, vol./is. 37/4(310-315), 1015-3837;1421-9964 (28 May 2015)

Author(s): Ridding G., Schluter P.J., Hyett J.A., McLennan A.C.

Language: English

Abstract: Uterine artery pulsatility index (PI) is a key variable in the first trimester screening for pre-eclampsia. The aims of the study were to examine the effect of sampling the uterine arteries at a site distal to the level of the internal os, and to determine a lower limit of peak systolic velocity (PSV) to establish an auditable standard. Material and Methods: PI and PSV measurements were performed at 11-13+6 weeks' gestation at two sites: at the level of the internal os and 3 cm distal to the internal os. Comparative analyses utilised the Student's paired t-test. A 90% reference interval of transformed PSV measurements at the internal os was generated by polynomial regression. Results: There was a significant reduction in both the PI (14.9%) and the PSV (17.4%) when measured at the distal site compared to the level of the internal os (both p < 0.001). The best estimated 5th centile for uterine artery PSV at 11-13+6 weeks was 60.9 cm/s. Conclusion: PI measurements performed distal to the internal os are significantly lower and will result in inaccurate pre-eclampsia risk assessment. PSV measurements below 60 cm/s are likely to indicate an incorrect sampling site. Development of auditable measurement standards is important to ensure accuracy of prospective pre-eclampsia screening.

Title: Neurosonographic assessment of the corpus callosum as imaging biomarker of abnormal neurodevelopment in late-onset fetal growth restriction

Citation: Fetal Diagnosis and Therapy, May 2015, vol./is. 37/4(281-288), 1015-3837;1421-9964 (28 May 2015)

Author(s): Egana-Ugrinovic G., Savchev S., Bazan-Arcos C., Puerto B., Gratacos E., Sanz-Cortes M.

Language: English

Abstract: To explore corpus callosum (CC) developmental differences by ultrasound in late-onset small fetuses compared with adequate for gestational age (AGA) controls. Study Design: Ninety four small (estimated fetal weight <10th centile) and 71 AGA fetuses were included. Small fetuses were further subdivided into fetal growth restriction (IUGR, n = 64) and small for gestational age (SGA, n = 30) based on poor perinatal outcome factors, that is, birth weight <3rd centile and/or abnormal cerebroplacental ratio and/or uterine artery Doppler. The entire cohort was scanned to assess CC by transvaginal neurosonography obtaining axial, coronal and midsagittal images. CC length, thickness, total area and the areas after a subdivision in 7 portions were evaluated by semiautomatic software. Furthermore, the weekly average growth of the CC in each study group was calculated and compared. Results: Small fetuses showed significantly shorter (small fetuses: 0.49 vs. AGA: 0.52; p < 0.01) and smaller CC (1.83 vs. 2.03; p < 0.01) with smaller splenium (0.47 vs. 0.55; p < 0.01) compared to controls. The CC growth rate was also reduced when compared to controls. Changes were more prominent in small fetuses with abnormal cerebroplacental Doppler suggesting fetal growth restriction. Conclusions: Neurosonographic assessment of CC showed significantly altered callosal development, suggesting in-utero brain reorganization in small fetuses. This data support the potential value of CC assessment by US to monitor brain development in fetuses at risk.
Title: Recognition by women's health care providers of long-term cardiovascular disease risk after preeclampsia

Citation: Obstetrics and Gynecology, June 2015, vol./is. 125/6(1287-1292), 0029-7844;1873-233X (28 Jun 2015)

Author(s): Wilkins-Haug L., Celi A., Thomas A., Frolkis J., Seely E.W.

Language: English

Abstract: Objective: To assess health care providers' knowledge regarding pregnancy outcome as a risk factor for cardiovascular disease and evaluate the variables associated with their responses to questions about routine surveillance for cardiovascular disease. Methods: A voluntary, anonymous survey of internal medicine and obstetric and gynecologic health care providers at an academic institution. Responses to a case-based and direct inquiry questionnaire were evaluated. Results: The overall response rate was 65% (173/265). When assessing cardiovascular risk, gynecologists compared with internists significantly more often requested a pregnancy history (44/49 [90%] compared with 56/75 [75%] , P.039) and more often attached importance to a history of preeclampsia (35/48 [73%] compared with 41/75 [55%], P.028). When a history of preeclampsia was obtained, internists more often obtained a fasting glucose test (25/52 [48%] compared with 9/43 [20.9%], P.009). A minority of health care providers recognized the importance of fetal growth restriction. Both health care provider groups demonstrated similar knowledge of general cardiovascular risk factors, screening tools, and interventions. Higher general cardiovascular knowledge was significantly associated with identification of pregnancy complications as cardiovascular risk factors (P.001). Conclusion: When assessing cardiovascular risk, internists were less likely than gynecologists to include a pregnancy history. However, once identified as at risk for cardiovascular disease, gynecologists were less likely than internists to obtain appropriate testing. Education concerning the link between certain pregnancy complications and future cardiovascular disease is needed. Areas of opportunity for education in both medical specialties are identified.

Publication Type: Journal: Article

Source: EMBASE

Full Text: Available from Ovid in Obstetrics and Gynecology

Title: Cell-free DNA analysis in maternal plasma in cases of fetal abnormalities detected on ultrasound examination

Citation: Obstetrics and Gynecology, June 2015, vol./is. 125/6(1330-1337), 0029-7844;1873-233X (28 Jun 2015)


Language: English

Abstract: Objective: To evaluate the utility of noninvasive prenatal testing using cell-free circulating fetal DNA for detection of the three main autosomal fetal trisomies in the setting of ultrasonographically identified fetal anomalies. Methods: Nine hundred patients at risk for fetal aneuploidy with or without ultrasonography anomalies and who underwent invasive procedures were included in the study. Cell-free DNA analysis was performed by massive parallel sequencing during a multicenter, noninterventional, prospective study and the results were compared with a fetal karyotype. Results: Among all 900 pregnancies, cell-free DNA identified 76 of 76 (100%) fetal Down syndrome, 22 of 25 (88%) trisomy 18, and 12 of 12 (100%) trisomy 13. In those with a normal ultrasonogram and normal cell-free DNA analysis, karyotype identified 2 of 483 (0.4%) additional aneuploidies other than trisomies 13, 18, and 21. In those with an abnormal ultrasonogram and a normal cell-free DNA analysis, there were 23 of 290 (7.9%) additional pathogenic karyotypes. These additional aneuploidies included sex chromosome abnormalities and triploidy. The rates of additional aneuploidies not identifiable by standard cell-free DNA screening in the two groups is significantly different at P<.01. Conclusion: In women with fetal abnormalities by ultrasonography, the rate of pathogenic chromosome
abnormalities missed by cell-free DNA was 8%. Noninvasive prenatal testing should not be offered to women with fetal abnormalities because a negative result is falsely reassuring.

**Publication Type:** Journal: Article

**Source:** EMBASE

**Full Text:** Available from *Ovid* in *Obstetrics and Gynecology*

**Title:** Association of reported trimester-specific smoking cessation with fetal growth restriction

**Citation:** Obstetrics and Gynecology, June 2015, vol./is. 125/6(1452-1459), 0029-7844:1873-233X (28 Jun 2015)

**Author(s):** Blatt K., Moore E., Chen A., Van Hook J., Defranco E.A.

**Language:** English

**Abstract:** Objective: To assess the association of reported smoking cessation at various time points during pregnancy with fetal growth restriction. Methods: This was a population-based retrospective cohort study of singleton nonanomalous live births using Ohio birth certificates, 2006-2012. Outcomes of women who reported smoking only in the 3 months before conception and women who reported smoking through the first, second, or third trimester were compared with a referent group of nonsmokers. Multivariate logistic regression assessed the association between smoking cessation at various times in pregnancy and fetal growth restriction less than the 10th and 5th percentiles. Results: Of 927,424 births analyzed, 75% of mothers did not smoke. Of smokers, 24% smoked preconception only, 10% quit after the first trimester, 4% quit after the second trimester, and 59% smoked throughout pregnancy. The rate of fetal growth restriction less than the 10th and 5th percentiles among nonsmokers was 8.1% and 3.6%, respectively. Although smoking only in the preconception period did not significantly increase fetal growth restriction risk, smoking in any trimester did. The adjusted odds ratio (95% confidence interval) for fetal growth restriction less than the 10th and 5th percentiles, respectively, of cessation after the first trimester was 1.19 (1.13-1.24) and 1.25 (1.17-1.33) and 1.67 (1.57-1.78) and 1.83 (1.68, 1.99) for cessation after the second trimester. Women who reported smoking throughout pregnancy had the highest risks of fetal growth restriction, 2.26 (2.22-2.31) and 2.44 (2.37-2.51), after accounting for the influence of race, low socioeconomic status, and medical comorbidities. Conclusion: Smoking of any duration during pregnancy is associated with an increased risk of fetal growth restriction with decreasing risk the earlier that cessation occurs. Smoking cessation programs should focus on the benefit of quitting as early in pregnancy as possible. LEVEL OF EVIDENCE: II

**Publication Type:** Journal: Article

**Source:** EMBASE

**Full Text:** Available from *Ovid* in *Obstetrics and Gynecology*

**Title:** Pre-eclampsia-associated reduction in placental growth factor impaired beta cell proliferation through PI3k signalling

**Citation:** Cellular Physiology and Biochemistry, May 2015, vol./is. 36/1(34-43), 1015-8987;1421-9778 (26 May 2015)

**Author(s):** Li J., Ying H., Cai G., Guo Q., Chen L.

**Language:** English

**Abstract:** Background/Aim: Reduction in serum placental growth factor (PLGF) frequently co-occurs with preeclampsia (PE) and gestational diabetes mellitus (GDM). Recently, we reported that impairment in gestational beta-cell mass growth may result from PE-associated reduction in PLGF and lead to development of GDM. Here, we studied the underlying mechanisms. Methods: We co-cultured primary mouse beta cells with
mouse islet endothelial cells (MS1), with or without PLGF. We also cultured beta cells in conditioned media from PLGF-treated MS1. Specific signal-pathway inhibitors were applied to cultured beta cells in conditioned media from PLGF-treated MS1. We analysed beta-cell proliferation by BrdU incorporation. We analysed changes in cell number by a MTT assay. We analysed protein levels of cell-cycle regulators in beta cells by Western blot. Results: PLGF itself failed to induce beta-cell proliferation, but significantly augmented proliferation of beta cells co-cultured with MS1, which resulted in significant increases in cell number. Conditioned media from the PLGF-treated MS1 cells similarly induced beta-cell proliferation, which was abolished by inhibition of PI3k/Akt signalling, but not by inhibition of either ERK/MAPK or JNK signalling. The induction of beta-cell proliferation by PLGF-treated MS1 cells appeared to involve decreases in cell-cycle inhibitors p21 and p27, and increases in cell-cycle activators CDK4 and CyclinD1. Conclusion: Gestational PLGF may target islet endothelial cells to release growth factors that activate PI3k/Akt signalling in beta cells to increase their proliferation. PE-associated reduction in PLGF impairs these processes to result in GDM.

Publication Type: Journal: Article

Source: EMBASE

Title: Identifying implementation bottlenecks for maternal and newborn health interventions in rural districts of the United Republic of Tanzania

Citation: Bulletin of the World Health Organization, June 2015, vol./is. 93/6(380-389), 0042-9686;1564-0604 (01 Jun 2015)

Author(s): Baker U., Peterson S., Marchant T., Mbaruku G., Temu S., Manzi F., Hanson C.

Language: English

Abstract: Objective To estimate effective coverage of maternal and newborn health interventions and to identify bottlenecks in their implementation in rural districts of the United Republic of Tanzania. Methods Cross-sectional data from households and health facilities in Tandahimba and Newala districts were used in the analysis. We adapted Tanahashi’s model to estimate intervention coverage in conditional stages and to identify implementation bottlenecks in access, health facility readiness and clinical practice. The interventions studied were syphilis and pre-eclampsia screening, partograph use, active management of the third stage of labour and postpartum care. Findings Effective coverage was low in both districts, ranging from only 3% for postpartum care in Tandahimba to 49% for active management of the third stage of labour in Newala. In Tandahimba, health facility readiness was the largest bottleneck for most interventions, whereas in Newala, it was access. Clinical practice was another large bottleneck for syphilis screening in both districts. Conclusion The poor effective coverage of maternal and newborn health interventions in rural districts of the United Republic of Tanzania reinforces the need to prioritize health service quality. Access to high-quality local data by decision-makers would assist planning and prioritization. The approach of estimating effective coverage and identifying bottlenecks described here could facilitate progress towards universal health coverage for any area of care and in any context.

Publication Type: Journal: Article

Source: EMBASE

Full Text: Available from EBSCOhost in Bulletin of the World Health Organization

Title: A clear and present danger: Inflammasomes DAMPing down disorders of pregnancy

Citation: Human Reproduction Update, May 2015, vol./is. 21/3(388-405), 1355-4786;1460-2369 (01 May 2015)

Author(s): Khan R.N., Hay D.P.
**Abstract:** Background: When the normal progression of pregnancy is threatened, inflammatory processes are often amplified in order to minimize detrimental effects and eliminate noxious agents. Inflammasomes are unique, intracellular, multiprotein assemblies that enable caspase-1 mediated proteolytic processing of the proinflammatory cytokine interleukin-1beta, levels of which are elevated in some forms of preterm birth and maternal metabolic disorders. Methods: A comprehensive review based on a search of PubMed and Medline for terms and combinations of terms incorporating 'inflammation', 'inflammasome', 'pregnancy', 'preterm birth', 'pre-eclampsia', 'interleukin-1', 'caspase-1' and others selected to capture key articles. Results: In the decade since the discovery of the inflammasome, between January 2002 and June 2014 over 2200 articles have been published. Articles in the reproductive field are scarce but there is clear evidence for a role of the inflammasome axis in pregnancy, preterm birth and the maternal metabolic syndrome. Conclusion: Further investigations on the inflammasome in pregnancy are needed in order to elucidate the biology of this unique structure in reproduction. Coordination of maternal, fetal and placental aspects of inflammasome function will potentially yield new information on the detection and transduction of host and non-host signals in the inflammatory response.

**Publication Type:** Journal: Article

**Source:** EMBASE

---

**Title:** Breast milk fat content of mothers to small-for-gestational-age infants

**Citation:** Journal of Perinatology, June 2015, vol./is. 35/6(444-446), 0743-8346; 1476-5543 (28 Jun 2015)

**Author(s):** Armoni Domany K., Mandel D., Hausman Kedem M., Lubetzky R.

**Language:** English

**Abstract:** Objective: Little is known about the composition of human milk (HM) expressed by mothers of asymmetrically growth-restricted infants. To test the null hypothesis that lactating mothers of small-for-gestational-age (SGA) infants produce milk with fat content similar to that of lactating mothers of infants whose growth is appropriate for gestational age (AGA). Study Design: Fifty-six lactating mothers of newborns (26 SGA and 30 AGA) were recruited within the first 3 days of delivery. Creamatocrit (CMT) levels in HM were measured at 72 h, 7 days and 14 days postdelivery in capillary tubes after centrifugation at 9000 r.p.m. for 5 min. Result: The groups did not differ in terms of maternal age, body mass index, gestational age (GA), pregnancy weight gain and parity. They differed significantly in terms of infant’s birth weight by design. The mean CMT levels at the three time points were similar for the two groups. This remained true when timing of the sample (colostrum, transitional, mature milk) was introduced as a confounder in the analysis of variance (general linear model). Conclusion: Fat content of HM is not affected by fetal growth status. We suggest that mothers of SGA infants may be reassured that their milk contains adequate amount of fat that is appropriate for the growth of their infants.

**Publication Type:** Journal: Article

**Source:** EMBASE

---

**Title:** Acute cortical blindness caused by pre-eclampsia in the antepartum; posterior reversible encephalopathy syndrome (PRES)

**Citation:** African Health Sciences, 2015, vol./is. 15/2(705-708), 1680-6905 (2015)

**Author(s):** Wang Y., Cao Q., Zhang L., Zhang S., Shi L., Sha O.

**Language:** English

**Publication Type:** Journal: Article

**Source:** EMBASE
Title: Transcriptomic analysis of human placenta in intrauterine growth restriction

Citation: Pediatric Research, June 2015, vol./is. 77/6(799-807), 0031-3998;1530-0447 (26 Jun 2015)

Author(s): Madeleneau D., Buffat C., Mondon F., Grimault H., Rigourd V., Tsatsaris V., Letourneur F., Vaiman D., Barbaux S., Gascoin G.

Language: English

Abstract: Background: Intrauterine growth restriction (IUGR) is a frequent complication of pregnancy defined as a restriction of fetal growth. The objective of this work was to improve the knowledge on the pathophysiology of IUGR using a genome-wide method of expression analysis. Methods: We analyzed differentially expressed genes in pooled placental tissues from vascular IUGR (four pools of three placentas) and normal pregnancies (four pools of three placentas) using a long nucleotide microarray platform (Nimblegen). We first did a global bioinformatics analysis based only on P value without any a priori. We secondly focused on “target” genes among the most modified ones. Finally, reverse transcription quantitative polymerase chain reaction (RT-qPCR) was performed on an extended panel of tissue samples (n = 62) on selected “target”. Results: We identified 636 modified genes among which 206 were upregulated (1.5 and higher; P < 0.05). Groups of patients were classified unambiguously. Genes involved in mitochondrial function and oxidative phosphorylation were decreased affecting three out of five complexes of the respiratory chain of the mitochondria, and thus energy production and metabolism. Among the most induced genes, we identified LEP, IGFBP1, and RBP4. Conclusion: Complementary studies on the role and function of LEP, IGFBP1, and RBP4 in IUGR pathophysiology and also in fetal programming remain necessary.

Publication Type: Journal: Article

Source: EMBASE

Title: Physical activity during pregnancy and maternal-child health (PAMELA): Study protocol for a randomized controlled trial

Citation: Trials, May 2015, vol./is. 16/1, 1745-6215 (May 24, 2015)


Language: English

Abstract: Background: Preterm birth is associated with most cases of neonatal deaths and negative health outcomes, and hypertensive disorders. Hypertension is influenced by maternal behavior, such as physical activity. Physical activity is associated with better outcomes for mother and fetus, besides healthier weight gains during pregnancy. Few women are physically active during pregnancy and few clinical trials have been carried out with pregnant women. The aim of this paper is to describe the protocol of a controlled trial evaluating whether regular exercise during pregnancy may result in improved maternal-child health and neonatal outcomes. Methods/Design: The PAMELA (Physical Activity for Mothers Enrolled in Longitudinal Analysis) trial is a randomized controlled trial nested in a birth cohort study. Eligible women belonging to the birth cohort will be invited (between the 16th and 20th week of gestation) to enroll in the trial. Baseline data (blood and urine samples, anthropometry and pulmonary function) will be collected at enrollment. The same assessments will be repeated eight and 16 weeks after baseline. After randomization, women will be allocated into either one of these groups: control, 426 women who will be advised to keep their usual daily activities; and intervention, 213 women who will engage in an exercise program, three sessions a week. At least 70% attendance over 16 weeks will be required to be considered compliant to the intervention. Exercise protocol will include aerobics, strength and flexibility training. Maternal and child outcomes will be measured at the 36th week of gestation, at birth and at three, 12, 24 and 48 months postpartum. An intention-to-treat analysis will be performed. Discussion: Few women are active during pregnancy and a vast majority decrease their activities or even quit exercising. We
present a population-based regular exercise intervention focused on the prevention of hypertension, pre-eclampsia and preterm birth. Data on the underlying cohort will allow future analysis using different outcomes with low probability of recall bias or misclassification of exposure status. Results will potentially influence prenatal care counseling in regards to physical activity. Trial registration: Clinicaltrials.gov identifier: NCT02148965, registered on 22 May 2014.

**Publication Type:** Journal: Article

**Source:** EMBASE

**Full Text:** Available from *BioMed Central* in [Trials](#)
Available from *National Library of Medicine* in [Trials](#)

**Title:** Dose-dependent biphasic leptin-induced proliferation is caused by non-specific IL-6/NF-kappaB pathway activation in human myometrial cells

**Citation:** British Journal of Pharmacology, June 2015, vol./is. 172/12(2974-2990), 0007-1188;1476-5381 (01 Jun 2015)

**Author(s):** Barrichon M., Hadi T., Wendremaire M., Ptasinski C., Seigneuric R., Marcion G., Delignette M., Marchet J., Dumas M., Sagot P., Bardou M., Garrido C., Lirussi F.

**Language:** English

**Abstract:** Background and Purpose Leptin, an adipokine synthesized by the placenta during pregnancy, has been proposed for the management of preterm labour (PTL), as it is able to prevent in vitro uterine contractility and remodelling associated with labour onset. Another common feature of labour onset is the phenotypic switch of myometrial smooth muscle cells from a proliferative to a hypertrophic state. As proliferative effects have been demonstrated for leptin in other tissues, we aimed to investigate its ability to induce myometrial proliferation and thus to maintain uterine quiescence. Experimental Approach We stimulated human primary myometrial smooth muscle cells with leptin in the presence or absence of receptor antagonists or signalling pathway inhibitors. Key Results Leptin induced myometrial cell proliferation in a biphasic manner. At 6.25 ng/mL, leptin-induced proliferation was mediated by the leptin receptor and required the early activation of ERK1/2. At a concentration above 25 ng/mL, leptin induced direct non-specific stimulation of the IL-6 receptor, leading to NF-kappaB activation, and exerted anti-proliferative effects. However, at 50 ng/mL, leptin re-induces proliferation via IL-6 receptor stimulation that requires STAT3 and delayed ERK1/2 activation. Conclusions and Implications These data bring new insights into leptin signalling-induced myometrial proliferation and its interrelationship with the IL-6/IL-6 receptor axis. In the light of our previous work, the present study emphasizes the potential value of leptin in the pharmacological management of PTL and it also strengthens the hypothesis that leptin might be a contributory factor in the parturition-related disorders observed in obese women.

**Publication Type:** Journal: Article

**Source:** EMBASE

**Title:** Endocan-1 concentrations in maternal and fetal plasma and placenta in pre-eclampsia in the third trimester of pregnancy

**Citation:** Cytokine, July 2015, vol./is. 74/1(152-156), 1043-4666;1096-0023 (July 01, 2015)

**Author(s):** Hentschke M.R., Lucas L.S., Mistry H.D., Pinheiro da Costa B.E., Poli-de-Figueiredo C.E.

**Language:** English

**Abstract:** Introduction: Endocan-1 has been proposed as a possible biomarker and predictor of vascular endothelial related pathologies. Thus, we hypothesised that Endocan-1 levels would be up-regulated in maternal plasma and placenta from women with pre-eclampsia. The aim of our study was to compare Endocan-1
concentrations in maternal/fetal plasma and placentae from normotensive and pre-eclamptic pregnancies.

Methods: Observational and case-controlled study, at the Sao Lucas Hospital, Brazil. Placental biopsies, maternal/umbilical venous (fetal) plasma were taken from 67 normotensive and 50 pre-eclamptic women. Endocan-1 levels were quantified using MagPlex<sup>TH</sup>-C and analysed by Analysis of Covariance and Pearson correlation. The null hypothesis was rejected at p<0.05. Results: Higher levels of Endocan-1 were found in maternal plasma in the pre-eclamptic group (mean ratio = 1.49; 95% confidence interval: 1.19-1.85, p= 0.001), with a moderate effect size (Cohen’s D= 0.84). Placental Endocan-1 levels (mg/g) were lower in pre-eclampsia (1.52 [1.10, 2.40] vs. 2.24 [1.32, 3.75], p= 0.033) and fetal Endocan-1 concentration (ng/ml) did not show any difference between groups (3.10 [2.60, 4.54] vs. 2.91 [2.20, 3.66], p= 0.085). In addition, an up-regulation of maternal plasma Endocan-1 in the pre-eclamptic group was observed when stratified in relation to gestational age, systolic blood pressure and proteinuria (p< 0.05, for all). Furthermore, a positive correlation between Endocan-1 concentration in maternal vs. fetal plasma was also found (r= 0.258, p= 0.015). For the matched samples, a negative correlation between Endocan-1 in maternal/fetal plasma with birthweights, placental weights and gestational age at delivery was observed (r= 0.258, p< 0.05 for all). Discussion: Endocan-1 is increased in women with pre-eclampsia for all strata, which highlight the importance of this molecule as a possible biomarker. The negative correlations between Endocan-1 and clinical data suggest that this molecule may also be involved with prematurity and low birth weight, which warrants further investigations.

Publication Type: Journal: Article

Source: EMBASE

Title: Animal models of fetal growth restriction: Considerations for translational medicine

Citation: Placenta, June 2015, vol./is. 36/6(623-630), 0143-4004;1532-3102 (01 Jun 2015)

Author(s): Swanson A.M., David A.L.

Language: English

Abstract: Fetal growth restriction (FGR) is the failure of a fetus to reach its full genetic growth potential. It occurs in up to 8% of pregnancies, and after premature birth is the second leading cause of infant mortality and morbidity. There is no treatment currently available for FGR. Its primary cause, when not attributable to structural or genetic defects of the fetus, is 'placental insufficiency'. This broad definition covers the inability of the fetus to acquire sufficient nutrients and oxygen, and is influenced by a number of factors including altered maternal or fetal blood flow, reduced nutrient transport or changes in the placenta such as increased barrier thickness inhibiting nutrient transfer. For those researchers studying FGR and developing new therapies, choosing an animal model is a crucial consideration. It is vital to clearly frame the question being asked, as this will impact the factor influencing fetal nutrient delivery in the model, and will also affect the applicability of the results to the human condition. This review examines the range of in vivo models of FGR available for those engaged in translational research.

Publication Type: Journal: Article

Source: EMBASE

Title: Placental pathology measures: Can they be rapidly and reliably integrated into large-scale perinatal studies?

Citation: Placenta, June 2015, vol./is. 36/6(687-692), 0143-4004;1532-3102 (01 Jun 2015)

Author(s): Catov J.M., Peng Y., Scifres C.M., Parks W.T.

Language: English

Abstract: Introduction Normal placental function is critical to optimize fetal growth and development, but few perinatal studies incorporate placental measures. Our objectives were to link clinical placental pathology records to birth records, and validate an automated abstraction strategy. Methods Of the 47,329 deliveries at our hospital
from 2008 to 2012, we retrieved electronic copies of pathology reports (n = 21,585, 45.4%). Pathology data were extracted with Extensible Markup Language (XML) script using Java and structured query language (SQL) transformed the text information into variables that were linked to delivery data. A subgroup of records was selected for a validation study that compared automated to manual abstraction (n = 144). Results Linked birth-placental records included 93% of all preterm (<37 weeks, n = 5108) and 37.1% of term births (n = 14,019). Over 90% of deliveries complicated by preeclampsia, chronic hypertension, or gestational diabetes included pathology data. The validation study indicated excellent agreement, sensitivity and specificity between the two abstraction strategies. Discussion We demonstrate a reliable approach to electronically integrate placental pathology and delivery data. These linked data provide a platform to identify risk factors and sequelae associated with placental lesions.

Publication Type: Journal: Article

Source: EMBASE

Title: Doppler abnormalities in monochorionic diamniotic twin pregnancies with discordant growth

Citation: Journal of Perinatology, June 2015, vol./is. 35/6(387-389), 0743-8346;1476-5543 (28 Jun 2015)

Author(s): Zuckerwise L., Nayeri U., Abdel-Razeq S., Copel J., Bahtiyar M.O.

Language: English

Abstract: Objective: We studied whether abnormal umbilical artery (UA) Doppler flow velocity waveforms occur with higher frequency in monochorionic diamniotic (MCDA) twin gestations with discordant fetal growth and whether this impacted neonatal outcome. Study design: We performed a retrospective study of MCDA twin pairs. We collected data from an electronic medical record. We classified pregnancies as discordant if there was at least 20% birth weight discordance. Abnormal UA Doppler velocity waveforms included absent or reversed end diastolic flow. We analyzed the data with chi square, Student's t-test and analysis of variance as appropriate. Result: Seventy-three twin pairs met criteria for inclusion, including 16 with discordant growth. The discordant group was significantly more affected with twin-to-twin transfusion syndrome (TTTS) (P=0.02). The smaller fetuses in discordant pairs were more likely to display abnormal UA Doppler flow velocity waveforms (P<0.01). These neonates also had lower Apgar scores (P=0.03) and were more likely to require care in a neonatal intensive care unit. Our findings persisted after excluding pregnancies with TTTS. Conclusion: In MCDA twin gestations complicated by discordant growth, there is an increased frequency of abnormal UA Doppler flow velocity waveforms in small fetuses, and these neonates face clinical challenges after birth.

Publication Type: Journal: Article

Source: EMBASE

Title: Genome-wide transcriptome directed pathway analysis of maternal pre-eclampsia susceptibility genes

Citation: PLoS ONE, May 2015, vol./is. 10/5, 1932-6203 (26 May 2015)


Language: English

Abstract: Background: Preeclampsia (PE) is a serious hypertensive pregnancy disorder with a significant genetic component. Numerous genetic studies, including our own, have yielded many susceptibility genes from distinct functional groups. Additionally, transcriptome profiling of tissues at the maternal-fetal interface has likewise yielded many differentially expressed genes. Often there is little overlap between these two approaches, although genes identified in both approaches are significantly associated with PE. We have thus taken a novel integrative bioinformatics approach of analysing pathways common to the susceptibility genes and the PE transcriptome. Methods: Using Illumina Human Ht12v4 and Wg6v3 BeadChips, transcriptome profiling was conducted on n = 65 normotensive and n = 60 PE decidua basalis tissues collected at delivery. The R software
package libraries lumi and limma were used to preprocess transcript data for pathway analysis. Pathways were analysed and constructed using Pathway Studio. We examined ten candidate genes, which are from these functional groups: activin/inhibin signalling - ACVR1, ACVR1C, ACVR2A, INHA, INHBB; structural components - COL4A1, COL4A2 and M1 family aminopeptidases - ERAP1, ERAP2 and LNPEP.

Results/Conclusion: Major common regulators/targets of these susceptibility genes identified were AGT, IFNG, IL6, INHBA, SERPINE1, TGFB1 and VEGFA. The top two categories of pathways associated with the susceptibility genes, which were significantly altered in the PE decidual transcriptome, were apoptosis and cell signaling (p < 0.001). Thus, susceptibility genes from distinct functional groups share similar downstream pathways through common regulators/targets, some of which are altered in PE. This study contributes to a better understanding of how susceptibility genes may interact in the development of PE. With this knowledge, more targeted functional analyses of PE susceptibility genes in these key pathways can be performed to examine their contributions to the pathogenesis and severity of PE.

**Publication Type:** Journal: Article

**Source:** EMBASE

**Full Text:**
Available from *National Library of Medicine* in PLoS ONE

---

**Title:** Obstetrical considerations and management of antiphospholipid syndrome

**Citation:** Open Urology and Nephrology Journal, 2015, vol./is. 8/(22-26), 1874-303X (2015)

**Author(s):** Gibbins K.J., Silver R.M.

**Language:** English

**Abstract:** Antiphospholipid syndrome is a pro-thrombotic, pro-inflammatory condition defined by at least one clinical criterion and one laboratory finding. Clinical criteria are met by history of thrombosis or obstetric morbidity, including recurrent early pregnancy loss, fetal death, or delivery prior to 34 weeks gestation due to pre-eclampsia or placental insufficiency. Laboratory criteria are evidence of lupus anticoagulant or high titers of anticardiolipin or anti-s-2- glycoprotein-I IgG or IgM. Treatment during pregnancy is primarily based on anticoagulant therapy, either at prophylactic or therapeutic doses depending on thrombosis history. This treatment certainly reduces thrombosis risk and may also improve obstetric outcome.

**Publication Type:** Journal: Article

**Source:** EMBASE

---

**Title:** Subfertility/infertility and assisted reproductive conception are independent risk factors for pre-eclampsia

**Citation:** BJOG: An International Journal of Obstetrics and Gynaecology, June 2015, vol./is. 122/7(923), 1470-0328;1471-0528 (01 Jun 2015)

**Author(s):** Sibai B.M.

**Language:** English

**Publication Type:** Journal: Short Survey

**Source:** EMBASE

---

**Title:** Maternal hypertensive disorders, antihypertensive medication use, and the risk of birth defects: A case-control study

**Citation:** BJOG: An International Journal of Obstetrics and Gynaecology, June 2015, vol./is. 122/7(1002-1009), 1470-0328;1471-0528 (01 Jun 2015)

Language: English

Abstract: Objective To study previously identified associations between specific maternal hypertensive disorders and/or prenatal exposure to antihypertensive medication and birth defects. Design Case-control study. Setting Slone Birth Defects Study, 1998-2010. Population A total of 5568 cases with birth defects and 7253 liveborn infants without malformations as controls. Methods Adjusted odds ratios (aORs) for birth defects associated with prenatal exposure to maternal hypertensive disorders and/or antihypertensive medication were calculated using multivariable logistic regression analyses. Main outcome measures Specific birth defects previously linked to maternal hypertension or antihypertensive medication use during pregnancy. Results Non-pharmacologically managed chronic hypertension was associated with a three-fold risk of oesophageal atresia (95% CI 1.2-8.3), and pre-eclampsia superimposed on non-pharmacologically managed chronic hypertension was associated with ventricular septal defects (aOR 3.9, 95% CI 1.3-11.7) and atrial septal defects (aOR 6.5, 95% CI 1.8-23.7). For chronic hypertension that was pharmacologically treated early in pregnancy, increased risks were observed for first-degree hypospadias (aOR 2.9, 95% CI 1.1-7.4). Non-pharmacologically managed pre-eclampsia was related to second-/third-degree hypospadias and ventricular septal defects. Pharmacological treatment for gestational hypertension was associated with a number of congenital heart defects. Conclusions Our results confirm some, but not all, previously identified associations between pharmacologically treated and non-pharmacologically managed hypertensive disorders and specific birth defects. They support the hypothesis that physiological changes early in pregnancy that manifest in gestational hypertension and pre-eclampsia may play a role in the aetiology of major birth defects, including congenital heart defects and hypospadias.

Publication Type: Journal: Article

Source: EMBASE

Title: Pre-eclampsia and assisted reproductive technologies: Consequences of advanced maternal age, interbirth intervals, new partner and smoking habits

Citation: BJOG: An International Journal of Obstetrics and Gynaecology, June 2015, vol./is. 122/7(915-922), 1470-0328;1471-0528 (01 Jun 2015)

Author(s): Tandberg A., Klungsoyr K., Romundstad L.B., Skjaerven R.

Language: English

Abstract: Objective To examine the risk of pre-eclampsia (PE) in women conceiving after assisted reproductive technologies (ART). Potential confounding from maternal age, long intervals between births, new partner and smoking were evaluated. Design and setting Population-based cohort study with data from the Medical Birth Registry of Norway. Population A total of 501 766 mothers with offspring from 1988 to 2009. Methods Births to the same mother were linked in sibship data files with information of ART. Main outcome measures Odds ratio (OR) (95% confidence intervals) of PE in pregnancies conceived by ART compared with spontaneous conception, stratified by parity. Results The prevalence of PE was 5.1% in first, 2.2% in second and 2.1% in third pregnancies. Corresponding figures in ART pregnancies were 6.0%, 3.3% and 4.4%. Hence, the odds ratios of PE in ART pregnancies relative to spontaneous pregnancies increased from 1.2 (1.1-1.3) in first, 1.5 (1.3-1.8) in second to 2.1 (1.4-3.3) in third pregnancies. Adjusting by maternal age lowered the odds ratio to 1.3 (1.1-1.6) and 1.8 (1.2-2.8) in second and third pregnancies, respectively. Multi-adjusted, birth interval had more impact than change of partner. Smoking was associated with a strongly reduced PE risk (odds ratio 0.65; 0.62-0.69), but there was no confounding by smoking on the ART associated risk. Conclusions Assisted reproductive technologies increases the risk of PE, and the risk may increase by parity. The association between ART pregnancies and PE is to some extent explained by interbirth intervals and advanced maternal age, but not to change of partner or smoking.

Publication Type: Journal: Article

Source: EMBASE
Title: Angiogenesis in the placenta: The role of reactive oxygen species signaling

Citation: BioMed Research International, 2015, vol./is. 2015/, 2314-6133;2314-6141 (2015)

Author(s): Pereira R.D., De Long N.E., Wang R.C., Yazdi F.T., Holloway A.C., Raha S.

Language: English

Abstract: Proper placental development and function are central to the health of both the mother and the fetus during pregnancy. A critical component of healthy placental function is the proper development of its vascular network. Poor vascularization of the placenta can lead to fetal growth restriction, preeclampsia, and in some cases fetal death. Therefore, understanding the mechanisms by which uterine stressors influence the development of the placental vasculature and contribute to placental dysfunction is of central importance to ensuring a healthy pregnancy. In this review we discuss how oxidative stress observed in maternal smoking, maternal obesity, and preeclampsia has been associated with aberrant angiogenesis and placental dysfunction resulting in adverse pregnancy outcomes. We also highlight that oxidative stress can influence the expression of a number of transcription factors important in mediating angiogenesis. Therefore, understanding how oxidative stress affects redox-sensitive transcription factors within the placenta may elucidate potential therapeutic targets for correcting abnormal placental angiogenesis and function.

Publication Type: Journal: Review

Source: EMBASE

Full Text: Available from EBSCOhost in BioMed Research International

Title: Reduction in maternal circulating ouabain impairs offspring growth and kidney development

Citation: Journal of the American Society of Nephrology, May 2015, vol./is. 26/5(1103-1114), 1046-6673;1533-3450 (01 May 2015)

Author(s): Dvela-Levitt M., Cohen-Ben Ami H., Rosen H., Ornoy A., Hochner-Celnikier D., Granat M., Lichtstein D.

Language: English

Abstract: Ouabain, a steroid present in the circulation and in various tissues, was shown to affect the growth and viability of various cells in culture. To test for the possible influence of this steroid on growth and viability in vivo, we investigated the involvement of maternal circulating ouabain in the regulation of fetal growth and organ development. We show that intraperitoneal administration of anti-ouabain antibodies to pregnant mice resulted in a >80% decline in the circulating ouabain level. This reduction caused a significant decrease in offspring body weight, accompanied by enlargement of the offspring heart and inhibition of kidney and liver growth. Kidney growth inhibition was manifested by a decrease in the size and number of nephrons. After the reduction in maternal circulating ouabain, kidney expression of cyclin D1 was reduced and the expression of the alpha1 isoform of the Na<sup>+</sup>, K<sup>+</sup>-ATPase was increased. In addition, the elevation of proliferation signals including ERK1/2, p-90RSK, Akt, PCNA, and Ki-67, and a reduction in apoptotic factors such as Bax, caspase-3, and TUNEL were detected. During human pregnancy, the circulating maternal ouabain level increased and the highest concentration of the steroid was found in the placenta. Furthermore, circulating ouabain levels in women with small-for-gestational age neonates were significantly lower than the levels in women with normal-for-gestational age newborns. These results support the notion that ouabain is a growth factor and suggest that a reduction in the concentration of this hormone during pregnancy may increase the risk of impaired growth and kidney development.

Publication Type: Journal: Article

Source: EMBASE
Title: Living kidney donation: Outcomes, ethics, and uncertainty

Citation: The Lancet, May 2015, vol./is. 385/9981(2003-2013), 0140-6736;1474-547X (16 May 2015)

Author(s): Reese P.P., Boudville N., Garg A.X.

Language: English

Abstract: Since the first living-donor kidney transplantation in 1954, more than half a million living kidney donations have occurred and research has advanced knowledge about long-term donor outcomes. Donors in developed countries have a similar life expectancy and quality of life as healthy non-donors. Living kidney donation is associated with an increased risk of end-stage renal disease, although this outcome is uncommon (<0.5% increase in incidence at 15 years). Kidney donation seems to elevate the risks of gestational hypertension and pre-eclampsia. Many donors incur financial expenses due to factors such as lost wages, need for sick days, and travel expenses. Yet, most donors have no regrets about donation. Living kidney donation is practised ethically when informed consent incorporates information about risks, uncertainty about outcomes is acknowledged when it exists, and a donor's risks are proportional to benefits for the donor and recipient. Future research should determine whether outcomes are similar for donors from developing countries and donors with pre-existing conditions such as obesity.

Publication Type: Journal: Article

Source: EMBASE

Full Text: Available from The Lancet in Lancet, The
Available from Elsevier in Lancet, The

Title: The biomarkers of fetal growth in intrauterine growth retardation and large for gestational age cases: From adipocytokines to a metabolomic all-in-one tool

Citation: Expert Review of Proteomics, June 2015, vol./is. 12/3(309-316), 1478-9450;1744-8387 (01 Jun 2015)

Author(s): Dessi A., Pravettoni C., Cesare Marincola F., Schirru A., Fanos V.

Language: English

Abstract: Adipose tissue is no longer considered as inert; the literature describes the role it plays in the production of many substances, such as adiponectin, visfatin, ghrelin, S100B, apelin, TNF, IL-6 and leptin. These molecules have specific roles in humans and their potential as biomarkers useful for identifying alterations related to intrauterine growth retardation and large for gestational age neonates is emerging. Infants born in such conditions have undergone metabolic changes, such as fetal hypo- or hyperinsulinemia, which may lead to development of dysmetabolic syndrome and other chronic diseases in adulthood. In this review, these biomarkers are analyzed specifically and it is discussed how metabolomics may be an advantageous tool for detection, discrimination and prediction of metabolic alterations and diseases. Thus, a holistic approach, such as metabolomics, could help the prevention and early diagnosis of metabolic syndrome.

Publication Type: Journal: Review

Source: EMBASE

Title: Birth weight and obstetric complications determine age at onset in first episode of psychosis

Citation: Journal of Psychiatric Research, June 2015, vol./is. 65/(108-114), 0022-3956;1879-1379 (01 Jun 2015)

Abstract: Background: Earlier age at onset of psychosis (AOP) has been associated with poor social adjustment and clinical outcome. Genetic and environmental factors such as obstetric complications, parental history of psychosis, advanced paternal age at time of birth, low birth weight and gestational age, and use of drugs have been described as bringing AOP forward. This study aims to evaluate the relationship between AOP and these factors in a sample of first episode of psychosis (FEP) patients. Methods: Clinical and sociodemographic data, age at FEP, age of parents at birth, parental history of psychosis, drug use habits of the mother during pregnancy and of the patient before psychotic onset, and Lewis and Murray obstetric complication scale were obtained from 90 patients with FEP. Statistical analysis was performed by means of Pearson correlations, Chi-square tests, Student T-test analyses and a linear regression model using SPSS version 22. Results: Pre-eclampsia, need for incubator at birth, use of forceps, parental history of psychosis, and low birth weight were associated with an earlier AOP. Use of forceps and birth weight are the variables which best predict AOP in FEP. Stimulant drugs, which were mostly used together with cannabis and cocaine, were the only substances associated with an earlier AOP. Conclusions: Our findings are consistent with previous study results and underline the role of the prenatal period in the development of psychosis and the importance of careful monitoring of pregnancy and delivery, especially in cases with familial history.

Publication Type: Journal: Article

Source: EMBASE

Title: Transforming Communication and Safety Culture in Intrapartum Care: A Multi-Organization Blueprint

Citation: Journal of Midwifery and Women's Health, May 2015, vol./is. 60/3(237-243), 1526-9523;1542-2011 (01 May 2015)

Author(s): Lyndon A., Johnson M.C., Bingham D., Napolitano P.G., Joseph G., Maxfield D.G., O'Keefe D.F.

Language: English

Abstract: Effective, patient-centered communication facilitates interception and correction of potentially harmful conditions and errors. All team members, including women, their families, physicians, midwives, nurses, and support staff, have a role in identifying the potential for harm during labor and birth. However, the results of collaborative research studies conducted by organizations that represent professionals who care for women during labor and birth indicate that health care providers may frequently witness, but may not always report, problems with safety or clinical performance. Some of these health care providers felt resigned to the continuation of such problems and fearful of retribution if they tried to address them. Speaking up to address safety and quality concerns is a dynamic social process. Every team member must feel empowered to speak up about concerns without fear of put-downs, retribution, or receiving poor-quality care. Patient safety requires mutual accountability: individuals, teams, health care facilities, and professional associations have a shared responsibility for creating and sustaining environments of mutual respect and engaging in highly reliable perinatal care. Defects in human factors, communication, and leadership have been the leading contributors to sentinel events in perinatal care for more than a decade. Organizational commitment and executive leadership are essential to creating an environment that proactively supports safety and quality. The problem is well-known; the time for action is now.

Publication Type: Journal: Note

Source: EMBASE

Title: Quality of first trimester risk prediction models for pre-eclampsia: A systematic review
Citation: BJOG: An International Journal of Obstetrics and Gynaecology, June 2015, vol./is. 122/7(904-914), 1470-0328;1471-0528 (01 Jun 2015)

Author(s): Brunelli V.B., Prefumo F.

Language: English

Abstract: Background There is an increasing interest in first trimester risk prediction models for pre-eclampsia. Objectives To systematically review and critically assess the building and reporting of methods used to develop first trimester risk prediction models for pre-eclampsia. Search strategy Search of PubMed and EMBASE databases from inception to July 2013. Selection criteria Logistic regression model for predicting the risk of pre-eclampsia in the first trimester, including uterine artery Doppler among independent variables. Data collection and analysis We extracted information on study design, outcome definition, participant recruitment, sample size and number of events, risk predictors and their selection and treatment, model-building strategies, missing data, overfitting and validation. Main results The initial search identified 80 articles. A total of 24 studies were eligible for review, from which 38 predictive models were identified. The median number of study participants was 697 [interquartile range (IQR) 377-5126]. The median number of cases of pre-eclampsia per model was 37 (IQR 19-97). The median number of risk predictors was 5 (IQR 3.75-7). In 22% of the models, the number of events per variable was fewer than the commonly recommended value of 10 events per predictor; this proportion increased to 94% in models for early pre-eclampsia. Treatment and handling of missing data were not reported in 37 models. Only three models reported model validation. Conclusions We found frequent methodological deficiencies in studies reporting risk prediction models for pre-eclampsia. This may limit their reliability and validity.

Publication Type: Journal: Article

Source: EMBASE

---

Title: Preventing necrotising enterocolitis in very preterm infants: Current evidence

Citation: Paediatrics and Child Health (United Kingdom), June 2015, vol./is. 25/6(265-270), 1751-7222;1878-206X (01 Jun 2015)

Author(s): McGuire W., Young L., Morgan J.

Language: English

Abstract: Necrotising enterocolititis (NEC) is the most common serious gastrointestinal disorder affecting very preterm or very low birth weight infants. The risk is inversely proportional to gestational age and weight at birth. Fetal growth restriction and compromise may be additional specific risk factors. Postnatally, a variety of practices have been implicated in the pathogenesis of NEC including formula feeding, early and rapid advancement of enteral feed volumes, and exposure to H<inf>2</inf>-receptor antagonists. NEC, particularly severe NEC requiring surgical intervention, is associated with acute morbidity and mortality, prolonged hospital stay, and adverse long term neuro-developmental outcomes. With the exception of feeding with human milk, only limited evidence is currently available to support interventions to prevent NEC. Promising strategies that merit further evaluation in randomized controlled trials include the use of standardized feeding protocols and immuno-prophylaxis with prebiotics and probiotics.

Publication Type: Journal: Review

Source: EMBASE

---

Title: Chronic ayurvedic medicine use in pregnancy associated with fetal abnormalities

Citation: Clinical Toxicology, May 2015, vol./is. 53/4(288), 1556-3650 (May 2015)

Author(s): Wong A., Dargan P.I., Koutsogiannis Z., Greene S.L.
Abstract: Objectives: Although there are potential associations between lead exposure during pregnancy and adverse pregnancy outcomes, there is limited data to whether in utero lead exposure is associated with major congenital abnormalities. We describe a case of major congenital abnormalities associated with maternal chronic lead ingestion throughout pregnancy. Case report: A 28-year-old primigravida female was referred to a maternal-fetal specialist obstetrician because a fetal ultrasound at 20 weeks showed anhydramnios, absence of one kidney and agenesis of the other. She had a history of lethargy throughout her pregnancy. She had normocytic anaemia with a haemoglobin of 95 g/L at 24 weeks and 88 g/L at 30 weeks gestation; with a normal white cell count and platelets. Liver and renal function, vitamin B12, folate and ferritin were within normal limits. A blood film performed at 30 weeks gestation showed basophilic stippling. The blood lead level (BLL) was 67 mcg/dL (3.2 mcmol/L) at 30 weeks. The toxicology unit was consulted and chelation with oral succimer was commenced (10 mg/kg three-times daily for 5 days followed by 10 mg/kg twice-daily for 14 days). Three weeks after chelation her BLL was 14.4 mcg/dL (0.7 mcmol/L). The patient had been taking an Ayurvedic medicine prescribed by a practitioner in India and had purchased sufficient stock to self-import this to Australia. She had been taking two tablets a day for the previous six months. Analysis of the tablets showed a lead content of 47%; small amounts of mercury (1.7%) and arsenic (< 0.01%) were also detected but urine arsenic and mercury concentrations were within normal limits. No other sources of lead were found. Three days prior to an elective caesarian section at 39 weeks she received IV calcium disodium edetate 40 mg twice-daily to decrease her lead concentrations prior to delivery. She gave birth to a baby with pulmonary hypoplasia, a pneumothorax and minimal kidney tissue. The cord blood lead concentration at delivery was 8.0 microg/dL (0.37 mcmol/L). Unfortunately, the baby died 2 days later from respiratory failure. Three weeks postpartum the mother's BLL was 17.3 microg/dL (0.8 mcmol/L). Conclusion: This case suggests that maternal lead toxicity during pregnancy may be associated with major congenital abnormalities.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Modulation of maternal oxidative stress causes inflammation and alters fetal neurodevelopment

Citation: Alcoholism: Clinical and Experimental Research, June 2015, vol./is. 39/(230A), 0145-6008 (June 2015)

Author(s): Akhtar F.F., Rouse C.A., Maffi S.K.

Language: English

Abstract: In vivo and in vitro studies have shown that ethanol (EtOH) exposure causes oxidative stress and antioxidant imbalance that ultimately disrupts normal fetal development. Maternal oxidative stress is known to cause inflammation which may impact in utero fetal growth. However, it remains unclear how changes in maternal antioxidant status around mid-gestation affect the fetal immune system and brain development. In this study, we hypothesize that dysregulation of the endogenous antioxidants in utero coupled with EtOH exposure exacerbates oxidative stress and inflammatory responses which likely attenuates fetal neurodevelopment. Briefly, ethanol (2.5 g/kg) was administered to pregnant C57B6 mice at gestational day 16-17. The dams were divided into six groups: control, EtOH, NAC, NAC+EtOH, BSO, and BSO+EtOH. One hour prior to ethanol treatment, BSO (Buthionine sulfoximine) and NAC (N-Acetyl cysteine) were administered to the respective dam groups, in order to modulate endogenous glutathione levels. Fetal brain tissues were analyzed for oxidative stress and antioxidant markers, inflammatory chemokines, cytokines and doublecortin gene expression. Protein expression was measured by ELISA and Western blots. Carbonylation of proteins was significantly higher in fetal brains versus maternal brains across all treatment groups and when compared to their controls. BSO treatment alone or with EtOH showed a significant up regulation of sod-1 (CuZn-SOD) and sod-2 (Mn-SOD), as compared with saline control. EtOH treatment alone significantly enhanced the expression of sod-1. BSO treatment alone increased CuZn- SOD and Mn-SOD protein expression significantly in comparison to control. However, combined exposure of BSO with EtOH resulted in significant enhanced expression of CuZn-SOD protein only. Levels of both proinflammatory and anti-inflammatory chemokines and cytokines expression are differentially altered by glutathione modulation. There was a distinct upregulation of gene expression for proinflammatory cytokines (II-1beta, IFN-g, IL-6), chemokines (CCL3, CCL4, CCL7, CCL9) in mice treated
with EtOH alone or in combination with groups where GSH synthesis was inhibited. Moreover, down regulation of inflammatory cytokines and chemokines expression was observed in NAC groups. In conclusion, our results suggest that antioxidant treatment orchestrates the suppression of inflammatory cytokines and chemokines expression in the developing brain leading to neuroprotection.

**Publication Type:** Journal: Conference Abstract

**Source:** EMBASE

**Title:** Ethanol and nicotine-derived nitrosamine ketone alter placental epigenome

**Citation:** Alcoholism: Clinical and Experimental Research, June 2015, vol./is. 39/(46A), 0145-6008 (June 2015)

**Author(s):** McGirr J., Tong M., De La Monte S., Gundogan F.

**Language:** English

**Abstract:** Background: In utero nutritional deficiencies and toxic substance exposures have long-lasting effects on later development and predisposition to diseases later in life. Epigenetic dysregulation is a key modulator of fetal programming linked to adult-onset diseases. In most studies designed to examine epigenetic effects on adverse outcomes of gestational alcohol and tobacco exposures, consequences of altered patterns of DNA methylation have been the focus of investigation. Methods: Herein, we utilized a different approach in which alterations in epigenetic regulator gene expression were measured with a targeted array to assess effects of in utero exposure to alcohol, tobacco-specific nicotine-derived nitrosamine ketone (NNK), or both in placenta. Pregnant Long Evans rats were fed with isocaloric liquid diets containing 0% or 8%(v/v) ethanol starting on gestation day (GD) 6. Subsets in both groups were intraperitoneally injected with saline or 2 mg/kg NNK on GD 10, 12, 14 and 16. cDNA generated with placentas harvested on GD19 were used to measure gene expression on an 83-target array (SA Bioscience-Qiagen). Results were normalized to Hprt1 measured on the same platform. The 30 genes with the largest fold differences from control were further studied using a custom PCR array.

Results: In utero exposures to ethanol and NNK upregulated mRNA expression of genes encoding histone-modifying enzymes, including histone deacetylases (Hdac4, Hdac5), histone acetyltransferases (Atf2, Esco1), histone methyltransferase (Setd7), and histone demethylase (Kdm1). In addition, both exposures upregulated expression of arginine methyltransferases (Prmt1, Prmt7) and Aura kinase (Aurka). Ethanol selectively increased expression of Dnmt3a, Hdac7, Setdb1, Dot1 l, and Prmt6, whereas NNK selectively downregulated Hdac5.

Conclusions: These findings illustrate that alcohol and tobacco-specific NNK, i.e. smoking, have complex effects on epigenetic regulators of gene expression in placenta and that the impact of dual exposures is greater than either one alone. Moreover, epigenetic modulation of gene expression is most likely not restricted to changes in methylation status, as the histone modifying gene expression is also altered. Finally, since arginine methylation is necessary for placental development, alcohol and tobacco exposures may produce their adverse effects in part by impairing expression of critical placental genes needed for fetal growth.

**Publication Type:** Journal: Conference Abstract

**Source:** EMBASE

**Title:** Distinct fetal alcohol-related growth trajectories as biomarkers for neurocognitive deficits

**Citation:** Alcoholism: Clinical and Experimental Research, June 2015, vol./is. 39/(43A), 0145-6008 (June 2015)

**Author(s):** Carter R.C., Jacobson J.L., Molteno C.D., Dodge N.C., Meintjes E.M., Jacobson S.W.

**Language:** English

**Abstract:** Although both fetal and long-term growth restriction in children with heavy prenatal alcohol exposure are well-documented, growth trajectory patterns over time across different levels of exposure have not been characterized. Furthermore, little is known regarding how such trajectories predict alcohol-related
neurobehavioral deficits. 85 heavy drinking Cape Coloured (mixed ancestry) pregnant women (> 2 drinks/day or >4 drinks/occasion) and 63 abstaining and light-drinking controls (<1 drink/day, no binges) were recruited at initiation of prenatal care in an urban antenatal clinic in Cape Town, South Africa and prospectively interviewed during pregnancy about alcohol, smoking, drug use, and demographics. Length/height, weight, and head circumference were measured at 6.5 and 12 months and at 5, 9, and 13 years. Analyses of each child's longitudinal growth data revealed 3 groups with distinct trajectory patterns: (i) children born small for gestational age (SGA) who remained at <10th% ile through adolescence (the most highly exposed group), (ii) SGA infants who exhibited catch-up growth in the 1st year of life (whose exposure levels were intermediate), and (iii) children without fetal or postnatal growth restriction, who generally had the lowest exposure levels. These trajectories were set by age 12 months for over 95% of the children studied. In addition, these trajectory patterns predicted severity of fetal alcohol-related neurocognitive impairment. Children with both fetal and long-term postnatal growth restriction exhibited the most severe deficits; those with fetal growth restriction and postnatal catch-up growth, more moderate effects; those without growth restriction, the weakest. It is important to note that these findings were not explained by FAS diagnosis or the higher levels of exposure among those with abnormal growth. These data suggest distinct roles for fetal and postnatal growth restriction in predicting severity of neurobehavioral deficits in FASD. FASD-related growth and neurobehavioral deficits may thus share common epigenetically mediated mechanisms, such as alterations in expression of imprinted genes, which have critical roles in growth and neurodevelopment.

**Publication Type:** Journal: Conference Abstract

**Source:** EMBASE

**Title:** Alcohol, methamphetamine, and marijuana exposure have distinct effects on human placental development

**Citation:** Alcoholism: Clinical and Experimental Research, June 2015, vol./is. 39/(42A), 0145-6008 (June 2015)

**Author(s):** Carter R.C., Wainwright H.C., Molteno C.D., Georgieff M., Dodge N.C., Meintjes E.M., Jacobson J.L., Jacobson S.W.

**Language:** English

**Abstract:** Animal studies have demonstrated adverse effects of heavy prenatal alcohol exposure on placental structure, but few prospective studies have examined these effects in humans. 53 heavy drinking Cape Coloured (mixed ancestry) pregnant women (>2 drinks/day or >4 drinks/occasion) and 33 controls (<1 drink/day, no binges) were recruited at their 1st antenatal clinic visit. Women were interviewed about alcohol, smoking, and drug use at 3 antenatal visits, and antenatal medical records were reviewed. A senior pathologist (HW) with placenta expertise, blinded to exposure status, performed full pathology examinations on each placenta using a standardized protocol. Inmultivariate regression models, effects of prenatal exposure were examined on placenta size, structure, and presence of infections andmeconium. Prenatal alcohol, methamphetamine ("tik"), and smoking were not associated withmaternal hypertension, preeclampsia, gestational diabetes, or syphilis, whereas marijuana use was related to a higher rate of preeclampsia. By contrast to the other exposures, only alcohol use was related to decreased placenta weight. Methamphetamine was associated with a larger placenta surface area, larger placenta weight, and a larger placenta weight:birthweight ratio, indicating that fetal growth was not proportionate to placenta size. Marijuana was associated with larger placenta weight. Pathology examinations showed that alcohol use was associated with increased risk of hemorrhage and basement membrane mineralization. Prenatal alcohol, drug, and cigarette use were not associated with chorioamnionitis. Alcohol use was associated with increased risk of villitis, and marijuana with increased risk of both villitis and deciduitis. Marijuana was also associated with increased risk of chorangiitis, a fetal response to placental hypoxia. Alcohol and smoking decreased the risk of intrauterine passing of meconium, a sign of acute fetal stress and/or hypoxia, whilemethamphetamine increased the risk. These findings demonstrate that alcohol, methamphetamine, and marijuana are associated with distinct patterns of pathology, suggesting different mechanisms underlying effects of these exposures on placental development. Two alcohol-related findings, decreased placenta size and increased basement membrane mineralization, are associated with fetal growth restriction and may thus partly mediate the effects of alcohol on fetal growth.

**Publication Type:** Journal: Conference Abstract
Title: Ultrasound diagnosis of persistent right umbilical vein: The struggle to determine significance remains

Citation: Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S168-S169), 0301-5629 (April 2015)

Author(s): Tudela F., Connolly K., Rekawek P., Bianco A., Goldman J.C.

Language: English

Abstract: Objectives: Retrospective study of incidence and outcomes of prenatally diagnosed persistent right umbilical vein (PRUV). Methods: Between 1/2009 and 9/2014, a detailed sonographic examination was performed on 14,360 patients with mixed risk for fetal anomalies at a single University Medical Center. Persistent right umbilical veins were recorded. All patients with persistent right umbilical vein were offered fetal echo. If an additional anomaly was seen, genetic counseling was offered. All neonates were evaluated by a pediatrician post delivery. Results: Persistent right umbilical vein was detected in 24/14,360 patients. Twenty five percent (6/24) had additional significant malformations. Eighty three percent (5/6) were detected antenatally, and 67% (4/6) were cardiac anomalies. Eleven percent (2/18) of patients with isolated persistent right umbilical vein had fetal growth restriction (estimated fetal weight less than the tenth percentile for gestational age) on follow-up ultrasound. No other adverse perinatal outcomes found. Conclusions: The overall incidence of persistent right umbilical vein was 1/598. However, outcomes were generally favorable. Nonetheless, fetal echocardiogram is suggested for all cases of PRUV due to increased risk of cardiac malformations, and fetal growth assessment is suggested in the third trimester due to increased risk of fetal growth restriction. (Table Presented).

Publication Type: Journal: Conference Abstract

Source: EMBASE
The prenatal presentation of tetrasomy 9P

Authors: Lazebnik N., Cohen L.

Language: English

Abstract: Objectives: We report of a recently diagnosed case as well as the prenatal sonographic and laboratory presentation of cases with mosaic and non-mosaic tetrasomy 9p. Methods: We present the prenatal sonographic and laboratory findings of a recently diagnosed fetus with tetrasomy 9p and review the previously reported prenatal cases. The array comparative genomic hybridization (aCGH) study, the first trimester analytes and the abnormal sonographic findings are discussed. Results: Isochromosomes 9p have 3 subtypes: isochromosome with a breakpoint at p10 with no portion of the long arm, isochromosome with a small amount of the heterochromic region of 9q extending to 9q12 or 9q13, and isochromosome with a large portion of the long arm extending to 9q21 or q22. Array comparative genomic hybridization (aCGH) is the best tool to differentiate between the various subtypes. The sonographic abnormalities associated with tetrasomy 9p are: IUGR, oligohydramnios, polyhydramnios, ventriculomegaly, agenesis of the corpus callosum, hypoplastic/absent vermis, cleft lip/palate, vertebral anomalies, cardiac anomaly, urogenital anomaly, and limb malformation, absent nasal bone, congenital diaphragmatic hernia, and thickened nuchal translucency. In the case prenataly diagnosed by us the first trimester serum analytes, free beta hCG and PAPP-A were unremarkable suggesting that both are unlikely to be associated with risk for tetrasomy 9p. Conclusions: Tetrasomy of the short arm of chromosome 9 constitutes a clinically recognizable chromosomal syndrome. Multiple sonographically detectable fetal abnormalities are likely to be present. However, neither ultrasound study alone nor the first trimester screen for the common aneuploidies can suggest the correct diagnosis. In addition prenatal diagnosis by CVS and or amniocentesis might not detect all cases of Tetrasomy 9p. Thus, chromosome study or aCGH of more than single tissue is therefore mandatory in order to establish the correct diagnosis as well as differentiating between cases with mosaic and non-mosaic tetrasomy 9p.

Fetal ultrasound and magnetic resonance imaging: Collision course or superhighway

Authors: Lee W., Cassady C.

Language: English

Abstract: The objectives of this session are to: (1) evaluate challenging obstetric cases in which magnetic resonance imaging (MRI) and prenatal ultrasound are used in case diagnoses; (2) discuss a stepwise approach in evaluation of challenging fetal cases; (3) discuss imaging clues and pitfalls in common fetal abnormalities and when to refer a patient for fetal MRI; and (4) describe pros and cons of the use of MRI as an adjunct to ultrasound in managing difficult fetal cases.
Title: Is the brain-sparing effect described in fetuses with congenital heart disease evident in the first trimester?

Citation: Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S52), 0301-5629 (April 2015)

Author(s): Abu-Rustum R., Ziade M.F., Kesrouani A., Abu-Rustum S., Daou L.

Language: English

Abstract: Objectives: The brain sparing effect reported in fetuses with congenital heart disease (CHD) describes compensatory cerebral vasodilatation with redistribution of cerebral blood flow in the face of compromised fetal oxygenation. This protective mechanism may be insufficient to maintain normal brain growth and development. Fetuses with hypoplastic left heart (HLH) and transposition of the great arteries (TGA) have been noted to have a smaller head. As such the aim of this study was to determine whether the brain sparing effect, as reflected by the fetal BPD, is apparent in the first trimester. Methods: Retrospective study on 820 controls and 32 fetuses known to have CHD who had undergone first trimester screening for aneuploidy and structural fetal abnormalities at 2 centers in Lebanon. All scans were carried out transabdominally by 2 experienced sonologists with the fetal NT, CRL and BPD measured. Maternal age, BMI, gravidity and parity were obtained. The presence of extracardiac anomalies and aneuploidy in fetuses with CHD was recorded. Live born fetuses were evaluated by a pediatric cardiologist and the diagnosis confirmed. The BPD as a function of the fetal CRL of fetuses with CHD was plotted against the established normogram in our population with the fetuses having CHD divided into 3 groups: the group with HLH, the fetus with CoA and finally fetuses with other cardiac anomalies. Results: A total of 32 fetuses were included in the analysis: 9/32 (28.1%) with HLH, 2/32 (6.3%) with CoA and 21/32 (65.6%) with AV canal, HRH, VSD and other cardiac abnormalities. Karyotype was available on 6/32 (18.8%) fetuses and of those, 5/6 (83.3%) had trisomy 21 and 1/6 (16.6%) had an unbalanced translocation. Extracardiac abnormalities were present in 4/32 (12.5%). Of the 32 fetuses, 13 were live born (40.6%). Termination of pregnancy was carried out on 14/32 (43.8%). There was spontaneous in utero demise in 2/32 (6.3%) and 3/32 (9.4%) were lost to follow up. The fetal BPD as a function of the CRL revealed no difference between fetuses with CHD and normal fetuses. Conclusions: The brain sparing effect, exemplified by alterations in the fetal BPD, is not apparent in the first trimester.

Publication Type: Journal: Conference Abstract

Source: EMBASE
significant difference in both the CRL and BPD as follows: mean CRL of 68.3 vs 74.9 mm \( (p < 0.0001) \) and mean BPD of 22.5 vs 24.4 mm \( (P < 0.0001) \) respectively. Our data revealed that the BPD increases with CRL according to the relationship: \( \text{TCD} = 0.181 \times \text{CRL} - 2.8318 \) with an \( R^2 \) of 0.6505 where our TCD tended to be larger than the TCD established by Eagle et al. Conclusions: Our study attests to the low transabdominal cerebellar visualization rate of only 13.7% at 11-14 weeks. The fetal CRL and BPD are the most influential factors facilitating visualization. As such, the second trimester remains the ideal time for proper evaluation of the fetal cerebellum.

**Publication Type:** Journal: Conference Abstract

**Source:** EMBASE

---

**Title:** Fetal blood flow measurement by angle-independent 3D sonography in high-risk patients

**Citation:** Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S41), 0301-5629 (April 2015)

**Author(s):** Pinter S., Kripfgans O., Treadwell M., Kneitel A., Fowlkes J.B., Rubin J.

**Language:** English

**Abstract:** Objectives: Identify fetal blood volume flow in a high-risk maternal patient population using a 3D sonographic technique that is independent of angle, flow profile, and vessel geometry. Methods: Volume flow measurements were performed using a GELOGIQE9 ultrasound system and RAB6-D transducer (2.0-8.0 MHz). The proposed 3D flow measurement technique overcomes limitations of traditional pulsed-wave Doppler methods. Volume flow is computed through a user-specified c-surface (lateral-elevational plane) by integrating Doppler-measured velocity vectors. Partial volume effects are corrected using power Doppler. The study consisted of 16 singleton fetuses (gestation range: 26-37 weeks) of patients admitted to the University of Michigan Medical Center High Risk Obstetrics Clinic. Subjects were being observed for medical conditions such as hypertension, pre-eclampsia, obesity, gestational diabetes, advanced maternal age, and for detected fetal anomalies such as fetal ascites and bronchopulmonary sequestration. For each subject, blood flow was measured at three different locations along the umbilical cord. On average, 28 +/- 4 (mean +/- SD) volumes were sampled at each location to determine overall flow. The median of the three flow measurements was plotted as a function of gestational age. Linear regression slope and 95% confidence intervals (CI) were compared to normal and compromised populations reported in the literature (Tchirikov et al., Ultrasound Obstet Gynecol, 20:580-5, 2002). Results: Linear regression slope for flow measurements was 5.78 mL/min/week (CI: 1.01-10.6), which was significantly different from the regression slope of a normal population, reported as 17.0 mL/min/week (CI: 15.0-19.0) in the literature. All flow measurements from this study were positioned below the normal population's regression line. Conclusions: Preliminary results suggest that fetal blood flow is adversely affected by multiple maternal factors. Measured fetal blood flow was significantly lower in this study's high-risk population compared to normal fetuses. Therefore, fetal blood flow measurement, using the proposed 3D sonographic technique, may provide a quantitative and robust parameter to monitor fetal well-being and assess fetal therapies.

**Publication Type:** Journal: Conference Abstract

**Source:** EMBASE

---

**Title:** Prenatal evaluation of spinal dysraphism with postnatal correlation

**Citation:** Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S26), 0301-5629 (April 2015)

**Author(s):** Bulas D.

**Language:** English
Abstract: Spinal dysraphism, or neural tube defects (NTD) encompass a heterogeneous group of congenital spinal anomalies that result from the defective closure of the neural tube early in gestation with anomalous development of the caudal cell mass. The incidence ranges between 1-2 per 1000 births. Advances in US including 3D imaging have improved the diagnosis of spinal dysraphism and caudal spinal anomalies. Prenatal US can identify spinal abnormalities, associated CNS and non-CNS anomalies, as well as assess fetal growth. Fetal MRI is a complementary tool that can further elucidate spine abnormalities as well as associated CNS and non-CNS anomalies. The term dysraphism is reserved for defects of primary neurulation which involve tubulation of the neural plate, separation from the ectodermal elements, and disjunction of superficial from neural ectoderm. A clinical-neuroradiological classification system by Tortori-Donati et al helps organize the imaging features of the various dysraphisms dividing spinal dysraphism into open or closed forms. An open neural tube defect is present when neural elements and/or membrane are exposed via a boney defect and lack skin covering. The most common forms include myelomeningocele and myeloschesis which are commonly associated with the Chiari II malformation. A closed neural tube defect is present when a vertebral defect is covered by skin. These are not commonly associated with the Chiari II malformation but can be associated with a subcutaneous mass/cyst, hemangioma, or overlying hairy patch. With the advent of fetal therapy including surgery for myelomeningoceles, accurate prenatal diagnosis of open and closed spinal dysraphism becomes critical in appropriate counseling and perinatal management.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Normal growth; normal doppler

Citation: Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S9), 0301-5629 (April 2015)

Author(s): Abramowicz J.

Language: English

Abstract: Fetal growth from a one-cell zygote to a multimillion cells organism is a complex process beyond imagination during which numerous abnormal events may occur, leading to structural anomalies or abnormal growth/development. This chain of events depends, at various times, on cell hypertrophy and hyperplasia and is under the influence of numerous factors, both intrinsic and extrinsic to the fetus. Verifying normal fetal growth is a major concern for all involved in prenatal care. On average, a normal singleton fetus grows approximately 5 g/ day at 14 to 15 weeks of gestation, 10 g/day around 20 weeks and 30 to 35 g/day at 32 to 34 weeks (minimum desired is 20g/day), after which the growth rate decreases. Ultrasound is the main tool to evaluate fetal growth, both from a structural and functional standpoint with real-time B-mode grey-scale measurements of various fetal organs and Doppler velocimetry. Single organ measurement (abdominal circumference, AC) or various combinations of organs such as head circumference (HC), AC, femur length can be used to assess growth, both in two-and three-dimensional ultrasound. The most common artery evaluated by Doppler is the umbilical artery. A rule of thumb is that normal S/D ratio in the umbilical artery is 4 at 20 weeks, 3 at 30 weeks and 2 at 40 weeks. What is the best method of surveillance of fetal well-being when growth is disturbed, to obtain an optimal outcome both for fetus and mother, remains somewhat uncertain.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Fetal growth and obstetric doppler ultrasound

Citation: Ultrasound in Medicine and Biology, April 2015, vol./is. 41/4 SUPPL. 1(S9), 0301-5629 (April 2015)

Author(s): Abramowicz J.

Language: English
Abstract: The objective of this session is to discuss the diagnosis and management of fetal growth abnormalities and principles and applications of obstetric Doppler ultrasound.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Assessment of fetal growth by customized growth charts

Citation: Annals of Nutrition and Metabolism, May 2014, vol./is. 65/2-3(149-155), 0250-6807;1421-9697 (22 May 2014)

Author(s): Gaillard R., Jaddoe V.W.V.

Language: English

Abstract: Customized fetal growth charts take account of the individual variation in the fetal growth potential based on non-pathological maternal and fetal characteristics. Application of these customized weight charts might improve the distinction between pathological growth-restricted fetuses and fetuses that are small but have reached their growth potential. Current models for customized growth standards have been based on birth weight and fetal growth data. Variables used for customization are gestational age, maternal age, parity, ethnicity, height, weight and fetal sex. Thus far, it remains controversial whether these maternal and fetal characteristics used for customization are strong enough predictors for fetal growth on an individual level and are truly physiological characteristics. The currently available customized growth charts might be of benefit for use in epidemiological studies and clinical practice. Further studies are needed to validate these customized growth models and to examine whether and to what extent they improve identification of children that are at risk for morbidity in the perinatal period and later in life.

Publication Type: Journal: Conference Paper

Source: EMBASE

Title: Placental findings of IUGR and non-IUGR

Citation: Turkish Journal of Pediatrics, 2014, vol./is. 56/4(368-373), 0041-4301 (2014)

Author(s): Iskender-Mazman D., Akcoren Z., Yigit S., Kale G., Korkmaz A., Yurdakok M., Durukan T.

Language: English

Abstract: This study aims to define the placental findings in intrauterine growth restriction (IUGR). The study group consisted of 40 neonates without IUGR and 24 neonates with IUGR, including their placentas. The cases were separated into three groups according to gestational age. Group A (n=21): 37 < weeks, Group B (n=27): 32 < - <37 weeks, Group C (n=16): < 32 weeks. Each group had two subgroups, IUGR and non-IUGR. The placentas from the non-IUGR subgroup were heavier than the IUGR subgroup placentas in the term group (p<0.05). Infarct (over 5%), increased syncytial knots and histiocytic intervillitis were more common in the IUGR cases (p<0.05). This study shows that chronic patterns of injury are significantly increased in placentas from pregnancies complicated by IUGR. If the injury in the placenta is acute or mild, fetal adaptation can compensate and prevent fetal growth restriction.

Publication Type: Journal: Article

Source: EMBASE

Title: A randomized double blind comparison of atosiban in patients undergoing IVF treatment

Citation: Human Reproduction, June 2014, vol./is. 29/12(2687-2694), 0268-1161;1460-2350 (26 Jun 2014)
Author(s): Ng E.H.Y., Li R.H.W., Chen L., Lan V.T.N., Tuong H.M., Quan S.

Language: English

Abstract: STUDY QUESTION Does atosiban (oxytocin/vasopressin V1A receptor antagonist), given around embryo transfer improve the live birth rate of women undergoing IVF treatment? SUMMARY ANSWER The use of atosiban around embryo transfer did not improve the live birth rate in a general population of IVF patients. WHAT IS KNOWN ALREADY Uterine contractions in IVF cycles were significantly increased following ovarian stimulation and women with frequent uterine contractions had a lower pregnancy rates. A few observational studies suggested that the use of atosiban around embryo transfer resulted in higher pregnancy rates in women with repeated implantation failure (RIF). A non-randomized trial of IVF patients also reported higher implantation and clinical pregnancy rates after the use of atosiban. STUDY DESIGN, SIZE, DURATION This multi-centre randomized double blind study recruited 800 general subfertile women undergoing IVF treatment between November 2011 and March 2013. Subjects were randomized into the atosiban (n = 400) and placebo (n = 400) groups according to a computer-generated randomization list. PARTICIPANTS/MATERIALS, SETTING, METHODS Subjects were recruited and randomized in the three IVF units in Guangzhou, Hong Kong and Ho Chi Minh City. Women in the atosiban group received i.v. atosiban 30 min before embryo transfer with a bolus dose of 6.75 mg, and the infusion was continued at 18 mg/h for ~1 h. The dose of atosiban was then reduced to 6 mg/h continued for another 2 h. Those in the placebo group received i.v. normal saline only. The primary outcome measure was the live birth rate. MAIN RESULTS AND THE ROLE OF CHANCE There was no significant difference in the live birth rate between the atosiban and placebo groups (39.8 versus 38.0%, P = 0.612, rate ratio 1.051, 95% confidence interval: 0.884-1.251). No significant differences were found between the two groups in the positive pregnancy test, clinical pregnancy, ongoing pregnancy, miscarriage, multiple pregnancy, ectopic pregnancy rates and implantation rate per woman. Similar results were found between the groups at different IVF centres, with a repeated cycle, presence of uterine fibroids or a serum estradiol level on the day of hCG above the median level. LIMITATIONS, REASONS FOR CAUTION Limitations include the transfer of early cleavage embryos, no measurement of uterine contractions, no documentation of adenomyosis and incomplete tracking of congenital abnormalities in newborns. WIDER IMPLICATIONS OF THE FINDINGS This randomized double blind study demonstrated that the use of atosiban given around embryo transfer did not improve the live birth rate in a general population of IVF patients; therefore atosiban should be given only in the context of clinical research.

Publication Type: Journal: Article

Source: EMBASE

Full Text: Available from Highwire Press in Human Reproduction

Title: The influence of IVF/ICSI treatment on human embryonic growth trajectories

Citation: Human Reproduction, June 2014, vol./is. 29/12(2628-2636), 0268-1161;1460-2350 (26 Jun 2014)


Language: English

Abstract: STUDY QUESTION Is in vitro fertilization treatment with or without intracytoplasmatic sperm injection (IVF/ICSI) associated with changes in first and second trimester embryonic and fetal growth trajectories and birthweight in singleton pregnancies? SUMMARY ANSWER Embryonic and fetal growth trajectories and birthweight are not significantly different between pregnancies conceived with IVF/ICSI treatment and spontaneously conceived pregnancies with reliable pregnancy dating. WHAT IS KNOWN ALREADY IVF/ICSI treatment has been associated with increased risks of preterm birth, fetal growth restriction and low birthweight. Decreased first-trimester crown-rump length (CRL) in the general population has been inversely associated with the same adverse pregnancy outcomes. STUDY DESIGN, SIZE, DURATION In a prospective periconception birth cohort study conducted in a tertiary centre, 146 singleton pregnancies with reliable pregnancy dating and nonmalformed live borns were investigated, comprised of 88 spontaneous and 58 IVF/ICSI pregnancies. PARTICIPANTS/MATERIALS, SETTING, METHODS Serial 3D
ultrasound scans were performed from 6 to 12 weeks of gestation. As estimates of embryonic growth, CRL and embryonic volume (EV) were measured using the I-Space virtual reality system. General characteristics were obtained from self-administered questionnaires at enrolment. Fetal growth parameters at 20 weeks and birthweight were obtained from medical records. To assess associations between IVF/ICSI and embryonic growth trajectories, estimated fetal weight and birthweight, stepwise linear mixed model analyses and linear regression analyses were performed using square root transformed CRL and fourth root transformed EV. MAIN RESULTS AND THE ROLE OF CHANCE In 146 pregnancies, 934 ultrasound scans were performed of which 849 (90.9%) CRLs and 549 (58.8%) EVs could be measured. Embryonic growth trajectories were comparable between IVF/ICSI pregnancies and spontaneously conceived pregnancies (CRL: beta<sub>IVF/ICSI</sub> = 0.10 mm; P = 0.10; EV: beta<sub>IVF/ICSI</sub> = 0.03<sup>4</sup> cm P = 0.13). Estimated fetal weight and birthweight were also comparable between both groups (beta<sub>IVF/ICSI</sub> = 6 g; P = 0.36 and beta<sub>IVF/ICSI</sub> = 80 g; P = 0.24, respectively). LIMITATIONS, REASONS FOR CAUTION Variations in embryonic growth trajectories of spontaneously conceived pregnancies with reliable pregnancy dating may partially be a result of less precise pregnancy dating and differences in endometrium receptivity compared with IVF/ICSI pregnancies. WIDER IMPLICATIONS OF THE FINDINGS The absence of a significant difference in embryonic and fetal growth trajectories suggests safety of IVF/ICSI treatment with regard to early embryonic growth. However, further research is warranted to ascertain the influence of IVF/ICSI treatments in a larger study population, and to estimate the impact of the underlying causes of the subfertility and other periconceptional exposures on human embryonic and fetal growth trajectories. FUNDING STATEMENT This study was supported by the Department of Obstetrics and Gynaecology of the Erasmus MC, University Medical Centre. CONFLICT OF INTEREST No competing interests are declared.
strengthens the results and provides sufficient power to the statistical analysis. LIMITATIONS, REASONS FOR CAUTION During the IVF procedure, DET induces the expression of more than one paternal HLA-C and the oocyte-derived maternal HLA-C in the oocyte-donation cycles probably behaves like paternal HLA-C. Because this was a retrospective study, we did not have data about the HLA-C of the parent, donor, chorionic villi, or infant, which is a limitation because we cannot show differences according to paternal or oocyte donor HLA-C1 and HLA-C2. WIDER IMPLICATIONS OF THE FINDINGS These new insights could have an impact on the selection of SET in patients with RM or RIF, and a KIR AA haplotype. Also, it may help in oocyte and/or sperm donor selection by HLA-C in patients with RM or RIF and a KIR AA haplotype.

Publication Type: Journal: Article
Source: EMBASE

Full Text: Available from *Highwire Press* in *Human Reproduction*

**Title:** Placental fatty acid transfer: A key factor in fetal growth

**Citation:** Annals of Nutrition and Metabolism, May 2014, vol./is. 64/3-4(247-253), 0250-6807;1421-9697 (22 May 2014)

**Author(s):** Larque E., Pagan A., Prieto M.T., Blanco J.E., Gil-Sanchez A., Zornoza-Moreno M., Ruiz-Palacios M., Gazquez A., Demmelmaier H., Parrilla J.J., Koletzko B.

**Language:** English

**Abstract:** The functionality of the placenta may affect neonatal adiposity and fetal levels of key nutrients such as long-chain polyunsaturated fatty acids. Fetal macrosomia and its complications may occur even in adequately controlled gestational diabetic (GDM) mothers, suggesting that maternal glycemia is not the only determinant of fetal glycemic status and wellbeing. We studied in vivo the placental transfer of fatty acids (FA) labeled with stable isotopes administered to 11 control and 9 GDM pregnant women (6 treated with insulin). Subjects received orally $^{13}$C-palmitic, $^{13}$C-oleic, and $^{13}$C-linoleic acids and $^{13}$C-docosahexaenoic acid ($^{13}$C-DHA) 12 h before an elective caesarean section. FA were quantified by gas chromatography and $^{13}$C enrichments by gas chromatography-isotope ratio mass spectrometry. The $^{13}$C-FA concentration was higher in total lipids of maternal plasma in GDM patients versus controls, except for $^{13}$C-DHA. Moreover, $^{13}$C-DHA showed a lower placenta/maternal plasma ratio in GDM patients versus controls and a significantly lower cord/maternal plasma ratio. Other FA ratios studied were not different between GDM and controls. A disturbed $^{13}$C-DHA placental uptake occurred in GDM patients treated with diet or insulin, while the latter also had lower $^{13}$C-DHA levels in the venous cord. The tracer study pointed towards an impaired placental DHA uptake as a critical step, while the transfer of other $^{13}$C-FAs was less affected. Patients with GDM treated with insulin could also have a greater fetal fat storage, which may have contributed to the reduced $^{13}$C-DHA in the venous cord observed. The DHA transfer to the fetus was reduced in GDM pregnancies compared to controls. This might have an influence on fetal neurodevelopment and long-term consequences for the child.

Publication Type: Journal: Article
Source: EMBASE

**Title:** High-fidelity simulation to assess teamwork in obstetric crises

**Citation:** Canadian Journal of Anesthesia, June 2014, vol./is. 61/(S148), 0832-610X (June 2014)

**Author(s):** Balki M., Hoppe D.W., Monks D., Windrim R., Sharples L., Cooke M.E.

**Language:** English
Abstract: Introduction: A systematic review of obstetric training in acute emergencies showed a lack of evaluated training programs. Simulation has a significant role in education and training and a potential to improve patient safety by decreasing the rate of medical errors and deaths due to preventable adverse events. Simulation has now been widely adopted in medicine, with enthusiasts referring to simulation-based medical education as an "ethical imperative". The objective of this study is to develop a validated and reliable interdisciplinary teamwork assessment scale (ITAS) to assess multidisciplinary team dynamics in simulated obstetric crisis's Methods: This prospective, observational cohort study was performed after REB approval and written informed consent from the study participants. Delphi technique was used to establish the face and content validity of the newly designed ITAS. Two simulation scenarios of pre-eclampsia and PPH were created. Teams consisting of fellows and residents from obstetrics and anesthesia, anesthesia assistants and registered perinatal nurses participated in the simulation sessions using a high-fidelity simulator. A checklist of expected actions specific to the scenarios and new ITAS were used as tools to facilitate debriefing. The video recordings will be sent to 2 renowned anesthesia and obstetric experts for rating ITAS scores of the teams. The primary outcome is to establish the validity and reliability of a newly developed ITAS. Secondary outcome measures include identifying areas of poor and good clinical knowledge and skills in preeclampsia and PPH management. We calculated a sample size of 52 scenarios based on determining the validity of the scale (differentiating between poor and well performed teamwork) with a large effect size, as well as establishing reliability between two reviewers with an intraclass correlation coefficient of 0.8 with a confidence interval of +/- 0.10. Results: So far 27 multidisciplinary teams participated in 13 preeclampsia, 14 PPH simulation sessions. We are still conducting simulation sessions and will present completed results at the CAS meeting. Discussion: Multidisciplinary training and assessment are essential to improve clinical practice, so that patient safety can be improved by mitigating avoidable errors. This will help us identify deficiencies in the system and commonly performed errors. Practice guidelines based on our study will improve clinical practice with much needed consistency, and will have a potential impact on patient safety.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Library Opening Times

Staffed times 8.30 am—16.30 pm
Monday to Friday

Swipe Access 7.00 am—23.00pm
7 days a week

Level 5,
Education Centre
University Hospitals Bristol

Contact your outreach librarian
Helen Pullen
library@UHBristol.nhs.uk