Obstetrics
Current Awareness Newsletter
February 2016
**Outreach**

Your Outreach Librarian can help facilitate evidence-based practice for all PICU 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.

**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.

**Critical Appraisal Training**

We also offer one-to-one or small group training in literature searching, accessing electronic journals, and critical appraisal/Statistics. These are essential courses that teach how to interpret clinical papers.

For more information, email: katie.barnard@uhbristol.nhs.uk

**Books**

Books can be searched for using SWIMS our online catalogue at www.swims.nhs.uk. Books and journals that are not available on site or electronically may be requested from other locations. Please email requests to: library@uhbristol.nhs.uk
Contents

1: Tables of Contents from February’s Gynaecology journals

2: New NICE Guidance

3: Latest relevant Systematic Reviews from the Cochrane Library

4: NHS Behind the Headlines

5: New activity in Uptodate

6: Current Awareness database articles
Tables of Contents from relevant journals

If you require full articles please email: library@uhbristol.nhs.uk

Click here Obstetrics and Gynaecology

British Journal of Obstetrics and Gynaecology

American Journal of Obstetrics and Gynecology

New Nice Guidance

<table>
<thead>
<tr>
<th>Quality Standard</th>
<th>Diabetes in pregnancy</th>
</tr>
</thead>
</table>

Latest relevant Systematic Reviews from the Cochrane Library

Bed rest with and without hospitalisation in multiple pregnancy for improving outcomes

Katharina da Silva Lopes, Erika Ota, Shinji Tanigaki, Rintaro Mori
Online Publication Date: January 2016

Prenatal administration of progestogens for preventing preterm birth in women with a multiple pregnancy

Jodie M Dodd, Rosalie M Grivell, Cecelia M O'Brien, Therese Dowswell, Andrea R Deussen
Online Publication Date: January 2016
Serum test for prediction of preeclampsia (January 2016)

The ratio of soluble fms–like tyrosine kinase 1 (sFlt-1) to placental growth factor (PIGF) is increased in the serum of women with preeclampsia; however, the clinical application for this observation remains unclear. A prospective international observational study (PROGNOSIS) attempted to derive and validate a serum sFlt-1:PIGF ratio that would predict...
the absence or presence of preeclampsia in women who had signs suggestive of the disease, but who did not meet standard criteria for preeclampsia [1]. An sFlt-1:PIGF ratio cutoff of 38 using a specific automated commercial assay had a negative predictive value (no preeclampsia in the next seven days) of 99.3 percent. Few women in the cohort ultimately developed preeclampsia, resulting in a positive predictive value of only 36.7 percent for preeclampsia diagnosis in the next four weeks. Further study is warranted, including determining whether the cut-off varies among laboratories and patient populations, the best interval for repeat testing, and how this information affects clinical decisions, outcomes and costs. (See "Preeclampsia: Clinical features and diagnosis", section on 'Measurement of angiogenic factors'.)

Conception after miscarriage (January 2016)

Although data support the benefits of delaying conception after a live birth, it is not clear if such a delay benefits women after miscarriage. In a study of nearly 1100 women who had a miscarriage at less than 20 weeks of gestation, women who attempted conception within 0 to 3 months of the loss were more likely to achieve a live birth, had a faster time to pregnancy that resulted in a live birth, and had similar pregnancy complications compared with women who waited greater than 3 months to try to conceive [2]. We advise women who have completed a miscarriage that they may attempt conception as soon as they are psychologically ready. (See "Spontaneous abortion: Management", section on 'Interval to conception'.)

Zika virus infection in the Americas (January 2016)

Zika virus is a member of the flavivirus family that is spread via mosquito bites. Outbreaks have occurred in Africa, Southeast Asia, and the Pacific Islands; more recently Zika virus has spread to the Americas. More than 20 countries in Latin America have confirmed circulation; cases of Zika virus infection in the United States have occurred among returning travelers. The illness is usually mild; typical symptoms include fever, rash, joint pain, and conjunctivitis. However, Zika virus infection has also been associated with perinatal complications (congenital microcephaly and fetal losses) and Guillain-Barre syndrome [3]. In 2015, more than 3500 cases of microcephaly were reported among newborns in Brazil; this represents a 20-fold increase in the number of cases compared with years prior to the circulation of Zika virus [4]. In January 2016, the United States and European Centers for Disease Control advised that pregnant women consider postponing travel to any area where
Zika virus transmission is ongoing and also advised that healthcare providers ask all pregnant women about recent travel, with follow-up testing (ultrasound, laboratory testing, or both) depending on clinical circumstances [5]. (See "Zika virus infection", section on 'Geographic distribution'.)

**Membrane sweeping in GBS-colonized women (January 2016)**

Some practitioners choose not to sweep/strip fetal membranes to induce labor in group B Streptococcus (GBS)-colonized women because of theoretical concerns of bacterial seeding during the procedure. The first prospective study to compare maternal and neonatal outcomes following membrane sweeping among GBS-positive (n = 135), GBS-negative (n = 361), and GBS-unknown (n = 46) women found no significant difference in adverse maternal or neonatal outcomes between groups [6]. There was no difference in the rate of possible early-onset neonatal infection between the GBS-positive and GBS-negative groups and no cases of neonatal sepsis in the entire cohort. Most GBS-positive women received intrapartum GBS antibiotic prophylaxis. Although these results are reassuring about the safety of membrane sweeping in GBS-positive women, the study did not have adequate power to detect modest differences in outcome and is subject to the limitations of an observational design. We believe GBS colonization is not a contraindication to membrane sweeping as there is no direct evidence of harm, but given the paucity of safety data for the procedure in known GBS carriers, we weigh the potential risks and benefits before performing the procedure in known carriers. (See "Induction of labor", section on 'Membrane stripping'.)

**Miscarriage risk with oral fluconazole (January 2016)**

The pregnancy effects of oral azoles for treatment of vulvovaginal candidiasis is unclear. Studies have reported an increased risk of birth defects after exposure to high-dose azole therapy (400 to 800 mg/day), but not for the low dose therapy used to treat vulvovaginal infections (eg, fluconazole 150 mg). Prior studies have not reported an increased risk of miscarriage with oral fluconazole. However, a recent cohort study of over 3300 women who received 150 to 300 mg of oral fluconazole between 7 and 22 weeks of pregnancy reported an approximately 50 percent increased risk of miscarriage in exposed women compared with either unexposed women or with women treated with vaginal azole therapy [7]. We continue to offer topical azole treatment during pregnancy and prefer to avoid oral therapy.
Neonatal and maternal outcomes for planned out-of-hospital birth (January 2016)

In the United States (US), the safety of non-hospital births is unclear. Several studies have reported that women who deliver at home or at a birth center have equal or improved neonatal and maternal outcomes compared with those who deliver in a hospital; however, outcomes of women transferred to the hospital intrapartum or postpartum because of complications were often included with the hospital delivery group, which could have impacted results. In a US study that analyzed birth outcomes by planned birth location rather than actual delivery site, approximately 16 percent of women planning out-of-hospital births (combined home births and freestanding birth centers) required hospital transfer and their infants had higher rates of perinatal death, neonatal seizures, and neonatal ventilator support compared with infants of planned in-hospital births [8]. Mothers who planned out-of-hospital births but delivered in a hospital had fewer obstetric interventions and a higher rate of blood transfusion. For women in the United States, this study provides a more accurate understanding of the outcomes associated with planned out-of-hospital versus planned in-hospital birth. (See "Planned home birth", section on 'Retrospective studies'.)
Literature Search

Search History:
1. Medline; ("Intrapartum care" OR pre-eclampsia OR "preterm labour" OR "multiple pregnancy" OR "maternal medicine" OR "fetal abnormal*" OR "fetal growth").ti,ab; 23576 results.
4. Medline; 2 [Limit to: Last Year and Publication Year Current-2016 and (Language English) and Latest Update and English Language]; 100 results.

Title: Reducing stillbirths in low-income countries.

Citation: Acta obstetricia et gynecologica Scandinavica, Feb 2016, vol. 95, no. 2, p. 135-143 (February 2016)

Author(s): Goldenberg, Robert L, Saleem, Sarah, Pasha, Omrana, Harrison, Margo S, McClure, Elizabeth M

Abstract: Worldwide, 98% of stillbirths occur in low-income countries (LIC), where stillbirth rates are ten-fold higher than in high-income countries (HIC). Although most HIC stillbirths occur prenatally, in LIC most stillbirths occur at term and during labor/delivery. Conditions causing stillbirths include those of maternal origin (obstructed labor, trauma, antepartum hemorrhage, preeclampsia/eclampsia, infection, diabetes, other maternal diseases), and fetal origin (fetal growth restriction, fetal distress, cord prolapse, multiples, malpresentations, congenital anomalies). In LIC, aside from infectious origins, most stillbirths are caused by fetal asphyxia. Stillbirth prevention requires recognition of maternal conditions, and care in a facility where fetal monitoring and expeditious delivery are possible, usually by cesarean section (CS). Of major causes, only syphilis and malaria can be managed prenatally. Targeting single conditions or interventions is unlikely to substantially reduce stillbirth. To reduce stillbirth rates, LIC must implement effective modern antepartum and intrapartum care, including fetal monitoring and CS. © 2015 Nordic Federation of Societies of Obstetrics and Gynecology.

Source: Medline

Title: Assessment of angiogenesis modulators in pregnant women with pre-eclampsia: a case-control study.

Citation: Archives of gynecology and obstetrics, Feb 2016, vol. 293, no. 2, p. 369-375 (February 2016)

Author(s): Mundim, Guilhermo Justino, Paschoini, Marina Carvalho, Araujo Júnior, Edward, Da Silva Costa, Fabricio, Rodrigues Júnior, Virmondes

Abstract: This study aimed to evaluate the serum concentration of factors associated with placental angiogenesis in pre-eclamptic and normotensive pregnant women. This was a
prospective, cross-sectional, case-control study in which the pro-angiogenic factors PlGF, VEGF and IL-10, and the anti-angiogenic factors IL-6, IL-17 and TNF-α of 55 pregnant women (31 with pre-eclampsia-PE and 24 normotensive), with gestational age ≥20 weeks, were measured in maternal blood through the enzyme-linked immunosorbent assay (ELISA). The Mann-Whitney and Kruskal-Wallis tests were used for comparison between groups. Serum PlGF was reduced in the group of pregnant women with PE when compared with the normotensive women (493.2 ± 55.1 pg/mL vs. 4.4 ± 26.5 pg/mL; p < 0.001). There was no significant difference in PlGF levels in the pre-eclamptic pregnant women in relation to gestational age or proteinuria levels (p > 0.05). The serum levels of VEGF, IL-17, IL-10 and TNF-α were lower in the pregnant women with PE when compared with their normotensive peers, while the IL-6 levels were higher; however, this difference was not statistically significant (p > 0.05). Serum PlGF levels were reduced in the pregnant women with PE and were unrelated to disease severity. Serum levels of VEGF, IL-17, IL-10 and TNF-α were reduced in the pre-eclamptic pregnant women when compared with their normotensive peers, without statistically significant differences.

Source: Medline

Title: Clinical pharmacokinetic properties of magnesium sulphate in women with pre-eclampsia and eclampsia.

Citation: BJOG : an international journal of obstetrics and gynaecology, Feb 2016, vol. 123, no. 3, p. 356-366 (February 2016)

Author(s): Okusanya, B O, Oladapo, O T, Long, Q, Lumbiganon, P, Carroli, G, Qureshi, Z, Duley, L, Souza, J P, Gülmezoglu, A M

Abstract: The pharmacokinetic basis of magnesium sulphate (MgSO4) dosing regimens for eclampsia prophylaxis and treatment is not clearly established. To review available data on clinical pharmacokinetic properties of MgSO4 when used for women with pre-eclampsia and/or eclampsia. MEDLINE, EMBASE, CINAHL, POPLINE, Global Health Library and reference lists of eligible studies. All study types investigating pharmacokinetic properties of MgSO4 in women with pre-eclampsia and/or eclampsia. Two authors extracted data on basic pharmacokinetic parameters reflecting the different aspects of absorption, bioavailability, distribution and excretion of MgSO4 according to identified dosing regimens. Twenty-eight studies investigating pharmacokinetic properties of 17 MgSO4 regimens met our inclusion criteria. Most women (91.5%) in the studies had pre-eclampsia. Baseline serum magnesium concentrations were consistently <1 mmol/l across studies. Intravenous loading dose between 4 and 6 g was associated with a doubling of this baseline concentration half an hour after injection. Maintenance infusion of 1 g/hour consistently produced concentrations well below 2 mmol/l, whereas maintenance infusion at 2 g/hour and the Pritchard intramuscular regimen had higher but inconsistent probability of producing concentrations between 2 and 3 mmol/l. Volume of distribution of magnesium varied (13.65-49.00 l) but the plasma clearance was fairly similar (4.28-5.00 l/hour) across populations. The profiles of Zuspan and Pritchard regimens indicate that the minimum effective serum magnesium concentration for eclampsia prophylaxis is lower than the
generally accepted level. Exposure-response studies to identify effective alternative dosing regimens should target concentrations achievable by these standard regimens. Minimum effective serum magnesium concentration for eclampsia prophylaxis is lower than the generally accepted therapeutic level. © 2015 World Health Organization; licensed by John Wiley & Sons Ltd on behalf of Royal College of Obstetricians and Gynaecologists.

Source: Medline

---

Title: Pharmacogenomics of preterm birth prevention and treatment.

Citation: BJOG : an international journal of obstetrics and gynaecology, Feb 2016, vol. 123, no. 3, p. 368-375 (February 2016)

Author(s): Manuck, T A

Abstract: Pharmacogenomics and personalised medicine incorporate genetic factors, historical data, and environmental exposures to predict individual variation in response to medications. The study of pharmacology and pharmacogenomics is challenging in obstetrics, and our knowledge in this area lags behind other disciplines of medicine. Some preliminary data, however, suggest that some of the interindividual variation seen in response to medications given for the prevention (progesterone) and the treatment (nifedipine, terbutaline, and others) of preterm labour may be caused by pharmacogenomic effects. A comprehensive approach, integrating clinical data, environmental factors, including concomitant medications and genotype, to optimise the prevention and treatment strategies for preterm birth, is urgently needed. Some of the variation to meds for prematurity prevention/treatment may arise from pharmacogenomic effects. © 2015 Royal College of Obstetricians and Gynaecologists.

Source: Medline

---

Title: Clinical indication and timing of antenatal corticosteroid administration at a single centre.

Citation: BJOG : an international journal of obstetrics and gynaecology, Feb 2016, vol. 123, no. 3, p. 409-414 (February 2016)

Author(s): Levin, H I, Ananth, C V, Benjamin-Boamah, C, Siddiq, Z, Son, M, Friedman, A M

Abstract: To determine how well antenatal corticosteroids (ACS) were timed, based on the indication for administration for women delivering preterm. Retrospective cohort study. Tertiary medical centre. Six hundred and thirty women who had singleton preterm births between 24 and 34 weeks' gestational age. Charts from 2006 to 2011 were reviewed for indications for ACS administration, which included premature rupture of membranes, threatened preterm labour, risk factors for spontaneous preterm birth such as short ultrasound cervical length, positive fetal fibronectin, and hypertensive disorders of
pregnancy. Charts were reviewed for timing of ACS administration in relation to delivery. The primary outcome was optimal timing, defined as administration of ACS ≥24 hours to ≤7 days prior to delivery. Of 630 women who delivered preterm, 589 (93%) received ACS prior to delivery. ACS timing was optimal in 40% (238 of 589) of cases. Women with hypertensive disorders were most likely to have steroids optimally timed (62%). Asymptomatic women at increased risk for preterm delivery were less likely to receive optimally timed ACS (12%). The majority of women who received steroids >2 weeks prior to delivery (57%) received a second course. A majority of women who delivered preterm did not receive optimally timed ACS. Diagnostic tools that identified women at risk for preterm birth were not able to identify patients for appropriate steroid timing. Given the range of clinical scenarios in which patients are at increased risk for preterm delivery, further research is needed to assist clinicians in optimising steroid administration. Optimal timing of antenatal steroids prior to delivery does not occur in most cases. © 2015 Royal College of Obstetricians and Gynaecologists.

Source: Medline

Title: Fetal hydrocephalus and neonatal stroke as the first presentation of protein C deficiency.

Citation: Brain & development, Feb 2016, vol. 38, no. 2, p. 253-256 (February 2016)

Author(s): Ichiyama, Masako, Ohga, Shouichi, Ochiai, Masayuki, Fukushima, Kotaro, Ishimura, Masataka, Torio, Michiko, Urata, Michiyo, Hotta, Taeko, Kang, Dongchon, Hara, Toshiro

Abstract: Severe protein C-deficiency is a rare heritable thrombophilia of the newborn. Infants with biallelic PROC mutations present purpura fulminans and intracranial thromboembolism, while the prenatal onset of mutated heterozygotes remains unclear. We herewith present the first case of fetal ventriculomegaly and neonatal stroke associated with heterozygous PROC mutation. The infant was born to a healthy mother at 38 gestational weeks. The fetal growth had been normal, but the routine ultrasound screening had indicated mild hydrocephalus at 28 weeks of gestation. He developed convulsions two days after birth. Computed tomography of the brain revealed multiple hemorrhagic infarctions and ventriculomegaly. Dissociated levels of the plasma activity between protein C (21%) and protein S (42%) reached to determine the heterozygote of PROC c.574_576delAAG, a common thrombophilic predisposition in Asian ancestries. PC-mutant heterozygotes may have a limited high risk of cerebral thromboembolism during the perinatal course. Copyright © 2015 The Japanese Society of Child Neurology. Published by Elsevier B.V. All rights reserved.

Source: Medline

Title: A model of milk production in lactating dairy cows in relation to energy and nitrogen dynamics.
**Citation:** Journal of dairy science, Feb 2016, vol. 99, no. 2, p. 1605-1618 (February 2016)

**Author(s):** Johnson, I R, France, J, Cullen, B R

**Abstract:** A generic daily time-step model of a dairy cow, designed to be included in whole-system pasture simulation models, is described that includes growth, milk production, and lactation in relation to energy and nitrogen dynamics. It is a development of a previously described animal growth and metabolism model that describes animal body composition in terms of protein, water, and fat, and energy dynamics in relation to growth requirements, resynthesis of degraded protein, and animal activity. This is further developed to include lactation and fetal growth. Intake is calculated in relation to stage of lactation, pasture availability, supplementary feed, and feed quality. Energy costs associated with urine N excretion and methane fermentation are accounted for. Milk production and fetal growth are then calculated in relation to the overall energy and nitrogen dynamics. The general behavior of the model is consistent with expected characteristics. Simulations using the model as part of a whole-system pasture simulation model (DairyMod) are compared with experimental data where good agreement between pasture, concentrate and forage intake, as well as milk production over 3 consecutive lactation cycles, is observed. The model is shown to be well suited for inclusion in large-scale system simulation models. Copyright © 2016 American Dairy Science Association. Published by Elsevier Inc. All rights reserved.

**Source:** Medline

---

**Title:** Maternal pelvic size, fetal growth and risk of stroke in adult offspring in a large Swedish cohort.

**Citation:** Journal of developmental origins of health and disease, Feb 2016, vol. 7, no. 1, p. 108-113 (February 2016)

**Author(s):** Heshmati, A, Chaparro, M P, Koupil, I

**Abstract:** Earlier research suggests that maternal pelvic size is associated with offspring’s stroke risk in later life. We followed 6362 men and women from Uppsala, Sweden, born between 1915 and 1929 from 1964 to 2008 to assess whether maternal pelvic size was associated with incidence of thrombotic stroke (TS), haemorrhagic stroke (HS) and other stroke (OS). Offspring whose mothers had a flat pelvis had lower birth weight and birth-weight-for-gestational-age compared with those who did not. Inverse linear associations of birth-weight-for-gestational-age were observed with TS and OS. Female offspring whose mothers had a flat pelvis had increased risk of TS, but flat pelvis was not associated with other types of stroke. A smaller difference between intercristal and interspinous diameters and a smaller external conjugate diameter were independently associated with HS, whereas no pelvic measurements were associated with OS. We conclude that a smaller pelvis in women may impact the health of their offspring in adulthood.

**Source:** Medline
Title: Adverse outcomes of pregnancy in women with non-alcoholic fatty liver disease.

Citation: Liver international : official journal of the International Association for the Study of the Liver, Feb 2016, vol. 36, no. 2, p. 268-274 (February 2016)

Author(s): Hagström, Hannes, Höijer, Jonas, Ludvigsson, Jonas F, Bottai, Matteo, Ekbom, Anders, Hultcrantz, Rolf, Stephansson, Olof, Stokkeland, Knut

Abstract: Non-alcoholic fatty liver disease (NAFLD) is considered the most common liver disease in the world, but little is known about its potential association with pregnancy outcomes. We aimed to investigate pregnancy outcomes in NAFLD. The Swedish Medical Birth Register (MBR) was used to identify births between 1992 and 2011 (N = 1 960 416). By linkage with the National Patient Register, we identified women with a diagnosis of NAFLD. The MBR was then used to identify outcomes: gestational diabetes, pre-eclampsia, Caesarean section, Apgar score <7 at 5 min, preterm birth (<37 weeks), low birth weight (<2500 g), infants born small for gestational age and congenital malformations. As controls, we used women with no diagnosis for NAFLD divided into two groups; with and without polycystic ovary syndrome (PCOS). Poisson regression was used to estimate relative risks (RRs) adjusted for maternal age, smoking status and body mass index at early pregnancy, parity and prepregnancy diabetes. We identified 110 pregnancies in women with NAFLD. Using women without a diagnosis of NAFLD or PCOS as controls; NAFLD was associated with gestational diabetes [adjusted RRs 2.78; 95% confidence interval (CI): 1.25-6.15], pre-eclampsia (aRR 1.95; 95% CI 1.03-3.70), Caesarean section (aRR 1.52; 95% CI 1.19-1.94), preterm birth (aRR 2.50; 95% CI 1.38-4.55) and with low birth weight (aRR 2.40; 95% CI 1.21-4.78). Women with a diagnosis of NAFLD prior to giving birth have increased risks for adverse pregnancy outcome independently of body mass index and diabetes, and should be carefully monitored during antenatal care. © 2015 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd.

Source: Medline

Title: RGS2 squelches vascular Gi/o and Gq signaling to modulate myogenic tone and promote uterine blood flow.

Citation: Physiological reports, Feb 2016, vol. 4, no. 2 (February 2016)

Author(s): Jie, Li, Owens, Elizabeth A, Plante, Lauren A, Fang, Zhuyuan, Rensing, Derek T, Moeller, Kevin D, Osei-Owusu, Patrick

Abstract: Uterine artery blood flow (UABF) is critical to maintaining uterine perfusion in nonpregnant states and for uteroplacental delivery of nutrients and oxygen to the fetus during pregnancy. Impaired UABF is implicated in infertility and several pregnancy complications including fetal growth restriction, small for gestational age, and preeclampsia. The etiology of abnormal UABF is not known. Here, we determined whether deficiency or loss of RGS2, a GTPase-activating protein for Gq/11 and Gi/o class G proteins, affects UABF in nonpregnant mice. We used Doppler ultrasonography to assess UABF in wild type (WT),
Rgs2 heterozygous (Rgs2+/−) and homozygous knockout (Rgs2−/−) mice. Video microscopy was used for ex vivo examination of uterine artery myogenic tone and fura-2 imaging for in vitro assessment of internal stores Ca(2+) release. We found that baseline UABF velocity was markedly decreased while impedance measured as resistive index (WT = 0.58 ± 0.04 vs. Rgs2−/− = 0.71 ± 0.03, P < 0.01) and pulsatile index (WT = 0.90 ± 0.06 vs. Rgs2−/− = 1.25 ± 0.11, P < 0.01) was increased in Rgs2−/− mice. Uterine artery tone was augmented in Rgs2+/− and Rgs2−/− mice, which was normalized to WT levels following Gi/o and Gq inactivation. Conversely, blockade of ryanodine receptors increased WT myogenic tone to RGS2 mutant levels. The data together indicate that RGS2 deficiency decreases UABF by increasing myogenic tone at least partly through prolonged G protein activation. Mutations that decrease vascular RGS2 expression may be a predisposition to decreased uterine blood flow. Targeting G protein signaling therefore might improve uterine and uteroplacental underperfusion disorders. © 2016 The Authors. Physiological Reports published by Wiley Periodicals, Inc. on behalf of the American Physiological Society and The Physiological Society.

Source: Medline

Full Text: Available from Highwire Press in Physiological Reports

Title: Maternal Nutrient Restriction in Guinea Pigs as an Animal Model for Inducing Fetal Growth Restriction.

Citation: Reproductive sciences (Thousand Oaks, Calif.), Feb 2016, vol. 23, no. 2, p. 219-227 (February 2016)

Author(s): Elias, Alexander A, Ghaly, Andrew, Matushewski, Brad, Regnault, Timothy R H, Richardson, Bryan S

Abstract: We determined the impact of moderate maternal nutrient restriction (MNR) in guinea pigs on pregnancy outcomes, maternal/fetal growth parameters, and blood analytes to further characterize the utility of this model for inducing fetal growth restriction (FGR). Thirty guinea pig sows were fed ad libitum (Control) or 70% of the control diet prepregnant switching to 90% at midpregnancy (MNR). Animals were necropsied near term with weights obtained on all sows, fetuses, and placenta. Fetal blood sampling and organ dissection were undertaken in appropriate for gestational age (AGA) fetuses from Control litters and FGR fetuses from MNR litters using > or < 80 g which approximated the 10th percentile for the population weight distribution of the Control fetuses. MNR fetal demise rates (1/43) were extremely low in contrast to that seen with uterine artery ligation/ablation models, albeit with increased preterm delivery in MNR sows (3 of 15). We confirm that MNR fetuses are smaller and have increased placental/fetal weight ratios as often seen in human FGR infants. We provide justification for using a fetal weight threshold for categorizing AGA Control and FGR-MNR cohorts reducing population variance, and show that FGR-MNR fetuses have asymmetrical organ growth, and are polycythemic and hypoglycemic which are also well associated with moderate FGR in humans. These findings further support the utility of moderate MNR in guinea pigs for inducing FGR with many similarities to that in humans with
Title: Expression of DAB2IP in human trophoblast and its role in trophoblast invasion.

Citation: The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians, Feb 2016, vol. 29, no. 3, p. 393-399 (February 2016)

Author(s): Shan, Nan, Xiao, Xiaoqiu, Chen, Ying, Luo, Xin, Yin, Nanlin, Deng, Qinyin, Qi, Hongbo

Abstract: DAB2IP is a growth inhibitor present in many types of cancer cells and is associated with epigenetic regulations controlling tumor development. The primary objective of this study is to determine whether DAB2IP participates in the invasion and migration of trophoblasts during placental development. The expressions of DAB2IP in human placentas (10 villi, 18 term placentas and 20 pre-eclampsia placentas) were determined by immunohistochemistry, Western blotting and quantitative RT-PCR. HTR8/SVneo cells were treated with hypoxia-reoxygenation (H/R) to test how DAB2IP expression would affect the invasion and migration of trophoblasts. JEG-3 and HTR8/SVneo cells were treated with 5-aza-2-deoxycytidine (5-aza-dC) to study the role of DAB2IP promoter methylation in trophoblasts. DAB2IP was strongly expressed in human villi and extravillous trophoblasts as well as in HTR8/SVneo cells, but not in pre-eclampsia placentas. DAB2IP expression increased after H/R treatment, but the invasive and migratory abilities of trophoblasts were reduced. DAB2IP expression in JEG-3 cells also increased after treatment with 5-aza-dC. These findings strongly suggest that DAB2IP is an important negative regulator at the maternal-fetal interface during early pregnancy. Excessive oxidative stress can increase DAB2IP expression in trophoblasts. The mechanism of DNA methylation may involve in its function during the development of pathologic pregnancy.

Source: Medline

Title: Cerebral and somatic NIRS-determined oxygenation in IUGR preterm infants during transition.

Citation: The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians, Feb 2016, vol. 29, no. 3, p. 443-446 (February 2016)

Author(s): Bozzetti, Valentina, Paterlini, Giuseppe, Bel, Frank van, Visser, Gerard H A, Tosetti, Lorenzo, Gazzolo, Diego, Tagliabue, Paolo E
Abstract: Fetal growth restriction (intra-uterine growth restriction [IUGR]) has a considerable impact on perinatal morbidity. Preterm IUGR infants are prone to impaired intestine function. Near-infrared spectroscopy (NIRS) has been used to monitor oxygenation status of the brain and of the intestine. We conducted a prospective case-control study at our NICU in 20 preterm infants of whom 10 infants complicated by compared with 10 non-IUGR preterm infants. Splanchnic and cerebral regional oximetry values were measured with NIRS. Three hours of consecutive recordings were performed in the first 24 h of life, T0, and during the transitional period, T1. The cerebral/splanchnic oxygenation ratio, CSOR, (cerebral regional saturations [rScO2]/splanchnic regional saturations [rSsO2]) was also calculated. Both in the IUGR and the non-IUGR infants, at T0 and T1 monitoring time-points, the rSO2 values were higher in the cerebral district when compared to those of the splanchnic area. Comparison of the NIRS parameters between the IUGR and non-IUGR infants at T0 showed no difference in rScO2, while rSsO2 was significantly lower in the IUGR group. At T1, rScO2 was significantly lower and rSsO2 higher in the IUGR group. Cerebral/splanchnic vascular adaptation of IUGR infants to the extra-uterine environment is characterized by a postnatal persistence of the brain sparing effect with reperfusion in the transitional period.

Source: Medline
UpToDate is the leading evidence-based clinical decision support system, designed for use at the point of care.

It contains more than 9,500 searchable topics across the following specialities:

- Adult and paediatric emergency medicine
- Allergy and immunology
- Cardiovascular medicine
- Dermatology
- Drug therapy
- Endocrinology and diabetes mellitus
- Family medicine
- Gastroenterology and hepatology
- General surgery
- Geriatrics
- Haematology
- Hospital Medicine
- Infectious diseases
- Nephrology and hypertension
- Neurology
- Obstetrics and gynaecology
- Oncology
- Paediatrics
- Primary care internal medicine
- Psychiatry
- Pulmonary, critical care and sleep medicine
- Rheumatology

How to access UpToDate

You can access UpToDate from any computer via www.uptodate.com. You will need your NHS Athens username/password (register through http://openathens.nice.org.uk/).
What is OpenAthens?
OpenAthens is a way of authenticating that you have permission to access our subscription e-resources. To access our electronic resources you will need a UH Bristol Athens username/password.

How can I get an Athens login?
Click here to complete the online registration form. You will need to register using a Trust PC and a UH Bristol email address. Once you have successfully completed the form, you will be sent an email to your UH Bristol account with an authentication link.

I have an Athens account from another Trust/University. Do I still need a UH Bristol account?
You will need a UH Bristol account to access our local subscription resources. You can either update the settings of your existing account by logging in and selecting ‘change organisation’, or you can set up a new UH Bristol account by clicking here (you will need to register using a Trust PC and a UH Bristol email address).

My Athens account has expired. What should I do?
You can register for a new account here.

I have forgotten my Athens Username/Password. How can I reset it?
Password: If you are on a Trust PC, follow the link to https://register.athensams.nhs.uk/nhs/forgotten_password.php.

Username and password: You should email athens.sdhtc@nhs.net with your full name, full work address, work telephone number and the email address you used to register for the account. In the email subject line put ‘Forgotten username and password’. It may take up to five working days to receive your username and a reset password.
Library Opening Times

Staffed times 8.30 am—16.30 pm
Monday to Friday
Swipe Access 7.00 am—23.00 pm
7 days a week
Level 5,
Education Centre
University Hospitals Bristol

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

Upcoming Lunchtime Drop-in Sessions

The Library and Information Service provides free specialist information skills training for all UHBristol staff and students.

To book a place, email: library@uhbristol.nhs.uk

If you’re unable to attend we also provide one-to-one or small group sessions. Contact library@uhbristol.nhs.uk or katie.barnard@uhbristol.nhs.uk to arrange a session.

January (1pm) | February (12pm)
---|---
Monday 4th | Literature searching | Friday 5th | Literature Searching
Tuesday 12th | Critical Appraisal | Monday 8th | Understanding articles
Wednesday 20th | Statistics | Tuesday 16th | Statistics