



## December 2015 Literature Alert

1.

Am J Obstet Gynecol. 2015 Nov;213(5):637-43. doi: 10.1016/j.ajog.2015.04.035. Epub 2015 Apr 30.

[Systematic review and metaanalysis of perinatal outcomes after radiofrequency ablation and bipolar cord occlusion in monochorionic pregnancies.](#)

Gaerty K, Greer RM, Kumar S.

### Abstract

The aim of this study was to analyze perinatal outcomes after selective reduction in monochorionic pregnancies with the use of either radiofrequency ablation (RFA) or bipolar cord occlusion (BCO). This was a systematic review and metaanalysis that included all studies with  $\geq 5$  cases that described perinatal outcomes after BCO or RFA that were identified in PubMed, Embase, Web of Science, COCHRANE, CINAHL, Academic Search Premier, Science Direct, and MEDLINE that were published between 1965 and July 2014. For count data, incidence risk ratios (IRR; 95% confidence interval [CI]) were calculated with BCO as the reference standard. The analysis included 481 cases of BCO and 320 cases of RFA from 17 studies. The mean median gestations at procedure were  $21.1 \pm 1.2$  weeks (BCO) and  $18.8 \pm 2.5$  weeks (RFA;  $P = .03$ ). The rate of cotwin death was higher in the RFA group (14.7%) vs the BCO group (10.6%; IRR, 1.38; 95% CI, 0.93-2.05;  $P = .11$ ). The live birth rate was 81.3% for the RFA group and 86.7% in the BCO group (IRR, 0.93; 95% CI, 0.80-1.09;  $P = .41$ ). BCO had higher neonatal death rates (8.1%) vs RFA (4.5%; IRR, 0.56; 95% CI, 0.30-1.04;  $P = .07$ ). Overall survival was 76.8% for RFA and 79.1% for BCO (IRR, 0.97; 95% CI, 0.82-1.14;  $P = .72$ ); however, none of these differences were statistically significant. Preterm premature rupture of membranes occurred in 17.7% of RFA cases and 28.2% of the BCO cases (IRR, 0.63; 95% CI, 0.43-0.91;  $P = .01$ ). The mean median gestational age at delivery was  $34.7 \pm 1.7$  weeks in the RFA group and  $35.1 \pm 1.6$  weeks in the

BCO group. Our data do not demonstrate clearly the superiority of 1 procedure over the other. The clinical situation and preference of the operator are important considerations. Rates of preterm delivery and preterm premature rupture of membranes remain substantial for both procedures.

Copyright © 2015 Elsevier Inc. All rights reserved.

KEYWORDS:

bipolar cord occlusion; fetal reduction; metaanalysis; monochorionic; radiofrequency; systematic review

PMID: 25935786 [PubMed - in process]

2.

Fetal Diagn Ther. 2015;38(3):186-94. doi: 10.1159/000380821. Epub 2015 Apr 1.

[The Contribution of MRI after Fetal Anomalies Have Been Diagnosed by Ultrasound: Correlation with Postnatal Outcomes.](#)

Verburg B, Fink AM, Reidy K, Palma-Dias R.

Abstract

OBJECTIVE:

The aim of this study was to investigate the additional value of fetal magnetic resonance imaging (MRI) in the assessment and management of fetuses with abnormal findings on ultrasound.

METHODS:

A total of 257 patients who had fetal MRI following the ultrasound diagnosis of a fetal anomaly, or were at high risk, were included. The patients were grouped by referral category for fetal MRI. Fetal MRI was compared to ultrasound in the detection of anomalies, i.e. whether additional findings were identified and if this changed diagnosis, prognosis and management during pregnancy.

RESULTS:

Ultrasound findings were confirmed on fetal MRI in 89% of the cases. Additional findings were seen with MRI in 28% of all patients. The diagnosis changed in 21% and the prognosis in 19% of

the cases. Perinatal management changed in 8%. The antenatal findings were confirmed in all cases that had a postmortem examination following termination of pregnancy. In all the pregnancies that continued to delivery and for which the postnatal outcome is known, the findings correlated in 97% of the cases.

#### CONCLUSION:

Fetal MRI provided additional detection of fetal anomalies, leading to a change in diagnosis and prognosis in 19% of the cases. Neonatal and postmortem findings mostly confirmed the fetal MRI diagnosis, suggesting it to be a useful tool for clinical decision making in perinatal management.

© 2015 S. Karger AG, Basel.

PMID: 25832809 [PubMed - in process]

3.

Fetal Diagn Ther. 2015;38(3):200-4. doi: 10.1159/000381144. Epub 2015 Sep 15.

[Prediction of Preterm Delivery by Late Cervical Length Measurement after 24 Weeks.](#)

Papastefanou I, Pilalis A, Eleftheriades M, Souka AP.

Abstract

#### OBJECTIVE:

To examine the value of the cervical length (CL) measurement at 24-30 gestational weeks in the prediction of spontaneous preterm delivery (SPD) between 30 and 34 weeks (SPD34) and between 34 and 37 weeks (SPD37).

#### METHODS:

We performed a prospective cross-sectional study. CL was measured once by transvaginal ultrasound examination between 24 and 30 weeks.

#### RESULTS:

The study sample consisted of 1,180 low-risk singleton pregnancies. 10 women (0.85%) had a SPD34 and 60 (5.08%) had a SPD37. CL was shorter ( $p < 0.001$ ) in the women who had a SPD34 (median 11 mm) compared to the women who delivered after 34 weeks (median 31 mm). CL was shorter ( $p < 0.001$ ) in the women who had a SPD37 (median 22 mm) compared to the

women who delivered after 37 weeks (median 31 mm). CL predicted SPD34 (OR = 0.837, R2 = 0.2768, AUC = 0.9406, p < 0.001) and SPD37 (OR = 0.907, R2 = 0.1085, AUC = 0.7584, p < 0.001). The model achieved a sensitivity of 70.0 and 38.3% for 10% false-positive rate for SPD34 and SPD37, respectively.

#### CONCLUSIONS:

CL after 24 weeks is significantly shorter in women destined to have a SPD. In low-risk singleton pregnancies CL performs very well in predicting SPD34 and adequately in predicting SPD37.

© 2015 S. Karger AG, Basel.

PMID: 26367859 [PubMed - in process]

4.

Lancet. 2015 Aug 25. pii: S0140-6736(15)00045-8. doi: 10.1016/S0140-6736(15)00045-8. [Epub ahead of print]

[Epilepsy in pregnancy and reproductive outcomes: a systematic review and meta-analysis.](#)

Viale L, Allotey J, Cheong-See F, Arroyo-Manzano D, Mccorry D, Bagary M, Mignini L, Khan KS, Zamora J, Thangaratnam S; EBM CONNECT Collaboration.

#### Abstract

##### BACKGROUND:

Antenatal care of women with epilepsy is varied. The association of epilepsy and antiepileptic drug exposure with pregnancy outcomes needs to be quantified to guide management. We did a systematic review and meta-analysis to investigate the association between epilepsy and reproductive outcomes, with or without exposure to antiepileptic drugs.

##### METHODS:

We searched MEDLINE, Embase, Cochrane, AMED, and CINAHL between Jan 1, 1990, and Jan 21, 2015, with no language or regional restrictions, for observational studies of pregnant women with epilepsy, which assessed the risk of obstetric complications in the antenatal, intrapartum, or postnatal period, and any neonatal complications. We used the Newcastle-Ottawa Scale to assess the methodological quality of the included studies, risk of bias in the selection and comparability of cohorts, and outcome. We assessed the odds of maternal and

fetal complications (excluding congenital malformations) by comparing pregnant women with and without epilepsy and undertook subgroup analysis based on antiepileptic drug exposure in women with epilepsy. We summarised the association as odds ratio (OR; 95% CI) using random effects meta-analysis. The PROSPERO ID of this Systematic Review's protocol is CRD42014007547.

#### FINDINGS:

Of 7050 citations identified, 38 studies from low-income and high-income countries met our inclusion criteria (39 articles including 2 837 325 pregnancies). Women with epilepsy versus those without (2 809 984 pregnancies) had increased odds of spontaneous miscarriage (OR 1.54, 95% CI 1.02-2.32; I<sup>2</sup>=67%), antepartum haemorrhage (1.49, 1.01-2.20; I<sup>2</sup>=37%), postpartum haemorrhage (1.29, 1.13-1.49; I<sup>2</sup>=41%), hypertensive disorders (1.37, 1.21-1.55; I<sup>2</sup>=23%), induction of labour (1.67, 1.31-2.11; I<sup>2</sup>=64%), caesarean section (1.40, 1.23-1.58; I<sup>2</sup>=66%), any preterm birth (<37 weeks of gestation; 1.16, 1.01-1.34; I<sup>2</sup>=64%), and fetal growth restriction (1.26, 1.20-1.33; I<sup>2</sup>=1%). The odds of early preterm birth, gestational diabetes, fetal death or stillbirth, perinatal death, or admission to neonatal intensive care unit did not differ between women with epilepsy and those without the disorder.

#### INTERPRETATION:

A small but significant association of epilepsy, exposure to antiepileptic drugs, and adverse outcomes exists in pregnancy. This increased risk should be taken into account when counselling women with epilepsy.

#### FUNDING:

EBM CONNECT Collaboration.

Copyright © 2015 Elsevier Ltd. All rights reserved.

PMID: 26318519 [PubMed - as supplied by publisher]

5.

Lancet. 2015 Sep 7. pii: S0140-6736(15)00131-2. doi: 10.1016/S0140-6736(15)00131-2. [Epub ahead of print]

[Screening for fetal growth restriction with universal third trimester ultrasonography in](#)

[nulliparous women in the Pregnancy Outcome Prediction \(POP\) study: a prospective cohort study.](#)

Sovio U, White IR, Dacey A, Pasupathy D, Smith GC.

Author information

Abstract

BACKGROUND:

Fetal growth restriction is a major determinant of adverse perinatal outcome. Screening procedures for fetal growth restriction need to identify small babies and then differentiate between those that are healthy and those that are pathologically small. We sought to determine the diagnostic effectiveness of universal ultrasonic fetal biometry in the third trimester as a screening test for small-for-gestational-age (SGA) infants, and whether the risk of morbidity associated with being small differed in the presence or absence of ultrasonic markers of fetal growth restriction.

METHODS:

The Pregnancy Outcome Prediction (POP) study was a prospective cohort study of nulliparous women with a viable singleton pregnancy at the time of the dating ultrasound scan. Women participating had clinically indicated ultrasonography in the third trimester as per routine clinical care and these results were reported as usual (selective ultrasonography). Additionally, all participants had research ultrasonography, including fetal biometry at 28 and 36 weeks' gestational age. These results were not made available to participants or treating clinicians (universal ultrasonography). We regarded SGA as a birthweight of less than the 10th percentile for gestational age and screen positive for SGA an ultrasonographic estimated fetal weight of less than the 10th percentile for gestational age. Markers of fetal growth restriction included biometric ratios, utero-placental Doppler, and fetal growth velocity. We assessed outcomes for consenting participants who attended research scans and had a livebirth at the Rosie Hospital (Cambridge, UK) after the 28 weeks' research scan.

FINDINGS:

Between Jan 14, 2008, and July 31, 2012, 4512 women provided written informed consent of whom 3977 (88%) were eligible for analysis. Sensitivity for detection of SGA infants was 20%

(95% CI 15-24; 69 of 352 fetuses) for selective ultrasonography and 57% (51-62; 199 of 352 fetuses) for universal ultrasonography (relative sensitivity 2.9, 95% CI 2.4-3.5,  $p < 0.0001$ ). Of the 3977 fetuses, 562 (14.1%) were identified by universal ultrasonography with an estimated fetal weight of less than the 10th percentile and were at an increased risk of neonatal morbidity (relative risk [RR] 1.60, 95% CI 1.22-2.09,  $p = 0.0012$ ). However, estimated fetal weight of less than the 10th percentile was only associated with the risk of neonatal morbidity (pinteraction=0.005) if the fetal abdominal circumference growth velocity was in the lowest decile (RR 3.9, 95% CI 1.9-8.1,  $p = 0.0001$ ). 172 (4%) of 3977 pregnancies had both an estimated fetal weight of less than the 10th percentile and abdominal circumference growth velocity in the lowest decile, and had a relative risk of delivering an SGA infant with neonatal morbidity of 17.6 (9.2-34.0,  $p < 0.0001$ ).

#### INTERPRETATION:

Screening of nulliparous women with universal third trimester fetal biometry roughly tripled detection of SGA infants. Combined analysis of fetal biometry and fetal growth velocity identified a subset of SGA fetuses that were at increased risk of neonatal morbidity.

#### FUNDING:

National Institute for Health Research, Medical Research Council, Sands, and GE Healthcare.

Copyright © 2015 Sovio et al. Open Access article distributed under the terms of CC BY.

Published by Elsevier Ltd.. All rights reserved.

PMID: 26360240 [PubMed - as supplied by publisher]

6.

J Pediatr. 2015 Nov;167(5):975-981.e2. doi: 10.1016/j.jpeds.2015.08.025. Epub 2015 Sep 15.

[Intrauterine Growth Restriction, Head Size at Birth, and Outcome in Very Preterm Infants.](#)

Guellec I, Marret S, Baud O, Cambonie G, Lapillonne A, Roze JC, Fresson J, Flamant C, Charkaluk ML, Arnaud C, Ancel PY.

Abstract

#### OBJECTIVES:

To determine whether small head circumference (HC) or birth weight (BW) or both are

associated with neonatal and long-term neurologic outcome in very preterm infants.

#### STUDY DESIGN:

All 2442 live births from the 1997 Epipage study between 26 and 32 weeks of gestational age in 9 regions of France were analyzed. A total of 1395 were tested at age 5 years for cognitive performance and 1315 with school performance reports at age 8 years. Symmetric growth restriction (SGR) was defined by HC and BW <20th percentile and in the same percentile range, and asymmetric growth restriction by at least 1 of HC and BW <20th percentile and the other in a higher decile range. There were 2 forms of asymmetric growth restriction: head growth restriction (HGR) and weight growth restriction (WGR). Appropriate for gestational age was defined by both BW and HC >20th percentile.

#### RESULTS:

Compared with appropriate for gestational age, SGR was significantly associated with neonatal mortality (aOR 2.99, 95% CI 1.78-5.03), moderate and severe cognitive deficiency (aOR 1.65, 95% CI 1.01-2.71 and aOR 2.61, 95% CI 1.46-4.68, respectively), and poor school performance (aOR 1.79; 95% CI 1.13-2.83). HGR was significantly associated with severe cognitive deficiency (aOR 2.07, 95% CI 1.15-3.74). WGR was not significantly associated with cognitive or school performance despite higher rates of neonatal morbidity.

#### CONCLUSIONS:

SGR in preterm infants was associated with neonatal mortality and impaired cognitive and school performance. The outcome of asymmetric growth restriction differed according to HC. HGR was associated with impaired cognitive function; WGR was not.

Copyright © 2015 Elsevier Inc. All rights reserved.

PMID: 26384436 [PubMed - in process]

7.

J Pediatr. 2015 Nov;167(5):987-993.e3. doi: 10.1016/j.jpeds.2015.08.013. Epub 2015 Sep 16.

[Neonatal Magnetic Resonance Imaging Pattern of Brain Injury as a Biomarker of Childhood Outcomes following a Trial of Hypothermia for Neonatal Hypoxic-Ischemic Encephalopathy.](#)

Shankaran S, McDonald SA, Laptook AR, Hintz SR, Barnes PD, Das A, Pappas A, Higgins RD;

Eunice Kennedy Shriver National Institute of Child Health and Human Development Neonatal Research Network.

Collaborators (22)

Abstract

OBJECTIVE:

To examine the ability of magnetic resonance imaging (MRI) patterns of neonatal brain injury defined by the National Institute of Child Health and Human Development Neonatal Research Network to predict death or IQ at 6-7 years of age following hypothermia for neonatal encephalopathy.

STUDY DESIGN:

Out of 208 participants, 124 had MRI and primary outcome (death or IQ <70) data. The relationship between injury pattern and outcome was assessed.

RESULTS:

Death or IQ <70 occurred in 4 of 50 (8%) of children with pattern 0 (normal MRI), 1 of 6 (17%) with 1A (minimal cerebral lesions), 1 of 4 (25%) with 1B (extensive cerebral lesions), 3 of 8 (38%) with 2A (basal ganglia thalamic, anterior or posterior limb of internal capsule, or watershed infarction), 32 of 49 (65%) with 2B (2A with cerebral lesions), and 7 of 7 (100%) with pattern 3 (hemispheric devastation),  $P < .001$ ; this association was also seen within hypothermia and control subgroups. IQ was  $90 \pm 13$  among the 46 children with a normal MRI and  $69 \pm 25$  among the 50 children with an abnormal MRI. In childhood, for a normal outcome, a normal neonatal MRI had a sensitivity of 61%, specificity of 92%, a positive predictive value of 92%, and a negative predictive value of 59%; for death or IQ <70, the 2B and 3 pattern combined had a sensitivity of 81%, specificity of 78%, positive predictive value of 70%, and a negative predictive value of 87%.

CONCLUSIONS:

The Neonatal Research Network MRI pattern of neonatal brain injury is a biomarker of neurodevelopmental outcome at 6-7 years of age.

TRIAL REGISTRATION:

ClinicalTrials.gov: NCT00005772.

Copyright © 2015. Published by Elsevier Inc.

PMID: 26387012 [PubMed - in process]

8.

Prenat Diagn. 2015 Nov;35(11):1117-27. doi: 10.1002/pd.4656. Epub 2015 Sep 11.

[Interpreting mosaicism in chorionic villi: results of a monocentric series of 1001 mosaics in chorionic villi with follow-up amniocentesis.](#)

Malvestiti F, Agrati C, Grimi B, Pompili E, Izzi C, Martinoni L, Gaetani E, Liuti MR, Trotta A, Maggi F, Simoni G, Grati FR.

Abstract

OBJECTIVES:

Chromosomal mosaicism in chorionic villi (CV) is detected in ~1-2% of cases. When a mosaic in CV is detected during prenatal diagnosis, a confirmatory karyotype should be performed on amniocytes to discriminate between a mosaic confined to the placenta [confined placental mosaicism (CPM)] and one generalized to the fetus [true fetal mosaicism (TFM)]. We determined the likelihood that any mosaic abnormalities identified through CV samples are confirmed in the fetus.

METHODS:

Over a period of 14 years, the laboratory analyzed both the cytotrophoblast and the mesenchyme of 60 347 CV samples. Cytogenetic results from CV samples showing mosaicism with follow-up amniocentesis were considered. The incidence of CPM and TFM and the risk of confirmation in the amniotic fluid (AF) were calculated. Uniparental disomy (UPD) was tested on ~300 cases at risk due to involvement of an imprinted chromosome.

RESULTS:

Overall, 1317 mosaic CV cases (2.18%) were detected, of which 1001 were subsequently investigated by amniocentesis. The overall risk of TFM was 13% and UPD incidence was 2.1%.

CONCLUSIONS:

The very large presented sample set and consistency in cytogenetic methodology, especially the analysis of both placental layers performed on all CV samples will enable genetic counselors to

determine the risk of fetal involvement and the clinical relevance of an identified mosaic condition. © 2015 John Wiley & Sons, Ltd.

© 2015 John Wiley & Sons, Ltd.

PMID: 26213308 [PubMed - in process]

9.

J Perinatol. 2015 Nov;35(11):924-9. doi: 10.1038/jp.2015.103. Epub 2015 Aug 27.

[Labor and neonatal outcomes after term induction of labor in gestational diabetes.](#)

Vilchez GA, Dai J, Hoyos LR, Gill N, Bahado-Singh R, Sokol RJ.

Abstract

OBJECTIVE:

To identify the optimal gestational age (GA) for induction of labor (IOL) at term among patients with gestational diabetes (GDMA) according to perinatal outcomes.

STUDY DESIGN:

The US Natality Database from 2007 to 2010 was reviewed. Inclusion criteria were singleton delivery, IOL at 37 to 42 weeks and GDMA. Exclusion criteria included congenital anomalies, pre-gestational diabetes, hypertensive disorders, previous cesarean, breech presentation and rupture of membranes. Controls were non-GDMA cases delivered in geographic and temporal proximity. Delivery mode, macrosomia and perinatal complications were analyzed. Logistic regression adjusted for confounders was used to calculate odds ratios by GA using 39 weeks non-GDMA as reference.

RESULTS:

In all, 96 964 cases and 176 079 controls were included. Increased risk for all adverse outcomes among GDMA cases was found. The nadir for intrapartum and neonatal complications was 38 and 40 weeks, respectively, whereas for cesarean and macrosomia was 39 weeks.

CONCLUSION:

The optimal timing for IOL at term in GDMA appears to be 39 to 40 weeks.

PMID: 26313053 [PubMed - in process]

10.

BJOG. 2015 Nov;122(12):1653-62. doi: 10.1111/1471-0528.13597. Epub 2015 Aug 20.

[Maternal outcomes at 3 months after planned caesarean section versus planned vaginal birth for twin pregnancies in the Twin Birth Study: a randomised controlled trial.](#)

Hutton EK, Hannah ME, Ross S, Joseph KS, Ohlsson A, Asztalos EV, Willan AR, Allen AC, Armson BA, Gafni A, Mangoff K, Sanchez JJ, Barrett JF; Twin Birth Study Collaborative Group.

Abstract

OBJECTIVE:

To compare outcomes at 3 months post partum for women randomised to give birth by planned caesarean section (CS) or by planned vaginal birth (VB) in the Twin Birth Study (TBS).

DESIGN:

We invited women in the TBS to complete a 3-month follow-up questionnaire.

SETTING:

Two thousand and eight hundred and four women from 25 countries.

POPULATION:

Two thousand and five hundred and seventy women (92% response rate).

METHODS:

Women randomised between 13 December 2003 and 4 April 2011 in the TBS completed a questionnaire and outcomes were compared using an intention-to-treat approach.

MAIN OUTCOME AND MEASURES:

Breastfeeding, quality of life, depression, fatigue and urinary incontinence.

RESULTS:

We found no clinically important differences between groups in any outcome. In the planned CS versus planned VB groups, breastfeeding at any time after birth was reported by 84.4% versus 86.4% ( $P = 0.13$ ); the mean physical and mental Short Form (36) Health Survey (SF-36) quality of life scores were 51.8 versus 51.6 ( $P = 0.65$ ) and 46.7 versus 46.0 ( $P = 0.09$ ), respectively; the mean Multidimensional Assessment of Fatigue score was 20.3 versus 20.8 ( $P = 0.14$ ); the frequency of probable depression on the Edinburgh Postnatal Depression Scale was 14.0% versus 14.8% ( $P = 0.57$ ); the rate of problematic urinary incontinence was 5.5% versus

6.4% (P = 0.31); and the mean Incontinence Impact Questionnaire-7 score was 20.5 versus 20.4 (P = 0.99). Partner relationships, including painful intercourse, were similar between the groups.

#### CONCLUSION:

For women with twin pregnancies randomised to planned CS compared with planned VB, outcomes at 3 months post partum did not differ. The mode of birth was not associated with problematic urinary incontinence or urinary incontinence that affected the quality of life.

Contrary to previous studies, breastfeeding at 3 months was not increased with planned VB.

#### TWEETABLE ABSTRACT:

Planned mode of birth for twins doesn't affect maternal depression, wellbeing, incontinence or breastfeeding.

© 2015 The Authors. BJOG An International Journal of Obstetrics and Gynaecology published by John Wiley & Sons Ltd on behalf of Royal College of Obstetricians and Gynaecologists.

#### KEYWORDS:

Breastfeeding; incontinence; maternal outcomes; postpartum depression; twin pregnancy

PMID: 26328526 [PubMed - in process]

11.

Pediatrics. 2015 Nov;136(5):e1285-93. doi: 10.1542/peds.2015-1400. Epub 2015 Oct 12.

[Childhood Health and Developmental Outcomes After Cesarean Birth in an Australian Cohort.](#)

Robson SJ, Vally H, Abdel-Latif ME, Yu M, Westrupp E.

#### Abstract

##### BACKGROUND AND OBJECTIVES:

Concerns have been raised about associations between cesarean delivery and childhood obesity and asthma. However, published studies have not examined the long-term neurodevelopmental outcomes or fully addressed confounding influences. We used data from the LSAC (Longitudinal Study of Australian Children) to explore the relationship between cesarean delivery and physical and socio-emotional outcomes from 0 to 7 years, taking into account confounding factors.

## METHODS:

Data were from 5 waves of LSAC representing 5107 children born in 2003 and 2004. Outcome measures included: global health, asthma, BMI, use of prescribed medication, general development, medical conditions and/or disabilities, special health care needs, and socio-emotional development. Models adjusted for birth factors, social vulnerability, maternal BMI, and breastfeeding.

## RESULTS:

Children born by cesarean delivery were more likely to have a medical condition at 2 to 3 years (odds ratio: 1.33;  $P = .03$ ), use prescribed medication at 6 to 7 years (odds ratio: 1.26;  $P = .04$ ), and have a higher BMI at 8 to 9 years (coefficient: 0.08;  $P = .05$ ), although this last effect was mediated by maternal obesity. Parent-reported quality of life for children born by cesarean delivery was lower at 8 to 9 years (coefficient: -0.08;  $P = .03$ ) but not at younger ages. Contrasting this finding, cesarean delivery was associated with better parent-reported global health at 2 to 3 years (odds ratio: 1.23;  $P = .05$ ) and prosocial skills at age 6 to 7 years (coefficient: 0.09;  $P = .02$ ).

## CONCLUSIONS:

Cesarean delivery was associated with a mix of positive and negative outcomes across early childhood, but overall there were few associations, and these were not consistent across the 5 waves. This study does not support a strong association between cesarean delivery and poorer health or neurodevelopmental outcomes in childhood.

Copyright © 2015 by the American Academy of Pediatrics.

PMID: 26459643 [PubMed - in process]

12.

JAMA. 2015 Dec 1;314(21):2263-70. doi: 10.1001/jama.2015.15553.

[Relationship Between Cesarean Delivery Rate and Maternal and Neonatal Mortality.](#)

Molina G, Weiser TG, Lipsitz SR, Esquivel MM, Uribe-Leitz T, Azad T, Shah N, Semrau K, Berry WR, Gawande AA, Haynes AB.

Abstract

#### IMPORTANCE:

Based on older analyses, the World Health Organization (WHO) recommends that cesarean delivery rates should not exceed 10 to 15 per 100 live births to optimize maternal and neonatal outcomes.

#### OBJECTIVES:

To estimate the contemporary relationship between national levels of cesarean delivery and maternal and neonatal mortality.

#### DESIGN, SETTING, AND PARTICIPANTS:

Cross-sectional, ecological study estimating annual cesarean delivery rates from data collected during 2005 to 2012 for all 194 WHO member states. The year of analysis was 2012. Cesarean delivery rates were available for 54 countries for 2012. For the 118 countries for which 2012 data were not available, the 2012 cesarean delivery rate was imputed from other years. For the 22 countries for which no cesarean rate data were available, the rate was imputed from total health expenditure per capita, fertility rate, life expectancy, percent of urban population, and geographic region.

#### EXPOSURES:

Cesarean delivery rate.

#### MAIN OUTCOMES AND MEASURES:

The relationship between population-level cesarean delivery rate and maternal mortality ratios (maternal death from pregnancy related causes during pregnancy or up to 42 days postpartum per 100,000 live births) or neonatal mortality rates (neonatal mortality before age 28 days per 1000 live births).

#### RESULTS:

The estimated number of cesarean deliveries in 2012 was 22.9 million (95% CI, 22.5 million to 23.2 million). At a country-level, cesarean delivery rate estimates up to 19.1 per 100 live births (95% CI, 16.3 to 21.9) and 19.4 per 100 live births (95% CI, 18.6 to 20.3) were inversely correlated with maternal mortality ratio (adjusted slope coefficient, -10.1; 95% CI, -16.8 to -3.4;  $P = .003$ ) and neonatal mortality rate (adjusted slope coefficient, -0.8; 95% CI, -1.1 to -0.5;  $P < .001$ ), respectively (adjusted for total health expenditure per capita, population, percent of

urban population, fertility rate, and region). Higher cesarean delivery rates were not correlated with maternal or neonatal mortality at a country level. A sensitivity analysis including only 76 countries with the highest-quality cesarean delivery rate information had a similar result: cesarean delivery rates greater than 6.9 to 20.1 per 100 live births were inversely correlated with the maternal mortality ratio (slope coefficient, -21.3; 95% CI, -32.2 to -10.5,  $P < .001$ ). Cesarean delivery rates of 12.6 to 24.0 per 100 live births were inversely correlated with neonatal mortality (slope coefficient, -1.4; 95% CI, -2.3 to -0.4;  $P = .004$ ).

#### CONCLUSIONS AND RELEVANCE:

National cesarean delivery rates of up to approximately 19 per 100 live births were associated with lower maternal or neonatal mortality among WHO member states. Previously recommended national target rates for cesarean deliveries may be too low.

Comment in

Cesarean Delivery Rates: Revisiting a 3-Decades-Old Dogma. [JAMA. 2015]

PMID: 26624825 [PubMed - in process]

13.

JAMA Pediatr. Published online December 14, 2015. doi:10.1001/jamapediatrics.2015.3356

[Antidepressant Use During Pregnancy and the Risk of Autism Spectrum Disorder in Children](#)

Boukhris T, Sheehy O, Mottron L, Bérard A.

#### Abstract

**IMPORTANCE** The association between the use of antidepressants during gestation and the risk of autism spectrum disorder (ASD) in children is still controversial. The etiology of ASD remains unclear, although studies have implicated genetic predispositions, environmental risk factors, and maternal depression.

**OBJECTIVE** To examine the risk of ASD in children associated with antidepressant use during pregnancy according to trimester of exposure and taking into account maternal depression.

**DESIGN, SETTING, AND PARTICIPANTS** We conducted a register-based study of an ongoing population-based cohort, the Québec Pregnancy/Children Cohort, which includes data on all pregnancies and children in Québec from January 1, 1998, to December 31, 2009. A total of 145

456 singleton full-term infants born alive and whose mothers were covered by the Régie de l'assurance maladie du Québec drug plan for at least 12 months before and during pregnancy were included. Data analysis was conducted from October 1, 2014, to June 30, 2015.

**EXPOSURES** Antidepressant exposure during pregnancy was defined according to trimester and specific antidepressant classes.

**MAIN OUTCOMES AND MEASURES** Children with ASD were defined as those with at least 1 diagnosis of ASD between date of birth and last date of follow-up. Cox proportional hazards regression models were used to estimate crude and adjusted hazard ratios with 95% CIs.

**RESULTS** During 904 035.50 person-years of follow-up, 1054 children (0.7%) were diagnosed with ASD; boys with ASD outnumbered girls by a ratio of about 4:1. The mean (SD) age of children at the end of follow-up was 6.24 (3.19) years. Adjusting for potential confounders, use of antidepressants during the second and/or third trimester was associated with the risk of ASD (31 exposed infants; adjusted hazard ratio, 1.87; 95% CI, 1.15-3.04). Use of selective serotonin reuptake inhibitors during the second and/or third trimester was significantly associated with an increased risk of ASD (22 exposed infants; adjusted hazard ratio, 2.17; 95% CI, 1.20-3.93). The risk was persistent even after taking into account maternal history of depression (29 exposed infants; adjusted hazard ratio, 1.75; 95% CI, 1.03-2.97).

**CONCLUSIONS AND RELEVANCE** Use of antidepressants, specifically selective serotonin reuptake inhibitors, during the second and/or third trimester increases the risk of ASD in children, even after considering maternal depression. Further research is needed to specifically assess the risk of ASD associated with antidepressant types and dosages during pregnancy.

14.

Int J Gynaecol Obstet. 2015 Nov;131(2):183-6. doi: 10.1016/j.ijgo.2015.04.048. Epub 2015 Jul

26.

[Effect of perineal massage on the rate of episiotomy and perineal tearing.](#)

Demirel G, Golbasi Z.

Abstract

**OBJECTIVE:**

To examine the effects of perineal massage during active labor on the frequency of episiotomy and perineal tearing.

#### METHODS:

A randomized controlled study was conducted at a center in Sivas, Turkey, between January 1, 2010, and May 31, 2011. Healthy pregnant women presenting for their first or second delivery at 37-42 weeks of pregnancy were enrolled during the first stage of labor. Participants were randomly assigned (1:1) to the massage group (10-minute perineal massage with glycerol four times during the first stage and once during the second stage of labor) or control group (routine care). The frequency of episiotomy and perineal tearing were compared between the groups. Participants and investigators were not masked to group assignment.

#### RESULTS:

Both groups contained 142 participants. Episiotomy was performed among 44 (31.0%) women in the massage group and 99 (69.7%) in the control group ( $P=0.001$ ). Lacerations were recorded among 13 (4.2%) women in the massage group and 6 (4.2%) in the control group ( $P=0.096$ ).

#### CONCLUSION:

Application of perineal massage during active labor decreased the frequency of episiotomy procedures. ClinicalTrials.gov:NCT02201615.

Copyright © 2015 International Federation of Gynecology and Obstetrics. Published by Elsevier Ireland Ltd. All rights reserved.

#### KEYWORDS:

Duration of the second stage of labor; Episiotomy; Perineal laceration; Perineal massage

PMID: 26410801 [PubMed - in process]

15.

Am J Obstet Gynecol. 2015 Nov;213(5):693.e1-6. doi: 10.1016/j.ajog.2015.07.026. Epub 2015 Jul 26.

[Magnetic resonance imaging of acute appendicitis in pregnancy: a 5-year multiinstitutional study.](#)

Burke LM, Bashir MR, Miller FH, Siegelman ES, Brown M, Alobaidy M, Jaffe TA, Hussain SM,

Palmer SL, Garon BL, Oto A, Reinhold C, Ascher SM, Demulder DK, Thomas S, Best S, Borer J, Zhao K, Pinel-Giroux F, De Oliveira I, Resende D, Semelka RC.

Abstract

**OBJECTIVE:**

The purpose of this study was to determine the diagnostic performance of magnetic resonance imaging (MRI) in the diagnosis of acute appendicitis during pregnancy in a multiinstitutional study.

**STUDY DESIGN:**

In this multicenter retrospective study, the cases of pregnant women who underwent MRI evaluation of abdominal or pelvic pain and who had clinical suspicion of acute appendicitis between June 1, 2009, and July 31, 2014, were reviewed. All MRI examinations with positive findings for acute appendicitis were confirmed with surgical pathologic information. Sensitivity, specificity, negative predictive values, and positive predictive values were calculated. Receiver operating characteristic curves were generated, and area under the curve analysis was performed for each participating institution.

**RESULTS:**

Of the cases that were evaluated, 9.3% (66/709) had MRI findings of acute appendicitis. Sensitivity, specificity, accuracy, positive predictive value, and negative predictive values were 96.8%, 99.2%, 99.0%, 92.4%, and 99.7%, respectively. There was no statistically significant difference between centers that were included in the study (pair-wise probability values ranged from 0.12-0.99).

**CONCLUSION:**

MRI is useful and reproducible in the diagnosis of suspected acute appendicitis during pregnancy.

Published by Elsevier Inc.

**KEYWORDS:**

appendicitis; magnetic resonance imaging; pregnancy

PMID: 26215327 [PubMed - in process]

16.

Circulation. 2015 Nov 3;132(18):1726-33. doi: 10.1161/CIRCULATIONAHA.115.015721. Epub 2015 Sep 28.

[Epidemiology and Mechanisms of De Novo and Persistent Hypertension in the Postpartum Period.](#)

Goel A, Maski MR, Bajracharya S, Wenger JB, Zhang D, Salahuddin S, Shahul SS, Thadhani R, Seely EW, Karumanchi SA, Rana S.

Abstract

BACKGROUND:

The pathophysiology of hypertension in the immediate postpartum period is unclear.

METHODS AND RESULTS:

We studied 988 consecutive women admitted to a tertiary medical center for cesarean section of a singleton pregnancy. The angiogenic factors soluble fms-like tyrosine kinase 1 and placental growth factor, both biomarkers associated with preeclampsia, were measured on antepartum blood samples. We then performed multivariable analyses to determine factors associated with the risk of developing postpartum hypertension. Of the 988 women, 184 women (18.6%) developed postpartum hypertension. Of the 184 women, 77 developed de novo hypertension in the postpartum period, and the remainder had a hypertensive disorder of pregnancy in the antepartum period. A higher body mass index and history of diabetes mellitus were associated with the development of postpartum hypertension. The antepartum ratio of soluble fms-like tyrosine kinase 1 to placental growth factor positively correlated with blood pressures in the postpartum period (highest postpartum systolic blood pressure [ $r=0.29$ ,  $P<0.001$ ] and diastolic blood pressure [ $r=0.28$ ,  $P<0.001$ ]). Moreover, the highest tertile of the antepartum ratio of soluble fms-like tyrosine kinase 1 to placental growth factor was independently associated with postpartum hypertension (de novo hypertensive group: odds ratio, 2.25; 95% confidence interval, 1.19-4.25;  $P=0.01$ ; in the persistent hypertensive group: odds ratio, 2.61; 95% confidence interval, 1.12-6.05;  $P=0.02$ ) in multivariable analysis. Women developing postpartum hypertension had longer hospitalizations than those who remained normotensive ( $6.5\pm 3.5$  versus  $5.7\pm 3.4$  days;  $P<0.001$ ).

CONCLUSIONS:

Hypertension in the postpartum period is relatively common and is associated with prolonged hospitalization. Women with postpartum hypertension have clinical risk factors and an antepartum plasma angiogenic profile similar to those found in women with preeclampsia. These data suggest that women with postpartum hypertension may represent a group of women with subclinical or unresolved

preeclampsia.

© 2015 American Heart Association, Inc.

KEYWORDS:

hypertension; postpartum; pre-eclampsia; pregnancy; receptors, vascular endothelial growth factor

PMID: 26416810 [PubMed - in process]