May 2015 Literature Alert

1.

Annals of Internal Medicine. 2015, Vol. 162 Issue 8

Routine Iron Supplementation and Screening for Iron Deficiency Anemia in Pregnancy: A Systematic Review for the U.S. Preventive Services Task Force.

Cantor, AC., Bougatsos, C, Dana, T, Blazina, I, McDonagh M.

Abstract

BACKGROUND:

Routine screening and supplementation for iron deficiency anemia (IDA) in asymptomatic, nonanemic pregnant women could improve maternal and infant health outcomes.

PURPOSE:

Update of a 2006 systematic review by the U.S. Preventive Services Task Force on screening and supplementation for IDA in pregnancy.

DATA SOURCES:

MEDLINE and the Cochrane Library (1996 to August 2014) and reference lists of relevant systematic reviews to identify studies published since 1996.

STUDY SELECTION:

English-language trials and controlled observational studies about effectiveness of screening and routine supplementation for IDA in developed countries.

DATA EXTRACTION:

Data extraction and quality assessment confirmed and dual-rated by a second investigator using prespecified criteria.

DATA SYNTHESIS:

No study directly compared clinical outcomes or harms of screening or not screening pregnant women for IDA. Twelve supplementation trials were included, and no controlled observational studies met inclusion criteria. On the basis of 11 trials, routine maternal iron supplementation had inconsistent effects on rates of cesarean delivery, small size for gestational age, and low birthweight and no effect on maternal quality of life, gestational age, Apgar scores, preterm birth, or infant mortality. Twelve trials reported improvements in maternal hematologic indices, although not all were statistically significant.

Pooled analysis of 4 trials resulted in a statistically significant difference in IDA incidence at term, favoring supplementation (risk ratio, 0.29 [95% CI, 0.17 to 0.49]; I2 = 0%). Maternal iron supplementation did not affect infant iron status at 6 months. Harms, none of which were serious or had long-term consequences, were inconsistently reported in 10 of the trials, with most finding no difference between groups.

LIMITATIONS:

Data from trials in countries with limited generalizability to U.S. populations were included. Studies were methodologically heterogeneous, and some were small and underpowered.

CONCLUSION:

There is inconclusive evidence that routine prenatal supplementation for IDA improves maternal or infant clinical health outcomes, but supplementation may improve maternal hematologic indices.

PRIMARY FUNDING SOURCE:

Agency for Healthcare Research and Quality.

PMID: 25820661 [PubMed - in process]

2.

Annals of Internal Medicine. 2015, Vol. 162 Issue 9

Low-Molecular-Weight Heparin for Women With Unexplained Recurrent Pregnancy Loss.

Schleussner E, Kamin G, Seliger G, Rogenhofer N, et al.

Abstract

BACKGROUND:

A daily injection of low-molecular-weight heparin (LMWH) is often prescribed to women with unexplained recurrent pregnancy loss (RPL), although evidence suggesting a benefit is questionable.

OBJECTIVE:

To determine whether LMWH increases ongoing pregnancy and live-birth rates in women with unexplained RPL.

DESIGN:

Controlled, multicenter trial with randomization using minimization conducted from 2006 to 2013. (ClinicalTrials.gov: NCT00400387).

SETTING:

14 university hospitals and perinatal care centers in Germany and Austria.

PATIENTS:

449 women with at least 2 consecutive early miscarriages or 1 late miscarriage were included during 5 to 8 weeks' gestation after a viable pregnancy was confirmed by ultrasonography.

INTERVENTION:

Women in the control group received multivitamin pills, and the intervention group received vitamins and 5000 IU of dalteparin-sodium for up to 24 weeks' gestation.

MEASUREMENTS:

Primary outcome was ongoing pregnancy at 24 weeks' gestation. Secondary outcomes included the live-birth rate and late pregnancy complications.

RESULTS:

At 24 weeks' gestation, 191 of 220 pregnancies (86.8%) and 188 of 214 pregnancies (87.9%) were intact in the intervention and control groups, respectively (absolute difference, -1.1 percentage points [95% CI, -7.4 to 5.3 percentage points]). The live-birth rates were 86.0% (185 of 215 women) and 86.7% (183 of 211 women) in the intervention and control groups, respectively (absolute difference, -0.7 percentage point [CI, -7.3 to 5.9 percentage points]). There were 3 intrauterine fetal deaths (1 woman had used LMWH); 9 cases of preeclampsia or the hemolysis, elevated liver enzyme level, and low platelet count (HELLP) syndrome (3 women had used LMWH); and 11 cases of intrauterine growth restriction or placental insufficiency (5 women had used LMWH).
LIMITATION:
Placebo injections were not used, and neither trial staff nor patients were blinded.
CONCLUSION:
Daily LMWH injections do not increase ongoing pregnancy or live-birth rates in women with unexplained RPL. Given the burden of the injections, they are not recommended for preventing miscarriage.
PRIMARY FUNDING SOURCE:
Pfizer Pharma.
PMID: 25938990 [PubMed - in process]

3.
J Pediatr Surg. 2015 Apr;50(4):507-10. doi: 10.1016/j.jpedsurg.2014.08.002. Epub 2014 Dec 5.
Postnatal management of prenatally diagnosed biliary cystic malformation.
Tanaka H, Sasaki H, Wada M, Sato T, Kazama T, Nishi K, Kudo H, Nakamura M, Nio M.

Abstract
PURPOSE:
Recent advances in ultrasonography have increased prenatal diagnosis of biliary atresia (BA) and choledochal cyst (CC). These conditions are not easy to distinguish before or just after birth. This study investigated diagnostic and therapeutic problems in prenatal diagnosis of BA and CC.
METHODS:
We retrospectively studied clinical characteristics and progression of hepatobiliary cysts in 10 patients (4 cases of BA, 6 cases of CC) from the time of diagnosis. Chronological changes in cyst size and gallbladder morphology were assessed and measured sequentially by ultrasonography.
RESULTS:
Three cases of BA were type I cyst and 1 case was type III-d. All cases of CC were type Ia. Cyst size decreased between birth and surgery in BA but increased in CC. The gallbladder appeared atrophic in BA. There was no significant difference in gestational age or cyst size at prenatal diagnosis, changes in cyst size between birth and surgery, and degree of liver fibrosis.
CONCLUSIONS:
BA should be suspected if cyst size decreases before and after birth and the gallbladder atrophies after birth. Cholangiography is the only reliable method to differentiate BA from CC. Neonatal surgery is indicated for CC with icterus and liver dysfunction.
Copyright © 2015 Elsevier Inc. All rights reserved.
KEYWORDS:

Biliary atresia; Biliary cystic malformation; Choledochal cyst; Prenatal diagnosis
PMID: 25840051 [PubMed - in process]

4.
Circulation. 2015 Apr 14;131(15):1313-23. doi: 10.1161/CIRCULATIONAHA.114.013051. Epub 2015 Mar 11.
Reduced fetal cerebral oxygen consumption is associated with smaller brain size in fetuses with congenital heart disease.
Sun L, Macgowan CK, Sled JG, Yoo SJ, Manlhiot C, Porayette P, Grosse-Wortmann L, Jaeggi E, McCrindle BW, Kingdom J, Hickey E, Miller S, Seed M.

Abstract
BACKGROUND:
Fetal hypoxia has been implicated in the abnormal brain development seen in newborns with congenital heart disease (CHD). New magnetic resonance imaging technology now offers the potential to investigate the relationship between fetal hemodynamics and brain dysmaturation.
METHODS AND RESULTS:
We measured fetal brain size, oxygen saturation, and blood flow in the major vessels of the fetal circulation in 30 late-gestation fetuses with CHD and 30 normal controls using phase-contrast magnetic resonance imaging and T2 mapping. Fetal hemodynamic parameters were calculated from a combination of magnetic resonance imaging flow and oximetry data and fetal hemoglobin concentrations estimated from population averages. In fetuses with CHD, reductions in umbilical vein oxygen content (P<0.001) and failure of the normal streaming of oxygenated blood from the placenta to the ascending aorta were associated with a mean reduction in ascending aortic saturation of 10% (P<0.001), whereas cerebral blood flow and cerebral oxygen extraction were no different from those in controls. This accounted for the mean 15% reduction in cerebral oxygen delivery (P=0.08) and 32% reduction cerebral Vo2 in CHD fetuses (P<0.001), which were associated with a 13% reduction in fetal brain volume (P<0.001). Fetal brain size correlated with ascending aortic oxygen saturation and cerebral Vo2 (r=0.37, P=0.004).
CONCLUSIONS:
This study supports a direct link between reduced cerebral oxygenation and impaired brain growth in fetuses with CHD and raises the possibility that in utero brain development could be improved with maternal oxygen therapy.
© 2015 American Heart Association, Inc.
KEYWORDS:
brain; heart diseases; hemodynamics; magnetic resonance imaging; pediatrics
PMID: 25762062 [PubMed - in process] PMCID: PMC4398654 [Available on 2016-04-14]

5.
Circulation. 2015 Apr 28;131(17):1471-6. doi: 10.1161/CIRCULATIONAHA.114.012749. Epub 2015 Mar 5.
Association between newborn birth weight and the risk of postpartum maternal venous thromboembolism: a population-based case-control study.

Blondon M, Quon BS, Harrington LB, Bounameaux H, Smith NL.

Abstract
BACKGROUND:
Postpartum venous thromboembolism (VTE) is a potentially fatal and preventable event leading to substantial short- and long-term morbidity. We sought to evaluate whether the delivery of term newborns of low or high birth weight was associated with greater risks of VTE.
METHODS AND RESULTS:
In a population-based case-control study conducted in Washington State from 1987 through 2011, cases of hospitalized VTE within 3 months of delivery were identified by using selected International Classification of Diseases, Ninth Revision, Clinical Modification codes. Controls were randomly selected postpartum women without VTE, matched on birth year. Birth weight and other maternal and pregnancy characteristics were extracted from birth certificate data. Among term live singleton deliveries, we compared the risk of VTE for mothers of newborns of low and high birth weights (<2500 g and >4000 g, respectively) versus mothers of newborns of normal birth weight (2500-4000 g). Logistic regression models were adjusted for maternal age, race, education, body mass index, parity, delivery methods, gestational length, smoking, gestational diabetes mellitus, and preeclampsia. Patients with VTE (n=547) were older, had a higher body mass index, and experienced more pregnancy-related complications than controls (n=9482). In comparison with mothers of newborns with normal birth weight, mothers of newborns with low birth weight had a 3-fold increased risk of VTE, which persisted after multivariable adjustment (odds ratio, 2.98; 95% confidence interval, 1.80-4.93). Mothers of newborns with high birth weight had only a slightly increased risk of VTE, which was attenuated after multivariable adjustment (odds ratio, 1.26; 95% confidence interval, 0.99-1.61).
CONCLUSIONS:
The delivery of a newborn with low birth weight is associated with a 3-fold increased risk of maternal postpartum VTE. This should be considered when assessing VTE risk at delivery.
© 2015 American Heart Association, Inc.
KEYWORDS:
embolism; epidemiology; pregnancy; risk factors; thrombosis
PMID: 25745022 [PubMed - in process]

6.
Am J Obstet Gynecol. 2015 Apr;212(4):485.e1-485.e10. doi: 10.1016/j.ajog.2014.10.1097. Epub 2014 Oct 30.
17 alpha-hydroxyprogesterone caproate does not prolong pregnancy or reduce the rate of preterm birth in women at high risk for preterm delivery and a short cervix: a randomized controlled trial.
Winer N, Bretelle F, Senat MV, Bohec C, Deruelle P, Perrotin F, Connan L, Vayssière C, Langer B, Capelle M, Azimi S, Porcher R, Rozenberg P; Groupe de Recherche en Obstétrique et Gynécologie.

Abstract
OBJECTIVE:

The objective of the study was to evaluate the efficacy of 17 alpha-hydroxyprogesterone caproate (17OHP-C) in prolonging gestation in patients with a short cervix and other risk factors for preterm delivery, such as previous preterm birth, cervical surgery, uterine anomalies, or prenatal diethylstilbestrol (DES) exposure.
STUDY DESIGN:
This open-label, multicenter, randomized controlled trial included asymptomatic singleton pregnancies from 20(+0) through 31(+6) weeks of gestation with a cervical length less than 25 mm and a history of preterm delivery or cervical surgery or uterine malformation or prenatal DES exposure. Randomization assigned them to receive (or not) 500 mg of intramuscular 17OHP-C weekly until 36 weeks. The primary outcome was time from randomization to delivery.
RESULTS:
After enrolling 105 patients, an interim analysis demonstrated the lack of efficacy of 17OHP-C in prolonging pregnancy. The study was discontinued because of futility. The groups were similar for maternal age, body mass index, parity, gestational age at inclusion, history of uterine anomalies, DES syndrome, previous preterm delivery or midtrimester abortion, and cervical length at randomization. The enrollment-to-delivery interval did not differ between patients allocated to 17OHP-C (n = 51) and those allocated to the control group (n = 54) (median [interquartile range] time to delivery: 77 [54-103] and 74 [52-99] days, respectively). The rate of preterm delivery less than 37 (45% vs 44%, P > .99), less than 34 (24% vs 30%, P = .51), or less than 32 (14% vs 20%, P = .44) weeks was similar in patients allocated to 17OHP-C and those in the control group.
CONCLUSION:
17OHP-C did not prolong pregnancy in women with singleton gestations, a sonographic short cervix, and other risk factors of preterm delivery (prior history, uterine malformations, cervical surgery, or prenatal DES exposure).
Copyright © 2015 Elsevier Inc. All rights reserved.
KEYWORDS:
17 alpha-hydroxyprogesterone caproate; cervical length; prematurity; preterm birth; preterm labor; progesterone
PMID: 25448515 [PubMed - in process]

7.
Prenat Diagn. 2015 Apr;35(4):325-30. doi: 10.1002/pd.4525. Epub 2015 Feb 16.
Prenatal detection of congenital heart disease in a low risk population undergoing first and second trimester screening.
Jørgensen DE, Vejlstrup N, Jørgensen C, Maroun LL, Steensberg J, Hessellund A, Jørgensen FS, Larsen T, Shalmi AC, Skibsted L, Zingenberg H, Ekelund C, Tabor A.

Abstract
OBJECTIVES:
The prenatal detection rate of congenital heart disease (CHD) is low compared with other fetal malformations. Our aim was to evaluate the prenatal detection of CHD in Eastern Denmark.
METHODS:

Fetuses and infants diagnosed with CHD in the period 01.01.2008-31.12.2010 were assessed regarding prenatal detection rate and accuracy, as well as correlation with nuchal translucency (NT) thickness.
RESULTS:
Out of 86 121 infants, 831 were born with CHD (0.96%). The prenatal detection rate of 'all CHD' was 21.3%, of 'Major CHD' 47.4%. Full agreement between prenatal and postnatal/autopsy findings was found in 96% of prenatally detected diagnoses. An NT thickness >95(th) percentile was found in 15.0% fetuses with 'Major CHD'. Of 'Major CHDs' detected prenatally, 77% were picked up at the time of the malformation scan at weeks 18-21.
CONCLUSIONS:
Nearly half of 'Major CHDs' were detected prenatally. The prenatal cardiac diagnoses showed a high degree of accuracy. Increased NT thickness as a screening tool for CHD performed moderately but is an important high risk group for specialist examination. A minority of the prenatally detected CHDs was identified because of extra scans performed in high risk pregnancies. © 2014 John Wiley & Sons, Ltd.
© 2014 John Wiley & Sons, Ltd.
PMID: 25352400 [PubMed - in process]

8.
JAMA. 2015 Apr 14;313(14):1425-34. doi: 10.1001/jama.2015.2707.
Association of maternal diabetes with autism in offspring.
Xiang AH, Wang X, Martinez MP, Walthall JC, Curry ES, Page K, Buchanan TA, Coleman K, Getahun D.

Abstract
IMPORTANCE:
Information about the association of maternal diabetes and autism spectrum disorders (ASDs) in offspring is limited, with no report on the importance of timing of exposure during gestation.
OBJECTIVE:
To assess ASD risk associated with intrauterine exposure to preexisting type 2 diabetes and gestational diabetes mellitus (GDM) by gestational age at GDM diagnosis.
DESIGN, SETTING, AND PATIENTS:
Retrospective longitudinal cohort study including 322 323 singleton children born in 1995-2009 at Kaiser Permanente Southern California (KPSC) hospitals. Children were tracked from birth until the first of the following: date of clinical diagnosis of ASD, last date of continuous KPSC health plan membership, death due to any cause, or December 31, 2012. Relative risks of ASD were estimated by hazard ratios (HRs) using Cox regression models adjusted for birth year.
EXPOSURES:
Maternal preexisting type 2 diabetes (n = 6496), GDM diagnosed at 26 weeks' gestation or earlier (n = 7456) or after 26 weeks' gestation (n = 17 579), or no diabetes (n = 290 792) during the index pregnancy.
MAIN OUTCOMES AND MEASURES:
Clinical diagnosis of ASD in offspring.
RESULTS:

During follow-up, 3388 children were diagnosed as having ASD (115 exposed to preexisting type 2 diabetes, 130 exposed to GDM at ≤26 weeks, 180 exposed to GDM at >26 weeks, and 2963 unexposed). Unadjusted annual ASD incidences were 3.26, 3.02, 1.77, and 1.77 per 1000 among children of mothers with preexisting type 2 diabetes, GDM diagnosed at 26 weeks or earlier, GDM diagnosed after 26 weeks, and no diabetes, respectively. The birth year-adjusted HRs were 1.59 (95% CI, 1.29-1.95) for preexisting type 2 diabetes, 1.63 (95% CI, 1.35-1.97) for GDM diagnosed at 26 weeks or earlier, and 0.98 (95% CI, 0.84-1.15) for GDM diagnosed after 26 weeks relative to no exposure. After adjustment for maternal age, parity, education, household income, race/ethnicity, history of comorbidity, and sex of the child, maternal preexisting type 2 diabetes was not significantly associated with risk of ASD in offspring (HR, 1.21; 95% CI, 0.97-1.52), but GDM diagnosed at 26 weeks or earlier remained so (HR, 1.42; 95% CI, 1.15-1.74). Antidiabetic medication exposure was not independently associated with ASD risk. Adjustment for a mother or older sibling with ASD in the full cohort and for maternal smoking, prepregnancy body mass index, and gestational weight gain in the subset with available data (n = 68 512) did not affect the results.
CONCLUSIONS AND RELEVANCE:
In this large, multiethnic clinical cohort of singleton children born at 28 to 44 weeks' gestation, exposure to maternal GDM diagnosed by 26 weeks' gestation was associated with risk of ASD in offspring.
PMID: 25871668 [PubMed - indexed for MEDLINE]

9.
J Perinatol. 2015 Apr;35(4):258-62. doi: 10.1038/jp.2014.216. Epub 2014 Dec 4.
Trial of labor after cesarean: attempted operative vaginal delivery versus emergency repeat cesarean, a prospective national cohort study.
Rietveld AL, Kok N, Kazemier BM, de Groot CJ, Teunissen PW.

Abstract
OBJECTIVE:
To compare neonatal and maternal outcomes of attempted operative vaginal delivery with emergency repeat cesarean in trial of labor after cesarean.
STUDY DESIGN:
Prospective 8-year cohort analysis using the Netherlands Perinatal Registry, including women with one prior cesarean giving birth through operative vaginal delivery or emergency repeat cesarean (n=12860). A multivariate analysis was performed. Odds ratios (OR) and adjusted odds ratios (aOR) were calculated.
RESULTS:
Attempted operative vaginal delivery increases the risk on neonatal birth trauma (aOR 15.0 (5.94 to 38.0)) and postpartum hemorrhage (aOR 2.59 (2.17 to 3.09)), and lowers the risk of wet lung syndrome (aOR 0.53 (0.35 to 0.80)) and neonatal convulsions (aOR 0.47 (0.24 to 0.91)).
CONCLUSION:
We found a highly increased risk of neonatal birth trauma and a moderately increased risk of postpartum hemorrhage but slightly lower risks of wet lung syndrome and neonatal convulsions after attempted operative vaginal delivery compared with emergency repeat cesarean.
PMID: 25474557 [PubMed - in process]

10.
J Ultrasound Med. 2015 Apr;34(4):553-7. doi: 10.7863/ultra.34.4.553.
Chorionic bump in pregnant patients and associated live birth rate: a systematic review and meta-analysis.
Arleo EK, Dunning A, Troiano RN.

Abstract
OBJECTIVES:
A chorionic bump on first-trimester sonography has been considered a risk factor for nonviability in pregnant patients with this rare finding, although the strength of this association has recently been questioned. We performed a systematic review and meta-analysis to summarize the association between a chorionic bump and nonviability.
METHODS:
A comprehensive literature search was performed. We included all studies except case reports. A meta-analysis was performed using a random-effects model.
RESULTS:
After screening 5 studies, 2 studies with a total of 67 patients met inclusion criteria. These were combined with a study (n = 52) from our institution. Overall, the live birth rate was 62% (74 of 119). Fifty-one chorionic bump pregnancies were otherwise normal (ie, pregnancies in which a gestational sac, a yolk sac, and an embryo with a heartbeat was seen at some point), and in this subset, the live birth rate was 83% (42 of 51). There was no significant relationship found between vaginal bleeding and live birth (P = .857); there was no significant difference in bump volume between live birth and no live birth (P = .198); and for the subset analysis of pooled odds ratios for the relationship between live birth and history of infertility, there was no significant relationship found (P = .186).
CONCLUSIONS:
A chorionic bump remains a risk factor for nonviability in pregnancy; however, if the pregnancy is otherwise normal, then most result in live birth.
© 2015 by the American Institute of Ultrasound in Medicine.
KEYWORDS:
chorionic bump; live birth rate; meta-analysis; obstetric ultrasound
PMID: 25792569 [PubMed - in process]

11.
J Ultrasound Med. 2015 Apr;34(4):595-9. doi: 10.7863/ultra.34.4.595.
Outcome of cesarean scar pregnancies diagnosed sonographically in the first trimester.
Michaels AY, Washburn EE, Pocius KD, Benson CB, Doubilet PM, Carusi DA.

Abstract
OBJECTIVES:
The purpose of this study was to determine the outcome of cesarean scar pregnancies diagnosed during the first trimester.

METHODS:
We retrospectively identified all cesarean scar implantation pregnancies diagnosed by sonography before 14 weeks' gestation between 2000 and 2012 at our institution. We reviewed the patients' sonograms and medical records and recorded sonographic findings and pregnancy outcomes.
RESULTS:
Thirty-four cases met study entry criteria. Ten patients presented with no embryonic cardiac activity, of whom 7 underwent interventions, and 3 were expectantly managed. One of the former 7 and none of the latter 3 required hysterectomy for bleeding. Among the 24 patients with embryonic cardiac activity, 8 were managed expectantly: 5 (62.5%) ultimately delivered a live-born neonate, 3 (60.0%) of whom required hysterectomy due to placenta accreta; and 3 had fetal demise. Sixteen of the 24 underwent interventions, 2 opting for gravid hysterectomy (10 and 11 weeks' gestation, respectively) and 14 treated by a minimally invasive method: intrasac potassium chloride injection (3 cases); intrasac potassium chloride injection plus intramuscular methotrexate (4 cases); sonographically guided dilation and curettage (6 cases); and laparascopic resection (1 case). None of the latter 14 subsequently required hysterectomy.
CONCLUSIONS:
If a woman has a first-trimester diagnosis of a cesarean scar implantation pregnancy and embryonic cardiac activity is present, expectant management offers the possibility of delivering a live-born neonate (62.5% in our study) but carries a substantial likelihood of hysterectomy at delivery due to placenta accreta (37.5% in our study), whereas minimally invasive therapy that interrupts the pregnancy largely eliminates the need for hysterectomy.
© 2015 by the American Institute of Ultrasound in Medicine.
KEYWORDS:
accreta; cesarean scar pregnancy; minimally invasive therapy; obstetric ultrasound
PMID: 25792574 [PubMed - in process]

12.
BJOG. 2015 Apr;122(5):712-8. doi: 10.1111/1471-0528.13188. Epub 2014 Nov 27.
Vaginal progesterone in women with twin gestations complicated by short cervix: a retrospective cohort study.
Brubaker SG, Pessel C, Zork N, Gyamfi-Bannerman C, Ananth CV.

Abstract
OBJECTIVE:
To determine whether the use of vaginal progesterone in twin gestations with a cervical length (CL) of ≤2.5 cm is associated with a reduced risk of preterm delivery.
DESIGN:
Retrospective cohort study.
SETTING:
Tertiary-care medical centre in New York City.
POPULATION:
Women with twin gestations undergoing sonographic cervical length screening.

METHODS:
Women with twin gestations with a CL of ≤2.5 cm between 16 and 32 weeks of gestation, and who delivered at our centre between 2010 and 2013, were included. We evaluated the impact of vaginal progesterone on the risk of preterm delivery using a Cox proportional hazard model, adjusted for potential confounding factors. We then performed a propensity score analysis using inverse probability of treatment weights to account for treatment selection bias and confounding.
MAIN OUTCOME MEASURE:
Delivery prior to 35 weeks of gestation.
RESULTS:
Of the 167 twin pregnancies analysed, 61 (35.7%) were treated with vaginal progesterone. The hazard ratio (HR) of delivery prior to 35 weeks of gestation in the vaginal progesterone group, compared with the no vaginal progesterone group, was 1.8 (95% confidence interval, 95% CI 1.5-3.1) in the unadjusted analysis, 1.4 (95% CI 0.7-3.2) following multivariable adjustment for confounding factors, and 1.5 (95% CI 1.1-2.3) using propensity score methods.
CONCLUSION:
Women with more risk factors for preterm delivery were more likely to be treated with vaginal progesterone. After statistically correcting for this with propensity score methods, we found that vaginal progesterone therapy in twin pregnancies with a CL ≤2.5 cm was associated with an increased risk of preterm delivery.
© 2014 Royal College of Obstetricians and Gynaecologists.
KEYWORDS:
Propensity score; short cervix; twins; vaginal progesterone
PMID: 25428801 [PubMed - in process]

13.
Obstet Gynecol. 2015 Apr;125(4):825-32. doi: 10.1097/AOG.0000000000000740.
Association of isolated polyhydramnios at or beyond 34 weeks of gestation and pregnancy outcome.
Aviram A, Salzer L, Hiersch L, Ashwal E, Golan G, Pardo J, Wiznitzer A, Yogev Y.

Abstract
OBJECTIVE:
To evaluate pregnancy outcome among women with isolated polyhydramnios at admission for labor at or beyond 34 weeks of gestation.
METHODS:
Retrospective cohort study at a tertiary medical center between 2007 and 2012. Isolated polyhydramnios was defined as amniotic fluid index (AFI) greater than 25 cm at admission in the absence of gestational or pregestational diabetes mellitus or fetal structural or chromosomal anomalies. Women with isolated polyhydramnios were compared with women with a normal AFI (5-25 cm).
RESULTS:
Overall, 31,376 women were eligible for analysis, of whom 215 (0.7%) had isolated polyhydramnios and 31,161 normal AFI. Women with isolated polyhydramnios had higher rates of labor induction (7.9% compared with 4.8%, P=.04) and cesarean delivery (12.1% compared with 5.1%, P<.001). They also had

higher rates of placental abruption (0.9% compared with 0.2%, P=.02), abnormal or intermediate fetal heart rate (FHR) tracings (7.0% compared with 3.2%, P=.002), and prolonged first stage of delivery (6.0% compared with 1.4%, P<.001). Isolated polyhydramnios was also associated with higher rates of shoulder dystocia (1.9% compared with 0.3%, P<.001) and respiratory distress syndrome (0.5% compared with 0.03%, P=.001). On a multiple logistic regression model, isolated polyhydramnios was an independent risk factor for labor induction (adjusted odds ratio [OR] 1.7, 95% confidence interval [CI] 1.01-2.8), cesarean delivery (adjusted OR 2.6, 95% CI 1.7-4.0), prolonged first stage of delivery (adjusted OR 3.6, 95% CI 1.97-6.7), abnormal or intermediate FHR tracings (adjusted OR 2.6, 95% CI 1.6-4.5), placental abruption (adjusted OR 8.4, 95% CI 2.00-35.4), shoulder dystocia (adjusted OR 3.4, 95% CI 1.2-9.7), and respiratory distress syndrome (adjusted OR 38.9, 95% CI 4.6-332.6). Mild isolated polyhydramnios (AFI 25.1-30.0) was independently associated with cesarean delivery, prolonged first stage of delivery, placental abruption, abnormal or intermediate FHR tracings, and shoulder dystocia.
CONCLUSION:
Isolated polyhydramnios at admission for labor at or beyond 34 weeks of gestation is associated with adverse obstetric and neonatal outcomes.
PMID: 25751210 [PubMed - in process]

14.
Pediatrics. 2015 Apr;135(4):e818-25. doi: 10.1542/peds.2014-3556. Epub 2015 Mar 2.
Late preterm birth and neurocognitive performance in late adulthood: a birth cohort study.
Heinonen K, Eriksson JG, Lahti J, Kajantie E, Pesonen AK, Tuovinen S, Osmond C, Raikkonen K.

Abstract
OBJECTIVES:
We studied if late preterm birth (34 weeks 0 days-36 weeks 6 days of gestation) is associated with performance on the Consortium to Establish a Registry for Alzheimer's Disease Neuropsychological Battery (CERAD-NB) in late adulthood and if maximum attained lifetime education moderated these associations.
METHODS:
Participants were 919 Finnish men and women born between 1934 and 1944, who participated in the Helsinki Birth Cohort Study. They underwent the CERAD-NB at a mean age of 68.1 years. Data regarding gestational age (late preterm versus term) were extracted from hospital birth records, and educational attainment data were gathered from Statistics Finland.
RESULTS:
After adjustment for major confounders, those born late preterm scored lower on word list recognition (mean difference: -0.33 SD; P = .03) than those born at term. Among those who had attained a basic or upper secondary education, late preterm birth was associated with lower scores on word list recognition, constructional praxis, constructional praxis recall, clock drawing, Mini-Mental State Examination, and memory total and CERAD total 2 compound scores (mean differences: >0.40 SD; P values <.05), and had a 2.70 times higher risk of mild cognitive impairment (Mini-Mental State Examination score: <26 points) (P = .02). Among those with tertiary levels of education, late preterm birth was not associated with CERAD-NB scores.

CONCLUSIONS:
Our findings offer new insight into the lifelong consequences of late preterm birth, and they add late preterm birth as a novel risk factor to the list of neurocognitive impairment in late adulthood. Our findings also suggest that attained lifetime education may mitigate aging-related neurocognitive impairment, especially among those born late preterm.
Copyright © 2015 by the American Academy of Pediatrics.
KEYWORDS:
education; epidemiology; follow-up studies; mild cognitive impairment; neurocognitive aging; neuropsychology; premature; premature birth; preterm
PMID: 25733746 [PubMed - in process]

15.
N Engl J Med. 2015 Apr 23;372(17):1639-45. doi: 10.1056/NEJMoa1408408. Epub 2015 Apr 1.
Copy-number variation and false positive prenatal aneuploidy screening results.
Snyder MW, Simmons LE, Kitzman JO, Coe BP, Henson JM, Daza RM, Eichler EE, Shendure J, Gammill HS.

Abstract
Investigations of noninvasive prenatal screening for aneuploidy by analysis of circulating cell-free DNA (cfDNA) have shown high sensitivity and specificity in both high-risk and low-risk cohorts. However, the overall low incidence of aneuploidy limits the positive predictive value of these tests. Currently, the causes of false positive results are poorly understood. We investigated four pregnancies with discordant prenatal test results and found in two cases that maternal duplications on chromosome 18 were the likely cause of the discordant results. Modeling based on population-level copy-number variation supports the possibility that some false positive results of noninvasive prenatal screening may be attributable to large maternal copy-number variants. (Funded by the National Institutes of Health and others.).
PMID: 25830323 [PubMed - indexed for MEDLINE] PMCID: PMC4411081 [Available on 2015-10-23]