August 2015 Literature Alert

1.

Int J Gynaecol Obstet. 2015 Jul;130(1):3-9. doi: 10.1016/j.ijgo.2015.01.011. Epub 2015 Mar 25.
A meta-analysis of maternal and fetal outcomes of pregnancy after bariatric surgery.
Yi XY, Li QF, Zhang J, Wang ZH.

Abstract
BACKGROUND:
The effects of bariatric surgery (BS) on outcomes in subsequent pregnancies are unclear.
OBJECTIVES:
To compare maternal and fetal outcomes among women who become pregnant after BS and obese women who have not undergone BS before pregnancy.
SEARCH STRATEGY:
PubMed and Embase were searched for relevant reports, and the reference lists of identified articles were hand-searched.
SELECTION CRITERIA:
Cohort studies that compared outcomes among women who had undergone any type of BS and obese women who had not undergone surgery were included when results were reported as risk ratios or odds ratios (ORs).
DATA COLLECTION AND ANALYSIS:
Summary ORs were estimated using a random effects model.
MAIN RESULTS:
Eleven studies were included. Compared with obese women who had not undergone BS, women who had undergone BS had significantly lower odds of gestational diabetes (OR 0.31; 95% CI 0.15-0.65), hypertensive disorders (OR 0.42; 95% CI 0.23-0.78), and macrosomia (OR 0.40; 95% CI 0.24-0.67). However, their odds of small-for-gestational-age newborns were increased (OR 2.16; 95% CI 1.28-3.66). No significant differences were recorded for cesarean, postpartum hemorrhage, and preterm delivery.
CONCLUSIONS:
BS reduces the odds of some adverse maternal and fetal outcomes among obese women.

KEYWORDS:
Bariatric surgery; Meta-analysis; Obesity; Outcome; Pregnancy
PMID: 25863541

2.

J Pediatr. 2015 Jul;167(1):52-57.e3. doi: 10.1016/j.jpeds.2015.02.052. Epub 2015 Apr 8.
Safety of Early High-Dose Recombinant Erythropoietin for Neuroprotection in Very Preterm Infants.
Fauchère JC, Koller BM, Tschopp A, Dame C, Ruegger C, Bucher HU; Swiss Erythropoietin Neuroprotection Trial Group.

Abstract
OBJECTIVE:
To investigate the safety and short term outcome of high dose recombinant human erythropoietin (rhEpo) given shortly after birth and subsequently over the first 2 days for neuroprotection to very preterm infants.
STUDY DESIGN:
Randomized, double masked phase II trial. Preterm infants (gestational age 26 0/7-31 6/7 weeks) were given rhEpo (nt = 229; 3000 U/kg body weight) or NaCl 0.9% (nc = 214) intravenously at 3, 12-18, and 36-42 hours after birth.
RESULTS:
There were no relevant differences between the groups for short-term outcomes such as mortality, retinopathy of prematurity, intraventricular hemorrhage, sepsis, necrotizing enterocolitis, and bronchopulmonary dysplasia. At day 7-10, we found significantly higher hematocrit values, reticulocyte, and white blood cell counts, and a lower platelet count in the rhEpo group.
CONCLUSIONS:
Early high-dose rhEpo administration to very premature infants is safe and causes no excess in mortality or major adverse events.
TRIAL REGISTRATION:
ClinicalTrials.gov: NCT00413946.

PMID: 25863661

3.

J Pediatr. 2015 Jul;167(1):58-63.e1. doi: 10.1016/j.jpeds.2015.02.035. Epub 2015 Apr 1.
Cerebral Palsy after Neonatal Encephalopathy: How Much Is Preventable?
Garfinkle J, Wintermark P, Shevell MI, Platt RW, Oskoui M; Canadian Cerebral Palsy Registry.

Abstract
OBJECTIVES:
To determine the expected proportion of term cerebral palsy (CP) after neonatal encephalopathy (NE) that could theoretically be prevented by hypothermia and elucidate the perinatal factors associated with CP after NE in those who do not meet currently used clinical criteria required to qualify for hypothermia ("cooling criteria").
STUDY DESIGN:
Using the Canadian CP Registry, we categorized children born at ≥36 weeks with birth weight ≥1800 g with CP after moderate or severe NE according to the presence or absence of cooling criteria. Maternal, perinatal, postnatal, and placental factors were compared between the 2 groups. A number needed to treat of 8 (95% CI 6-17) to prevent one case of CP was used for calculations.
RESULTS:

Among the 543 term-born children with CP, 155 (29%) had moderate or severe NE. Sixty-four of 155 (41%) met cooling criteria and 91 of 155 (59%) did not. Shoulder dystocia was more common in those who did not meet cooling criteria (OR 8.8; 95% CI 1.1-71.4). Low birth weights (20% of all singletons), small placentas (42%), and chorioamnionitis (13%) were common in both groups.
CONCLUSIONS:
The majority of children with CP after NE did not meet cooling criteria. An estimated 5.1% (95% CI 2.4%-6.9%) of term CP after NE may be theoretically prevented with hypothermia. Considering shoulder dystocia as an additional criterion may help recognize more neonates who could potentially benefit from cooling. In all cases, a better understanding of the antenatal processes underlying NE is essential in reducing the burden of CP.

PMID: 25841543

4.

N Engl J Med. 2015 Jul 23;373(4):349-56. doi: 10.1056/NEJMoa1415227. Epub 2015 Jul 8.
Paternally Inherited IGF2 Mutation and Growth Restriction.
Begemann M, Zirn B, Santen G, Wirthgen E, Soellner L, Büttel HM, Schweizer R, van Workum W, Binder G, Eggermann T.

Abstract
In humans, mutations in IGF1 or IGF1R cause intrauterine and postnatal growth restriction; however, data on mutations in IGF2, encoding insulin-like growth factor (IGF) II, are lacking. We report an IGF2 variant (c.191C→A, p.Ser64Ter) with evidence of pathogenicity in a multigenerational family with four members who have growth restriction. The phenotype affects only family members who have inherited the variant through paternal transmission, a finding that is consistent with the maternal imprinting status of IGF2. The severe growth restriction in affected family members suggests that IGF-II affects postnatal growth in addition to prenatal growth. Furthermore, the dysmorphic features of affected family members are consistent with a role of deficient IGF-II levels in the cause of the Silver-Russell syndrome. (Funded by Bundesministerium für Bildung und Forschung and the European Union.).
PMID: 26154720 [PubMed - indexed for MEDLINE]

5.

Obstet Gynecol. 2015 Jul;126(1):61-6. doi: 10.1097/AOG.0000000000000864.
Second-Trimester Cervical Length Screening Among Asymptomatic Women: An Evaluation of Risk-Based Strategies.
Miller ES, Tita AT, Grobman WA.

Abstract
OBJECTIVE:
To estimate whether there are demographic or clinical characteristics that are associated with the likelihood of having a short cervix and whether these characteristics can be used to optimize cervical length screening.
METHODS:

This is a cohort study of women with a singleton gestation without a history of spontaneous preterm birth who underwent routine transvaginal second-trimester cervical length screening. Seven risk factors for preterm birth were compared by cervical length status. A multivariable logistic regression was performed to identify independent risk factors for a short cervix (cervical length 2.5 cm or less). Different prediction models for a short cervix, based on the number of risk factors present, were developed and test characteristics for cervical length assessment for different risk-based screening approaches were calculated.
RESULTS:
Of the 18,250 women screened, 164 (0.9%) had a short cervix. Maternal age and conception by in vitro fertilization were not significantly associated with a short cervix. However, black (adjusted odds ratio [OR] 3.77, 95% confidence interval [CI] 2.42-5.87) and Hispanic (adjusted OR 1.73, 95% CI 1.10-2.74) race-ethnicity, current tobacco use (adjusted OR 3.67, 95% CI 1.56-8.62), prior indicated preterm birth (adjusted OR 2.26, 95% CI 1.26-4.05), and having a prior cervical excisional procedure (adjusted OR 2.96, 95% CI 1.86-4.70) were independent risk factors for a short cervix. If only women with any of these variables present were offered transvaginal cervical length screening, the specificity increases from 62.8% for universal screening to 96.5% with a risk-based approach. The sensitivity with one variable present to offer transvaginal scanning was 62.8% and with two factors 14%.
CONCLUSION:
Limiting cervical length screening to women with at least one of the identified risk factors for a short cervix substantially decreases the number of ultrasonograms for cervical length assessment. However, this strategy results in nearly 40% of women with a short cervix not being ascertained.
LEVEL OF EVIDENCE: II.
PMID: 26241257 [PubMed - in process]

6.

Obstet Gynecol. 2015 Jul;126(1):67-73. doi: 10.1097/AOG.0000000000000865.
Adverse Pregnancy Outcomes Using The International Association of the Diabetes and Pregnancy Study Groups Criteria: Glycemic Thresholds and Associated Risks.
Sacks DA, Black MH, Li X, Montoro MN, Lawrence JM.

Abstract
OBJECTIVE:
To compare the risks of selected adverse pregnancy outcomes among untreated women who met The International Association of the Diabetes and Pregnancy Study Groups (IADPSG)-defined glucose criteria at two different thresholds.
METHODS:
A retrospective cohort study of women tested for gestational diabetes mellitus (GDM) with the 75-g 2-hour glucose tolerance test (GTT) who delivered a live singleton neonate. Data of women who were treated because they met institutional criteria defining GDM (at least two GTT results greater than or equal to fasting 100 mg/dL, 1-hour 195 mg/dL, and 2-hour 160 mg/dL) were excluded. The data of the remaining women were analyzed in three groups. The prevalence of selected adverse pregnancy outcomes was compared for those with no GDM ("no GDM," n=7,943); those at least one of whose results were fasting 92-94 mg/dL, 1-hour 180-190 mg/dL, or 2-hour 153-161 mg/dL ("GDM-1," n=771); and those at least one of whose results were greater than or equal to fasting 95 mg/dL, 1-hour 191 mg/dL, or 2-hour 162 mg/dL ("GDM-2," n=1,121).
RESULTS:

Of the 9,835 women, 1,892 (19.2%) met criteria for GDM, of whom 771 (40.8%) were categorized as GDM-1 and 1,121 (59.2%) GDM-2. After adjustment for confounders, women with GDM-2 were at significantly greater risk for preeclampsia or eclampsia, preterm delivery, primary cesarean delivery, shoulder dystocia, higher birth weight, ponderal index, large for gestational age, transient tachypnea, and neonatal hypoglycemia than women without GDM. Only birth weight and large for gestational age were significantly greater in the GDM-1 compared with the no GDM group.
CONCLUSION:
Fewer adverse outcomes are found at lower levels of the IADPSG-defined glucose intolerance spectrum. Determining whether these patients will benefit from treatment will require a randomized controlled trial.
LEVEL OF EVIDENCE: II.
PMID: 26241258 [PubMed - in process]

7.

BJOG. 2015 Jul;122(8):1092-100. doi: 10.1111/1471-0528.13057. Epub 2014 Aug 20.
Cardiovascular disease risk is only elevated in hypertensive, formerly preeclamptic women.
Breetveld NM, Ghossein-Doha C, van Kuijk S, van Dijk AP, van der Vlugt MJ, Heidema WM, Scholten RR, Spaanderman M.

Abstract
OBJECTIVE:
To analyse the predicted 10- and 30-year risk scores for cardiovascular disease (CVD) in patients who experienced preeclampsia (PE) 5-10 years previously compared with healthy parous controls.
DESIGN:
Observational study.
SETTING:
Tertiary referral hospital in the Netherlands.
POPULATION:
One hundred and fifteen patients with a history of PE and 50 controls. PE patients were categorised into two groups, hypertensive (n = 21) and normotensive (n = 94), based on use of antihypertensive medication, and next categorised into subgroups based on the onset of PE: early-onset PE (n = 39) and late-onset PE (n = 76).
METHODS:
All participants underwent cardiovascular risk screening 5-10 years after index pregnancy. We measured body mass, height and blood pressure. Blood was analysed for fasting glucose, insulin and lipid levels. All participants completed a validated questionnaire. The 10- and 30-year Framingham risk scores were calculated and compared.
MAIN OUTCOME MEASURES:
Estimated Framingham 10- and 30-year risk scores for CVD.
RESULTS:
The overall 10- and 30-year CVD median risks weighing subjects' lipids were comparable between formerly PE women and controls; 1.6 versus 1.5% (P = 0.22) and 9.0 versus 9.0% (P = 0.49), respectively. However, hypertensive formerly PE women have twice the CVD risk as normotensive formerly PE women: 10- and 30-year CVD median risks were 3.1 versus 1.5% (P < 0.01) and 19.0% versus 8.0% (P < 0.01), respectively. Risk estimates based on BMI rather than lipid profile show comparable results. Early-onset PE clustered more often in the hypertensive formerly PE group and showed significantly higher

10- and 30-year CVD risk estimates based on lipids compared with the late-onset PE group: 1.7 versus 1.3% (P < 0.05) and 10.0 versus 7.0% (P < 0.05), respectively.
CONCLUSIONS:
Women who are hypertensive after preeclampsia, have a twofold risk of developing CVD in the next 10-30 years. Formerly PE women who are normotensive in the first 10 years after their preeclamptic pregnancy have a comparable future cardiovascular risk to healthy controls.

KEYWORDS:
Cardiovascular risk; Framingham risk score; hypertension; metabolic syndrome; preeclampsia
PMID: 25139045 [PubMed - in process]

8.

Pediatrics. 2015 Jul;136(1):e159-69. doi: 10.1542/peds.2015-0017.
Prenatal Risk Factors and Outcomes in Gastroschisis: A Meta-Analysis.
D'Antonio F, Virgone C, Rizzo G, Khalil A, Baud D, Cohen-Overbeek TE, Kuleva M, Salomon LJ, Flacco ME, Manzoli L, Giuliani S.

Abstract
BACKGROUND AND OBJECTIVE:
Gastroschisis is a congenital anomaly with increasing incidence, easy prenatal diagnosis and extremely variable postnatal outcomes. Our objective was to systematically review the evidence regarding the association between prenatal ultrasound signs (intraabdominal bowel dilatation [IABD], extraabdominal bowel dilatation, gastric dilatation [GD], bowel wall thickness, polyhydramnios, and small for gestational age) and perinatal outcomes in gastroschisis (bowel atresia, intra uterine death, neonatal death, time to full enteral feeding, length of total parenteral nutrition and length of in hospital stay).
METHODS:
Medline, Embase, and Cochrane databases were searched electronically. Studies exploring the association between antenatal ultrasound signs and outcomes in gastroschisis were considered suitable for inclusion. Two reviewers independently extracted relevant data regarding study characteristics and pregnancy outcome. All meta-analyses were computed using individual data random-effect logistic regression, with single study as the cluster unit.
RESULTS:
Twenty-six studies, including 2023 fetuses, were included. We found significant positive associations between IABD and bowel atresia (odds ratio [OR]: 5.48, 95% confidence interval [CI] 3.1-9.8), polyhydramnios and bowel atresia (OR: 3.76, 95% CI 1.7-8.3), and GD and neonatal death (OR: 5.58, 95% CI 1.3-24.1). No other ultrasound sign was significantly related to any other outcome.
CONCLUSIONS:
IABD, polyhydramnios, and GD can be used to an extent to identify a subgroup of neonates with a prenatal diagnosis of gastroschisis at higher risk to develop postnatal complications. Data are still inconclusive on the predictive ability of several signs combined, and large prospective studies are needed to improve the quality of prenatal counseling and the neonatal care for this condition.

PMID: 26122809 [PubMed - in process]

9.

Pediatrics. 2015 Jul;136(1):61-9. doi: 10.1542/peds.2015-0368.
Umbilical Cord Milking Versus Delayed Cord Clamping in Preterm Infants.
Katheria AC, Truong G, Cousins L, Oshiro B, Finer NN.

Abstract
BACKGROUND AND OBJECTIVE:
Delayed cord clamping (DCC) is recommended for premature infants to improve blood volume. Most preterm infants are born by cesarean delivery (CD), and placental transfusion may be less effective than in vaginal delivery (VD). We sought to determine whether infants <32 weeks born by CD who undergo umbilical cord milking (UCM) have higher measures of systemic blood flow than infants who undergo DCC.
METHODS:
This was a 2-center trial. Infants delivered by CD were randomly assigned to undergo UCM or DCC. Infants delivered by VD were also randomly assigned separately. UCM (4 strippings) or DCC (45-60 seconds) were performed. Continuous hemodynamic measurements and echocardiography were done at site 1.
RESULTS:
A total of 197 infants were enrolled (mean gestational age 28 ± 2 weeks). Of the 154 infants delivered by CD, 75 were assigned to UCM and 79 to DCC. Of the infants delivered by CD, neonates randomly assigned to UCM had higher superior vena cava flow and right ventricular output in the first 12 hours of life. Neonates undergoing UCM also had higher hemoglobin, delivery room temperature, blood pressure over the first 15 hours, and urine output in the first 24 hours of life. There were no differences for the 43 infants delivered by VD.
CONCLUSIONS:
This is the first randomized controlled trial demonstrating higher systemic blood flow with UCM in preterm neonates compared with DCC. UCM may be a more efficient technique to improve blood volume in premature infants delivered by CD.

PMID: 26122803 [PubMed - in process] PMCID: PMC4485011 [Available on 2016-07-01]

10.

Prenat Diagn. 2015 Jul;35(7):645-51. doi: 10.1002/pd.4581. Epub 2015 Apr 1.
Preference-sensitive risk-cutoff values for prenatal-integrated screening test for Down syndrome.
Yan J, Ayer T, Keskinocak P, Caughey AB.

Abstract
OBJECTIVE:
For a pregnant woman considering prenatal screening for early detection of Down Syndrome (DS), there are at least two major outcomes of interest: undetected DS live births and euploid procedure-related fetal losses. The risk-cutoff value of 1/270 has been commonly used for recommending a diagnostic test. The objective of this study was to assess the impact of women's preferences for different pregnancy outcomes on the optimal risk-cutoff values for integrated screening.
METHOD:

We built a Monte Carlo simulation model of 100 000 singleton second-trimester pregnancies to assess the probabilities of DS live births and euploid procedure-related fetal losses for various risk-cutoff values. To capture how undesirable some women may view an undetected DS live birth relative to a euploid procedure-related fetal loss, we used a ratio W1 : W2 of weights (penalties) assigned to these two adverse pregnancy outcomes.
RESULTS:
As the relative weight changes, the optimal risk-cutoff value changes significantly.
CONCLUSION:
A one-size-fits-all risk-cutoff value, such as 1/270, may not always be the best choice, depending on the preferences of women. Preference-sensitive risk-cutoff values for DS screening have the potential to improve the pregnancy outcomes and patient satisfaction. © 2015 John Wiley & Sons, Ltd.

PMID: 25703335 [PubMed - in process]

11.

Am J Obstet Gynecol. 2015 Jul;213(1):73.e1-7. doi: 10.1016/j.ajog.2015.02.020. Epub 2015 Feb 25.
Neonatal outcome of very preterm twins: policy of planned vaginal or cesarean delivery.
Sentilhes L, Oppenheimer A, Bouhours AC, Normand E, Haddad B, Descamps P, Marpeau L, Goffinet F, Kayem G.

Abstract
OBJECTIVE:
The objective of the study was to compare neonatal mortality and morbidity in very preterm twins with the first twin in cephalic presentation in hospitals with a policy of planned vaginal delivery (PVD) and those with a policy of planned cesarean delivery (PCD).
STUDY DESIGN:
Women with preterm cephalic first twins delivered after preterm labor and/or premature preterm rupture of membranes from 26(0/7) to 31(6/7) weeks of gestation were identified from the databases of 6 perinatal centers and classified as PVD or PCD according to the center's management policy from 1999 to 2010. Severe neonatal morbidity was defined as any of the following: intraventricular hemorrhage grades 3-4, periventricular leukomalacia, necrotizing enterocolitis, bronchopulmonary dysplasia, and hospital death. The independent effect of the planned mode of delivery, defined by the center's management policy, was tested and quantified with a 2-level multivariable logistic regression.
RESULTS:
The PVD group included 248 women, and the PCD group 63. Maternal characteristics did not differ between the 2 groups. The rate of vaginal delivery was 85.9% (213 of 248) vs 20.6% (13 of 63) (P < .001), and the rate of cesarean delivery for the second twin was 1.6% (4 of 248) vs 4.8% (3 of 63) (P = .13) for PVD and PCD. PVD had no independent effect on either newborn hospital mortality or severe neonatal composite morbidity.
CONCLUSION:
A policy of planned vaginal delivery of very preterm twins with the first twin in cephalic presentation does not increase either severe neonatal morbidity or mortality.

KEYWORDS:
cesarean delivery; neonatal death; neonatal morbidity; preterm birth; twins

PMID: 25724401 [PubMed - in process]

12.

Am J Obstet Gynecol. 2015 Jul;213(1):82.e1-9. doi: 10.1016/j.ajog.2015.02.021. Epub 2015 Feb 27.
Vaginal progesterone for the prevention of preterm birth in twin gestations: a randomized placebo-controlled double-blind study.
Brizot ML, Hernandez W, Liao AW, Bittar RE, Francisco RP, Krebs VL, Zugaib M.

Abstract
OBJECTIVE:
The purpose of this study was to investigate the use of vaginal progesterone for the prevention of preterm delivery in twin pregnancies.
STUDY DESIGN:
We conducted a prospective, randomized, double-blind, placebo-controlled trial that involved 390 naturally conceived twin pregnancies among mothers with no history of preterm delivery who were receiving antenatal care at a single center. Women with twin pregnancies between 18 and 21 weeks and 6 days' gestation were assigned randomly to daily vaginal progesterone (200 mg) or placebo ovules until 34 weeks and 6 days' gestation. The primary outcome was the difference in mean gestational age at delivery; the secondary outcomes were the rate of spontaneous delivery at <34 weeks' gestation and the rate of neonatal composite morbidity and mortality in the treatment and nontreatment groups.
RESULTS:
The baseline characteristics were similar in both groups. The final analysis included 189 women in the progesterone group and 191 in the placebo group. No difference (P = .095) in the mean gestational age at delivery was observed between progesterone (35.08 ± 3.19 [SD]) and placebo groups (35.55 ± 2.85). The incidence of spontaneous delivery at <34 weeks' gestation was 18.5% in the progesterone group and 14.6% in the placebo group (odds ratio, 1.32; 95% confidence interval, 0.24-2.37). No difference in the composite neonatal morbidity and mortality was observed between the progesterone (15.5%) and placebo (15.9%) groups (odds ratio, 1.01; 95% confidence interval, 0.58-1.75).
CONCLUSION:
In nonselected twin pregnancies, vaginal progesterone administration does not prevent preterm delivery and does not reduce neonatal morbidity and death.

KEYWORDS:
preterm birth; preterm delivery; prevention; progesterone; twin pregnancy
PMID: 25731690 [PubMed - in process]

13.

Circulation. 2015 Jul 14;132(2):132-42. doi: 10.1161/CIRCULATIONAHA.115.015242. Epub 2015 Jun 22.
Pregnancy in Women With a Mechanical Heart Valve: Data of the European Society of Cardiology Registry of Pregnancy and Cardiac Disease (ROPAC).
van Hagen IM, Roos-Hesselink JW, Ruys TP, Merz WM, Goland S, Gabriel H, Lelonek M, Trojnarska O, Al Mahmeed WA, Balint HO, Ashour Z, Baumgartner H, Boersma E, Johnson MR, Hall R; ROPAC Investigators and the EURObservational Research Programme (EORP) Team.

Abstract
BACKGROUND:
Pregnant women with a mechanical heart valve (MHV) are at a heightened risk of a thrombotic event, and their absolute need for adequate anticoagulation puts them at considerable risk of bleeding and, with some anticoagulants, fetotoxicity.
METHODS AND RESULTS:
Within the prospective, observational, contemporary, worldwide Registry of Pregnancy and Cardiac disease (ROPAC), we describe the pregnancy outcome of 212 patients with an MHV. We compare them with 134 patients with a tissue heart valve and 2620 other patients without a prosthetic valve. Maternal mortality occurred in 1.4% of the patients with an MHV, in 1.5% of patients with a tissue heart valve (P=1.000), and in 0.2% of patients without a prosthetic valve (P=0.025). Mechanical valve thrombosis complicated pregnancy in 10 patients with an MHV (4.7%). In 5 of these patients, the valve thrombosis occurred in the first trimester, and all 5 patients had been switched to some form of heparin. Hemorrhagic events occurred in 23.1% of patients with an MHV, in 5.1% of patients with a tissue heart valve (P<0.001), and in 4.9% of patients without a prosthetic valve (P<0.001). Only 58% of the patients with an MHV had a pregnancy free of serious adverse events compared with 79% of patients with a tissue heart valve (P<0.001) and 78% of patients without a prosthetic valve (P<0.001). Vitamin K antagonist use in the first trimester compared with heparin was associated with a higher rate of miscarriage (28.6% versus 9.2%; P<0.001) and late fetal death (7.1% versus 0.7%; P=0.016).
CONCLUSIONS:
Women with an MHV have only a 58% chance of experiencing an uncomplicated pregnancy with a live birth. The markedly increased mortality and morbidity warrant extensive prepregnancy counseling and centralization of care.

KEYWORDS:
heart defects, congenital; heart valves; pregnancy; prostheses and implants; thrombosis
PMID: 26100109 [PubMed - in process]