Abstracts

A randomized trial of preinduction cervical ripening: dinoprostone vaginal insert versus double-balloon catheter

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Objective We sought to compare the efficacy of a double-balloon transcervical catheter to that of a prostaglandin (PG) vaginal insert among women undergoing labor induction.

Study Design In all, 210 women with a Bishop score d"6 were assigned randomly to cervical ripening with either a double-balloon device or a PGE2 sustained-release vaginal insert. Primary outcome was vaginal delivery within 24 hours.

Results The proportion of women who achieved vaginal delivery in 24 hours was higher in the double-balloon group than in the PGE2 group (68.6% vs 49.5%; odds ratio, 2.22; 95% confidence interval, 1.26–3.91). There was no difference in cesarean delivery rates (23.8% vs 26.2%; odds ratio, 0.88; 95% confidence interval, 0.47–1.65). Oxytocin and epidural analgesia were administered more frequently when a double-balloon device was used. Uterine tachysystole or hypertonus occurred more frequently in the PGE2 arm (9.7% vs 0%, *P* = .0007).

Conclusion The use of a double-balloon catheter for cervical ripening is associated with a higher rate of vaginal birth within 24 hours compared with a PGE2 vaginal insert.

Fetoplacental biometry and umbilical artery Doppler velocimetry in the overnourished adolescent model of fetal growth restriction

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Objective: The purpose of this study was to evaluate ultrasonographically fetal growth trajectories, placental biometry, and umbilical artery (UA) Doppler indices in growth-restricted pregnancies of overnourished adolescent ewes and normally developing pregnancies of control-fed ewes.

Study Design: Singleton pregnancies were established using embryo transfer in 42 adolescent ewes that were overnourished (n_27) or controlfed (n_15) and were scanned at weekly intervals from 83-126 days' gestation and necropsied at 131 days' gestation (term_145 days).

Results: Ultrasonographic placental measurements were reduced and UA Doppler indices were increased from 83 days' gestation; measurements of fetal abdominal circumference and femur length, renal volume and tibia length, and biparietal diameter were reduced from 98,

105, and 112 days' gestation, respectively, in overnourished vs control- intake pregnancies.

Conclusion: Overnourishment of adolescent sheep dams produced late-onset asymmetric fetal growth restriction that was commensurate with brain sparing. Ultrasonographic placental biometry was already reduced and UA Doppler indices increased by mid gestation in overnourished pregnancies, preceding reduced fetal growth velocity and indicating an early nutritionally mediated insult on placental development.

Neonatal outcome of pregnancies complicated by Hypertensive disorders between 34 and 37 weeks of gestation: a 7-year retrospective analysis of a national registry

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Objective: The objective of the study was to determine the neonatal morbidity in late preterm infants born from mothers with a Hypertensive disorder.

Study Design: Data were obtained from the national Perinatal Registry in The Netherlands on women who delivered between 34_0 and 36_6 weeks with gestational hypertension (n _ 4316), preeclampsia (n_1864), and normotensive controls (n_20,749).

Results: Children from mothers with preeclampsia had an increased risk for admission to the neonatal intensive care unit compared with children from normotensive mothers (odds ratio [OR], 2.0; 95% confidence interval [CI], 1.8 –2.2). A cesarean delivery and decreasing gestational age were independent risk factors for neonatal respiratory morbidity.

Gestational hypertension or preeclampsia reduced the risk of respiratory distress syndrome compared with the control group (OR,0.81; 95% CI, 0.64 –1.0 and OR, 0.69; 95% CI, 0.49–0.96, respectively).

Conclusion: Neonatal morbidity in the late preterm period is considerable. Hypertensive disorders appear to protect for neonatal respiratory morbidity, but higher rates of cesarean section diminish this protective effect.

Magnesium sulfate therapy for the prevention of cerebral palsy in preterm infants: a decisionanalytic and economic analysis

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Objective: We sought to estimate the cost-effectiveness of magnesium neuroprophylaxis for all women at risk for preterm birth _32 weeks.

Study Design: An analytic and cost-effectiveness model was designed to compare use of magnesium for neuroprophylaxis vs no treatment for women at risk for preterm birth _32 weeks due to preterm premature rupture of membranes or preterm labor from 24-32 weeks. Outcomes included neonatal death and moderate or severe cerebral palsy. Effectiveness was reported in quality-adjusted life years.

Results: Magnesium for neuroprophylaxis led to lower costs ($1739 vs $1917) and better outcomes (56.684 vs 56.678 quality-adjusted life years). However, sensitivity analysis revealed the model to be sensitive to estimates of effect of magnesium on risk of moderate or severe cerebral palsy as well as neonatal death.

Conclusion: Based on currently published evidence for efficacy, magnesium for neuroprophylaxis in women at risk to deliver preterm is cost-effective.

Association between preterm delivery and subsequent C-reactive protein: a retrospective cohort study

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Objective: We sought to determine whether giving birth preterm is associated with raised maternal C-reactive protein (CRP) in later life and whether the association is specific to indicated or spontaneous delivery.

Study Design: This was a Scotland-wide retrospective cohort study of 1124 women who had a first pregnancy resulting in a singleton, liveborn infant delivered between 24-43 weeks' gestation. Linear regression analysis was used to examine the association between preterm delivery and subsequent CRP concentration.

Results: The difference in CRP between women who delivered term and preterm was nonsignificant on univariate analysis (beta coefficient 0.04, *P*_.18) but was statistically significant following adjustment for potential confounders (beta coefficient 0.05, *P* _ .05). On subgroup analysis the association was specific to women who had had indicated preterm delivery (unadjusted beta coefficient 0.09, *P* _ .01; adjusted beta coefficient 0.09, *P*_.01).

Conclusion: Women who undergo indicated preterm delivery are at increased risk of raised CRP in later life.

Timing of delivery following selective laser photocoagulation for twin-to-twin transfusion syndrome

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Objective: We sought to compare intrauterine risks with postnatal outcome in monochorionic pregnancies operated by fetoscopic laser surgery for twin-to-twin transfusion syndrome.

Study Design: A cohort of 602 consecutive cases was analyzed. Unexpected prenatal adverse events were identified when a fatal or potentially fatal event occurred that could have been avoided by timely delivery.

Results: The prospective risk of an unexpected adverse event dropped from 16.8% (95% confidence interval [CI], 13.6 –20.5%) to 0% (95% CI, 0–11%) between 26-36 weeks. At 32 weeks, the residual risk was 1 in 17 (95% CI, 1/28 –1/11). The perinatal rate of death or severe brain lesions dropped from 35% (25-47%) in infants delivered at 26-28 weeks down to 3% (1-6%) at 34-36 weeks.

Conclusion: Our results did not identify an optimal cut-off for elective preterm delivery in laser-operated twin-to-twin transfusion syndrome. Perinatal morbidity appears low from _32 weeks and the decision for elective delivery should be based upon medical history, parental demand, and expert assessment.

Neonatal mortality by attempted route of delivery in early preterm birth

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ObjectivE: We sought to study neonatal outcomes in early preterm births by delivery route.

Study Design: Delivery precursors were analyzed in 4352 singleton deliveries, 24 0/7 to 31 6/7 weeks' gestation. In a subset (n _ 2906) eligible for a trial of labor, neonatal mortality in attempted vaginal delivery (VD) was compared to planned cesarean delivery stratified by presentation.

Results: Delivery precursors were classified as maternal or fetal conditions (45.7%), preterm premature rupture of membranes (37.7%), and preterm labor (16.6%). For vertex presentation, 79% attempted VD and 84% were successful. There was no difference in neonatal mortality. For breech presentation, at 24 0/7 to 27 6/7 weeks' gestation, 31.7% attempted VD and 27.6% were successful; neonatal mortality was increased (25.2% vs 13.2%, *P* _ .003). At 28 0/7 to 31 6/7 weeks' gestation, 30.5% attempted VD and 17.2% were successful; neonatal mortality was increased (6.0% vs 1.5%, *P*_.016).

Conclusion: Attempted VD for vertex presentation has a high success rate with no difference in neonatal mortality unlike breech presentation.