

Extracts from Pertinent Current Literature

Effect of Environment Tobacco Smoke on Perinatal outcomes: A Retrospective Cohort Study

Crane J, Keough M, Murphy P, Burrage L, Hutchens D. BJOG 2011;118:865-71.

Maternal cigarette smoking during pregnancy is associated with a variety of obstetrical complications including spontaneous abortion, placental abruption, growth restriction, PPRM, preterm birth and still birth, resulting in increased perinatal morbidity and mortality. Long-term adverse effects include higher rate of attention deficit hyperactivity disorders, asthma, adverse effects on the immune system and possibly childhood cancers. There appears to be a dose-response relationship. On the other hand there is less information about exposure to Environment tobacco smoke (ETS; Second-Hand Smoke) to evaluate the effects and adverse pregnancy outcome.

A retrospective cohort study was conducted in which 11,852 non-smoking women with singleton gestation were identified. 1202 (11.1%) women who self-reported exposure to ETS were compared with 10,650 (89.9%) women who reported no exposure. Women were excluded if they reported smoking during pregnancy. Different maternal characteristics were described and compared between the two groups.

Main outcome measures were birth weight, birth length, head circumference and still birth. Secondary outcomes included gestational age at delivery, preterm birth < 37 and < 34 weeks, prelabour rupture of membrane, apgar score, need for endotracheal intubation for resuscitation, NICU admission, congenital anomalies, respiratory distress syndrome, interventricular haemorrhage, neonatal bacterial sepsis, jaundice and neonatal metabolic abnormalities. The result showed that exposure to ETS was an independent risk factor for lower birth weight, smaller head circumference, shorter birth length, trend towards preterm birth < 34 weeks and neonatal sepsis. This information is important for women, their families and health care providers and reinforces the continued need for enhanced public policy and education on prevention of exposure to ETS.

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Metformin Should be Considered in The Treatment of Gestational Diabetes: A Prospective Randomized study

Maarasmaki HI, Morin-Papunen L, Keravcio R, Elbeling T, Saarela T, et al. BJOG 2011; 118:880-85.

The incidence of Gestational diabetes mellitus (GDM) varies from 2.2 % to 8.8%, according to the ethnicity and the criteria used for diagnosis. Maternal hyperglycemia is associated with an increased risk of perinatal complications, especially fetal macrosomia (LGA: Birth weight > 4000g), which further increases the risk of labour complication such as shoulder dystocia, need for C-Section and perinatal morbidity such as birth asphyxia.

If normoglycemia is not attained with diet and modified lifestyle, insulin is traditionally considered to be the first line, medical treatment. This needs detailed guidance regarding the self administration of insulin and to avoid acute hypoglycemia. Therefore recently Metformin is considered as safe, effective, more acceptable and simpler alternative for patients with GDM.

This open label prospective randomized controlled study was conducted to compare the efficacy of Metformin and insulin in the prevention of fetal macrosomia and neonatal morbidity. One hundred women who did not attain euglycemia with diet were included in the study and randomized to therapy with insulin (n=50) or oral Metformin (n=50). The baseline characteristics of women did not differ between the study groups. Two women withdrew before starting Metformin and one was excluded after randomization due to abnormal LFT's. Metformin was initiated at a

dose of 750mg (once daily) for the first week, twice daily for the second week and three times daily from third week onwards. Medication was discontinued if significant side-effects occurred. If normoglycemia was not achieved with maximal daily dose of Metformin for 1–2 weeks, supplemental insulin was added. Women were monitored for blood sugar levels, glycosylated haemoglobin, weight gain and fetal growth by ultrasound examination, till delivery. The postnatal follow-up was done at 6 – 8 weeks after delivery.

The results showed that there were no statistically significant difference in the incidence of LGA (8.5 vs 10%, p=0.97), mean birth weight, mean cord artery PH or neonatal morbidity between the two groups. Fifteen (31.9%) out of the 47 women of Metformin group needed supplemental insulin. They were more obese (BMI of 36 vs 30 kg/m², p:0.002), had higher fasting blood sugar levels in an oral GTT (6.1 vs 5 mmol/L, p=0.001) and needed medical treatment for GDM earlier (26 vs 31wks: p=0.002) than women who were normoglycemic with Metformin. There was a higher rate of C-Section in the Metformin group than in the insulin group.

This study concludes that Metformin seems to be suitable for the prevention of fetal macrosomia, especially in lean or moderately over-weight women and in those with GDM developing in late gestation.

Women with considerable obesity, high fasting blood sugar levels and those having an early need for pharmacological treatment, may be more suitable for insulin therapy.

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Uterine Blood Flow in Pregnant Patients with Polycystic Ovary Syndrome: Relationship with Outcome

Palomba S, Falbo A, Russo T, Battista L, Toliono A, Orio F, et al. BJOG 2010;117(6):711-12.

This prospective case control study was carried out at an Academic Departments of Obstetrics and Gynaecology in Italy. The objective was to study the impedance in blood flow through the uterine artery in pregnant women with Polycystic ovarian syndrome (PCOs) and to evaluate its predictive value for adverse pregnancy and perinatal outcome. Seventy three pregnant women with ovulatory PCOs were compared with 73, age and body mass index matched, healthy pregnant controls. Each woman was monitored throughout the pregnancy. The clinical evaluation consisted of obstetric examination, Pap smear, Ferrimen-Gallwey score, Anthropometric measurements (height, weight, BMI and waist to hip ratio (WHR)). The biochemical assessment consisted of monthly assessment of CBC, Renal function tests, liver function tests and serum glucose levels. Hormonal assay was performed at study entry. Basal glucose and insulin levels were also measured. Ultrasonographic assessment was performed at entry into the study and then at 8, 10 and 12 weeks and thereafter every 4 weeks until delivery. During every Doppler ultrasound, the presence or absence of an early diastolic notch was noted. Pulsatility index (PI) and resistance index (RI) were generated.

It was found out that the case and control group significantly differed in WHR and Ferrimen-Gallwey score. Significant differences were observed between the groups in testosterone, androstenedione, sex hormone binding globulin and fasting insulin levels. The cumulative rate of adverse outcome was significantly higher in PCOs than control group. Miscarriages, PIH, Pre-eclampsia, APH, GDM were more frequent. A significant difference between the groups was detected in small for gestational age, large for gestational age and appropriate for gestational age fetuses. There was a higher trend for instrumental delivery and caesarean section in PCO group than the control group. A significantly higher rate of subjects with abnormal velocimetry findings were observed in PCO group. In PCO group, the PI and bilateral notch at first and mid-second trimester of pregnancy were the strongest independent predictors of adverse outcome. Conversely, in the control group, PI at the first trimester of pregnancy was a predictor of adverse outcome only when combined with bilateral notch whereas at midsecond trimester of pregnancy, PI and bilateral notch were independent predictors of adverse outcome.

Thus, uterine artery Doppler indices are more commonly altered in pregnant patients with PCOs than in controls, showing a high predictive value for abnormal pregnancy/perinatal outcome.

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Current debate on the use of antibiotic prophylaxis for caesarean section: A review article

mal pregnancy/perinatal outcome.

Lamont R, Sobel J, Kusanovic J, Vaisbuch E, Mazaki-Tovi S, Kim S, et al. BJOG2011;118:193–201.

Although World Health Organization recommends caesarean section rate of not more than 15% in the developed world, yet this rate is tending to rise, worldwide. Like any other surgery, Caesarean delivery (CD) can be frequently complicated by infections, such as wound infection, endometritis and urinary tract infection. Such morbidity is a significant health and economical burden. This article reviewed multiple studies, multicentre trials and Meta analysis of various studies on the subject and the conclusions are being shared here with the readers.

Antibiotic prophylaxis for CD is effective in preventing maternal infectious morbidity. **Evidence-based guidelines** recommend the use of prophylactic antibiotics before a surgical incision but caesarean delivery is an exception. In CD narrow-range antibiotics are administered after umbilical cord clamping because of putative neonatal benefits. However, in this review **recent evidence** supports the use of pre-incision, broad-spectrum antibiotics,

which results in a lower rate of maternal morbidity with no disadvantage to the neonate.

This strategy of pre-incision, broad-spectrum antibiotics has been adopted by the American College of Obstetricians and Gynaecologists and the American Academy of Paediatricians, though their national guidelines have yet to be changed. Moreover, the combination of broad-spectrum/pre-incision antibiotic prophylaxis for CD versus narrow-range/post-clamping has not been tested and there is an urgent need for this definitive study to be performed. Such a study must take into account both maternal and neonatal infectious morbidity as well as long-term neonatal follow up. Multiple variables such as surgical technique (suture material, use of surgical drainage), type of CD (elective versus emergency, primary versus repeat, with or without labour) and any element of chorioamnionitis would have to be addressed as well.

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