

Abstracts

Exercise during pregnancy improves maternal health perception: a randomized controlled trial

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Objective: We have studied the effect of moderate physical activity that is performed by healthy women during their entire pregnancy on their perception of health status.

Study Design: Eighty sedentary women were assigned randomly to either an exercise group (n = 40) or a control group (n = 40). Maternal perception of health status and several pregnancy outcomes were recorded.

Results: Significant differences ($P = .03$) were found between study groups in the percentage of women who perceived their health status as "very good"; the values that corresponded to the exercise group (n = 18; 54.5%) were better than those of the control group (n = 9; 27.3%). In addition, the women of the exercise group gained less weight ($11,885 \pm 3146$ g) than those of the control group ($13,903 \pm 2113$; $P = .03$).

Conclusion: A moderate physical activity program that is performed over the first, second, and third trimester of pregnancy improves the maternal perception of health status.

Maternal nutrition and gastroschisis: findings from the National Birth Defects Prevention Study

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Objective: Gastroschisis is increasing in many countries, especially among young women. Because young women may have inadequate nutrition, we assessed the relationship between individual nutrients and the risk for gastroschisis.

Study Design: We analyzed data from the National Birth Defects Prevention Study, a population-based case-control study. Cases were ascertained from 10 birth defect surveillance systems. Controls were

randomly selected from birth certificates or hospital records. Nutrient intake was estimated for the year prior to conception from maternal interviews based on a 58-item food frequency questionnaire and cereal consumption reported. A total of 694 cases and 6157 controls were available for analysis.

Results: Reported intake of individual nutrients did not substantially affect the risk for gastroschisis. Stratification by maternal age, preconception body mass index, folic acid-containing supplements, or energy intake (kilocalories) did not alter risk estimates.

Conclusion: This study does not support an increased risk for gastroschisis with decreasing tertiles of individual nutrients.

Early Detection of Preeclampsia Using Inhibin A and Other Second-Trimester Serum Markers.

Ree PH, Hahn WB, Chang SW, Jung SH, Kang JH, Cha DH, Kang MS, Huh JY.

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Objective: The purpose of this study was to determine whether second-trimester maternal serum markers including inhibin A are useful for the detection of preeclampsia. **Methods:** Between January 2005 and March 2009, we analyzed the data of 4,764 subjects who underwent second-trimester multiple-marker screening for Down syndrome. Serum samples were assayed at 15+0 to 20+6 weeks for maternal serum alpha-fetoprotein (MSAFP), human chorionic gonadotrophin (hCG), unconjugated estriol (uE(3)) and inhibin A. We reviewed all medical records retrospectively, and assessed the relationships of several markers with preeclampsia using logistic regression analysis. **Results:** The study sample included 41 patients who developed preeclampsia and a control group consisting of the other 4,723 healthy subjects treated between January 2005 and March 2009. There were no significant differences in gestational ages at blood sampling, maternal weights, gravidity and parity between the two groups. However, the mean ages, Apgar scores, gestational age at delivery and neonatal weights were significantly different between the study group and the control group. The levels of markers in the study group were

significantly increased compared to the control group, 1.76 ± 2.68 for inhibin A, 1.18 ± 0.69 for MSAFP, and 1.62 ± 1.18 for hCG, but uE(3) did not differ significantly between the two groups. The AUC of inhibin A was 0.715, but the AUC of a three-marker combination model (0.800) was even better. A mid-trimester inhibin A concentration of 1.5 MoM or greater had a sensitivity of 60% and a false-positive rate of 16% for the prediction of preeclampsia. Inhibin A was the best predictor of preeclampsia. Three other markers were reliable predictive markers of preeclampsia. Conclusions: Inhibin A and other second-trimester serum markers may be useful for early detection of preeclampsia. Inhibin A was in fact the most important predictable marker among the markers we surveyed. The results of this study support those of previous studies, and provide quantified data elucidating the occurrence of preeclampsia.

Ultrasound measurement of fetal adrenal gland enlargement: an accurate predictor of preterm birth

Turan OM, Turan S, Funai EF, Buhimschi IA, Campbell CH, Bahtiyar OM, Harman CR, Copel JA, Buhimschi CS, Baschat AA, BJOG. 2011 May;118(6):

Objective: The objective of the study was to test whether ultrasound-measured fetal adrenal gland volume (AGV) and fetal zone enlargement (FZE) predicts preterm birth (PTB) better than cervical length (CL).

Study Design: Three-dimensional and 2-dimensional ultrasound were used prospectively to measure fetal AGV, FZE, and CL in women with preterm labor symptoms. We corrected AGV for fetal weight (cAGV). The ratio between whole gland depth (D) and central fetal zone depth (d) (d/D) was used to measure FZE. Ability of cAGV, d/D, and CL to predict PTB 7 days or less was compared.

Results: Twenty-seven of 74 women (36.5%) presenting between 21 and 34 weeks had PTB of 7 days or less. FZE greater than 49.5% was the single best predictor for PTB (sensitivity/specificity 100%/89%) compared with cAGV (81%/87%) and CL (56%/60%; $P < .05$). Prediction was independent of obstetrics history and tocolytic use.

Conclusion: The 2-dimensional measurement of the adrenal gland FZE is highly effective performing superior to CL in identifying women at risk for PTB within 7 days.

Histological recurrence and depth of loop treatment of the cervix in women of reproductive age: incomplete excision versus adverse pregnancy outcome.

Ang C, Mukhopadhyay A, Burnley C, Faulkner K, Cross P, Martin-Hirsch P, Naik R.

BJOG. 2011 May;118(6):685-92.

Objective: Recent meta-analyses have shown that loop treatment of the cervix of > 10 mm depth may be associated with adverse outcomes in future pregnancies. The aim of this study is to assess the rate of incomplete excision and recurrent disease in relation to depth of excision in women of reproductive age undergoing loop treatment.

Design: Observational cohort study.

Setting: Colposcopy Clinic, Northern Gynaecological Oncology Centre, Gateshead, UK.

Population: In all, 1558 women undergoing loop treatment for high-grade cervical intraepithelial neoplasia (HGGIN) between 1998 and 2003.

Methods: Women were followed up until 2008. Recurrence was analysed using Kaplan-Meier plots.

Outcome Measures: Incomplete excision rates and recurrence rates. Recurrence was defined as post-treatment disease with high-grade histology. Any dyskaryotic cytology on follow-up was also documented.

Results: Recurrent high-grade disease on histology was found in 57/1558 (3.7%) women. In women ≥ 35 years old, despite a greater rate of incomplete excision at the endocervical margin at loop depths < 10 mm compared with ≥ 10 mm (24.4% versus 13.3%, $P < 0.01$), the recurrence rate was similar between the two groups (4.3% versus 3.4%, log-rank, $P = 0.52$). In contrast, a loop depth < 10 mm was associated with a higher disease recurrence rate (7.5% versus 3.0%, log-rank, $P = 0.05$) in women > 35 years.

Conclusion: In women of reproductive age requiring treatment for HGGIN, colposcopists performing loop excision should aim for < 10 mm depth. This provides adequate treatment for HGGIN and minimises the potential risk of adverse outcomes in future pregnancies.

**Current Opinion in Obstetrics & Gynecology:
Evidence-based cesarean technique**

Walsh, Colin A

Maternal-fetal medicine: 2010; Volume 22 (2)

Purpose of review: Cesarean section is the most common surgical procedure performed on US women, and rates of cesarean delivery continue to increase.

Recent findings: Recent studies on operative technique in cesarean section have contributed significantly to our knowledge of antibiotic prophylaxis, bladder flap formation, management of the uterine repair and closure of the peritoneum and skin. There is compelling evidence that antibiotics should be given prior to skin incision rather than the traditional

administration after cord clamping. Additionally, evidence-suggesting benefit to multiagent, extended-coverage regimens is mounting. Recent studies challenge the accepted practice of creating a bladder flap in cesarean section. Uterine repair can be safely accomplished either intra or extra abdominally but the debate over single versus double-layer closure continues. Nonclosure of the visceral peritoneum confers significant benefit, but recent evidence suggests that closure of the parietal layer may be advantageous with respect to future adhesions.

Summary: It is imperative that all technical aspects in cesarean section continue to be challenged. Widely accepted aspects, including antibiotics administration at cord clamping and creation of a bladder flap, may not be best practice.