

## Abstracts

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### **Trophoblast infection with *Chlamydia pneumoniae* and adverse pregnancy outcomes associated with placental dysfunction**

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**Objective:** We sought to determine whether *Chlamydia pneumoniae* impairs invasive trophoblast function and is associated with preeclampsia.

**Study Design:** We conducted cell viability and invasion assays using primary extravillous trophoblast cells isolated from first-trimester placentas. We performed a case-control study to identify *C pneumoniae* in trophoblast cells dissected by laser capture microscopy from placentas in women with severe preeclampsia and control subjects who delivered at term.

**Results:** Trophoblast cell viability and invasion through extracellular matrices were decreased after infection with *C pneumoniae* (both  $P < .05$ ). *C pneumoniae* DNA was detected in trophoblast cells in 15/48 cases but only 3/30 controls (odds ratio, 4.1;  $P = .02$ ). Positive and negative controls yielded expected results.

**Conclusion:** *C pneumoniae* infection can reduce trophoblast invasion into the uterine wall and is associated with preeclampsia. Further investigation of the mechanisms by which *C pneumoniae* induces trophoblast dysfunction, and the identification of therapies to prevent adverse outcomes attributed to trophoblast dysfunction, are warranted.

**Key words:** adverse pregnancy outcome, *Chlamydia pneumoniae*, placental dysfunction, preeclampsia, trophoblast

### **Is midtrimester short cervix a sign of intraamniotic inflammation?**

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**Objective:** We sought to determine the relationship between the degree of cervical shortening and

intraamniotic inflammation in patients presenting with a midtrimester short cervix.

**Study Design:** Amniocentesis was performed on singleton pregnancies between 16-24 weeks' gestation with a sonographic cervical length (CL)  $\leq$  25 mm. The fluid was assayed for 25 cytokines. Spearman correlations were used to determine which cytokines correlate with CL. Stepwise regression identified the most significant cytokine and a receiver operating characteristic curve determined the CL cutoff predictive of intraamniotic inflammation.

**Results:** In all, 109 amniotic fluid samples were analyzed. Most (21 of 25) cytokines were inversely correlated to CL. Monocyte chemotactic protein (MCP)-1 was the most significant by stepwise regression. Using a cutoff of MCP-1  $>$  1500 pg/mL, CL of 5 mm had an 86% sensitivity, 85% specificity, 58% positive predictive value, and 96% negative predictive value to predict elevated MCP-1 levels. After excluding patients with intraamniotic infection or labor, findings were similar.

**Conclusion:** CL  $\leq$  5 mm is associated with significant increases in amniotic fluid inflammatory cytokines, even in the absence of infection or labor. In the future, differentiation of those with and without inflammation may aid in choosing therapy directed at the cause of cervical shortening.

**Key words:** cytokine, inflammation, short cervix

### **Impact of pelvic arterial embolization for intractable postpartum hemorrhage on fertility**

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**Objective:** This study was to determine the long-term outcomes of arterial pelvic embolization for intractable postpartum hemorrhage and particularly its effect on menses, fertility, and outcomes of subsequent pregnancies.

**Study Design:** Fifty-six consecutive patients who underwent emergency pelvic arterial embolization for

severe postpartum hemorrhage between April 1995 and July 2005 were included in the study. Patients were contacted to obtain information about menses and fertility after pelvic arterial embolization.

**Results:** Thirty-four women (61.8%) were successfully contacted. One patient had a hysterectomy. Thirty women (91%) reported regular menses. Thirteen women (38.3%) had a total of 20 spontaneous pregnancies. Eight pregnancies ended during the first trimester. The 12 other pregnancies (60%) were all normal and all patients delivered vaginally healthy babies with normal weight for gestational age.

**Conclusion:** The current study suggests that fertility is not adversely affected by arterial pelvic embolization for intractable postpartum hemorrhage and that women can conceive after the procedure with normal pregnancy outcomes.

**Key words:** embolization, fertility, hemorrhage, postpartum, pregnancy

### **Progesterone for preterm birth prevention: an evolving intervention**

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We sought to review emerging data on the use of progesterone to prevent preterm birth (PTB). Using the terms “preterm or premature” and “progesterone” we queried the PubMed database, restricting our search to January 1, 2000, forward and selected randomized clinical trials (RCTs) and metaanalyses of RCTs that evaluated the use of progesterone for the prevention of PTB. We reviewed 238 abstracts and supplemented our review by a bibliographic search of selected reports. We focused on the pharmacologic aspects of progesterone and risk factor-specific outcomes. We identified a total of 17 relevant reports: 8 individual RCTs, 6 metaanalyses, and 3 national guidelines. Individual trials and metaanalyses support that synthetic intramuscular 17-alpha-hydroxyprogesterone effectively reduces the incidence of recurrent PTB in women with a history of

spontaneous PTB. One trial found that vaginally administered natural progesterone reduced the risk of early PTB in women with a foreshortened cervix. The data are suggestive but inconclusive about: (1) the benefits of progesterone in the setting of arrested preterm labor; and (2) whether progesterone lowers perinatal morbidity or mortality. In some women, progesterone reduces the risk of PTB. Further study is required to identify appropriate candidates and optimal formulations.

**Key words:** preterm birth, prevention, progesterone

### **Oophorectomy as a risk factor for coronary heart disease**

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**Objective:** The objective of the study was to examine the relationship between bilateral oophorectomy (BSO) and risk of coronary heart disease (CHD).

**Study Design:** We searched PubMed, EMBASE, meeting abstracts, and reference lists for studies that compared women with BSO at the time of hysterectomy with: (1) women with hysterectomy and ovarian conservation, (2) naturally menopausal women, (3) premenopausal women, or (4) women with no history of hysterectomy or BSO but unreported menopausal status. The primary outcome was fatal or nonfatal CHD.

**Results:** We reviewed 1956 citations. Seven observational studies met inclusion criteria. Heterogeneity among studies precluded formal metaanalysis. Four studies reported BSO increases risk for CHD but only in some subgroups of women or not in fully adjusted multivariate models. Three studies found no increased risk of CHD following BSO, but these studies had significant limitations.

**Conclusion:** The existing evidence is inconclusive to determine the effect of BSO on risk of CHD.

**Key words:** coronary events, oophorectomy, surgical menopause