**IS-73** The effect of nuchal cord on amniotic fluid and cord blood erythropoietin at delivery

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**Objective.** To investigate the effect of nuchal cord (NC) on fetal hypoxia by measuring amniotic fluid (AF) and cord blood (CB) erythropoietin (EPO), which are known good markers of fetal chronic and acute hypoxia, respectively. [Methods] The study protocol was approved by the hospital Institutional Review Board and informed consent was obtained from each subject. A total of 167 cases with normal full-term singleton pregnancy were prospectively studied. The subjects included 47 cases with NC (28.1%) and 80 complicated cases (non-reassuring fetal heart rate pattern, birth weight < 2500 g, Apgar score at 1 min < 7, presence of meconium-stained AF, oligohydramnios). [Results] EPO levels (mU/ml, mean ± SE) were not significantly different between NC group and no NC group in either AF (19.3 ± 4.1 vs. 13.7 ± 1.1) or in CB (57.9 ± 10.3 vs. 52.1 ± 4.9). Similarly, there was no significant difference in AF or CB-EPO levels between the two groups among complicated cases. Among uncomplicated cases, AF-EPO was significantly elevated in NC group (25.5 ± 8.7) compared with that in no NC group (11.5 ± 0.9) (p<0.05). There was no significant difference in CB-EPO levels between the NC and no NC groups. [Conclusion] NC may be an independent risk factor of fetal mild and/or subclinical chronic hypoxia before onset of labor.

**IS-74** Basal Metabolic Rate in Pregnant Women Complicated with Preeclampsia: Enhanced Early Detection of The Disease.

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**Objective.** The aim of the study was to measure resting minute ventilation (\(V_e\)) and oxygen consumption (\(V_o_2\)) in preeclampsia patients before management. Results were compared to those of normal pregnant women in order to evaluate the effectiveness of the evaluation at early detection of the disease. [Methods] Evaluation was performed using an open-circuit ventilation system in 6 hospitalized preeclampsia patients who were taken ill after late gestational age. Sixty-one normal pregnant women, 31 to 40 weeks for gestational age, served as controls. In accordance with university and hospital policies for human research, informed consent was obtained before the measurement. [Results] \(V_e\) and \(V_o_2\) in normal pregnant women were 7.64 L/min and 202 mL/min, respectively. Those of preeclampsia patients were 9.78 L/min and 261 mL/min, respectively. The results of normal pregnant women matched for gestational age and body weight were 8.15 L/min and 220 mL/min. Measurements from preeclampsia patients were 20% greater for \(V_e\) and 19% greater for \(V_o_2\) than those of matched normal pregnant women. [Conclusion] Resting oxygen consumption is significantly increased in patients with symptoms consistent with preeclampsia. It was suggested that periodic metabolic examination of \(V_e\) and \(V_o_2\) for pregnant women may be useful in the prediction and early management of preeclampsia.

**IS-75** Role of \(\beta_3\)-adrenergic receptors in the action of a tumor lipid mobilizing factor

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**Objective.** With progression of gynecologic cancer, patients experience a dramatic body fat loss. A tumor-produced lipid mobilizing factor (LMF) characterized by the ability to stimulate lipolysis via stimulation of adenylate cyclase (AC) have been reported to elevate in both serum and urine of cancer cachectic patients. In this study the ability of LMF to interact with the \(\beta_3\)-adrenergic receptor (\(\beta_3AR\)) has been studied. [Methods] LMF was purified from urine of cancer cachectic patients. Effects of a \(\beta_3AR\) antagonist SR59230A (SR) on lipolysis in murine adipocytes and stimulation of AC in murine adipocyte plasma membranes (PM) by LMF were determined. Cyclic AMP production was determined in CHOK1 cells transfected with human \(\beta_3\) AR (CHOK1\(\beta_3\)). For affinity binding study, LMF was labeled with \(^3^2^P\)T and the binding to crude PM from CHOK1\(\beta_3\) cells was determined. [Results] Induction of lipolysis and stimulation of AC by LMF were attenuated by low concentrations \((10^{-7} - 10^{-5})\) of SR. LMF (250nM) produced comparable increases in intracellular cyclic AMP in CHOK1\(\beta_3\) cells to that obtained with isoprenaline (1nM). In both cases cyclic AMP production was attenuated by SR. A non-linear regression analysis showed a high affinity binding site with a KD value 78 ± 45nM and a Bmax value 282 ± 1 fmole/mgprotein comparable with that of other \(\beta_3\)AR agonists. [Conclusion] LMF induces lipolysis through binding to \(\beta_3\)AR.