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

Osaka Medical Center and Research Institute for Maternal and Child Health, Osaka*, Department of Obstetrics and Gynecology, Osaka University Faculty of Medicine, Osaka*

HASHIMOTO Kazumasa1, SHIMOMA Koichiro2, MURATA Yuji2

[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 < 2500g). Appar 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). whereas 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.


Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo1, Omiya General Central Hospital, Saitama2, Tokyo Rinkai Hospital Tokyo1

HIROSUE Takuya1, CHIHARA Hiromitsu1, MATSUMURA Yoshikatsu1, YAMAGUCHI Masako1, YONEYAMA Yoshio1, SAWA Rintaro1, ARAKI Tsutomu1, OTSUBO Yasuo2, SUZUKI Shunji2

[Objective] The aim of the study was to measure resting minute ventilation (Ve) and oxygen consumption (Vo2) 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] Ve and Vo2 in normal pregnant women were 7.64 L/min and 202 mL/min, respectively. Those of preeclampsia patients were 9.78L/min and 261 mL/min, respectively. The results of normal pregnant women matched for gestational age and body weight were 8.15L/min and 220mL/min. Measurements from preeclampsia patients were 20% greater for Ve and 19% greater for Vo2 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 measurement of ventilation of Ve and Vo2 for pregnant women may be useful in the prediction and early management of preeclampsia.

IS-75  Role of β3-adrenergic receptors in the action of a tumor lipid mobilizing factor

Department of Obstetrics and Gynecology, Osaka City University Medical School, Osaka1, Cancer Biochemistry, Pharmaceutical Sciences Research Institute, Aston University2

HIRAI Kouzo1, TISDALE Michael2, YASUI Tomoko1, KANAOKA Yasushi1, ISHIKO Osamu1

[Objective] With progression of gynecologic cancer, patients experience a dramatic body fat loss. A tumor-produced lipid mobilizing factor (LMP) 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 LMP to interact with the β3-adrenoreceptor (β3AR) has been studied. [Methods] LMP was purified from urine of cancer cachectic patients. Effects of a β3AR antagonist SR59230A (SR) on lipolysis in murine adipocytes and stimulation of AC in murine adipocyte plasma membranes (PM) by LMP were determined. Cyclic AMP production was determined in CHOK1 cells transfected with human β3 AR (CHOK1β3). For affinity binding study, LMP was labeled with 3H and the binding to crude PM from CHOK1β3 cells was determined. [Results] Induction of lipolysis and stimulation of AC by LMP were attenuated by low concentrations (10^-10^-5M) of SR. LMP (250nM) produced comparable increases in intracellular cyclic AMP in CHOK1β3 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 ± 1pmole/mgprotein comparable with that of other β3AR agonists. [Conclusion] LMP induces lipolysis through binding to β3AR.