

## 脐血肾上腺髓质素及胎盘滋养细胞凋亡与 FGR 的相关性分析

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**【摘要】** 目的 研究脐血肾上腺髓质素(ADM)、胎盘滋养细胞凋亡与胎儿生长受限(FGR)的相关性。方法 选择 2012 年 1 月至 2014 年 12 月在我院分娩的生长受限的胎儿 76 例, 记为观察组, 再选择同期在我院分娩的适龄儿 76 例, 记为对照组。对比两组胎儿的一般情况, 然后进行 ADM、胎盘滋养细胞凋亡指数、Bc1-1 蛋白以及 Caspase-3 蛋白水平的检测对比, 最后进行相关性分析。结果 观察组胎儿的体重、身长、坐高以及头围均明显小于对照组, 差异均有统计学意义( $P < 0.05$ ); 观察组 ADM、凋亡指数分别为  $(64.27 \pm 17.32)$  pg/ml、 $(34.82 \pm 9.47)\%$ , 均明显高于对照组的  $(48.93 \pm 12.11)$  pg/ml、 $(8.04 \pm 2.46)\%$ , 并且观察组 Bc1-1 蛋白水平低于对照组, 而 Caspase-3 蛋白水平高于对照组, 以上各项指标比较差异均有统计学意义( $P < 0.05$ ); ADM 与 Bc1-1 表达水平呈明显的负相关( $r = -0.461, P = 0.000$ ), 与 Caspase-3 蛋白表达水平呈正相关( $r = 0.783, P = 0.000$ ), 而凋亡指数与 ADM、Bc1-1 蛋白均无显著相关性( $r = 0.283, P = 0.827; r = 0.362, P = 0.103$ ), 与 Caspase-3 蛋白呈正相关( $r = 0.821, P = 0.000$ )。结论 脐血 ADM 与滋养细胞相关凋亡蛋白 Bc1-1 蛋白以及 Caspase-3 蛋白的共同作用下形成 FGR。ADM 与胎盘滋养细胞的凋亡水平与 FGR 的发生存在显著的相关性。

**【关键词】** 胎儿生长受限; 脐血; 肾上腺髓质素; 胎盘滋养细胞; 凋亡; 相关性

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**Correlation analysis of the relationship between adrenomedullin, apoptosis of placental trophoblast cells and fetal growth restriction.** XIE Hui<sup>1</sup>, LIU Hong-yan<sup>1</sup>, CHEN Jun<sup>2</sup>. Department of Gynaecology and Obstetrics<sup>1</sup>, Department of Clinical Laboratory<sup>2</sup>, Maternal and Child Health Hospital of Ankang City, Ankang 725000, Shaanxi, CHINA

**【Abstract】 Objective** To explore the relationship between adrenomedullin (ADM) of umbilical cord blood, the apoptosis of placental trophoblast cells and fetal growth restriction (FGR). **Methods** Seventy-six fetuses of fetal growth restriction in our hospital from January 2012 to December 2014 were selected as the observation group, and 76 fetuses delivered in our hospital in the same period were enrolled as the control group. The general conditions, ADM, apoptosis index of placental trophoblast cells, Bc1-1 protein and Caspase-3 protein levels were compared between the two groups. Finally, correlation analysis was performed. **Results** The weight, height, sitting height and head circumference of the fetuses in the observation group were significantly lower than those in the control group ( $P < 0.05$ ). The ADM and apoptosis index of the observation group were  $(64.27 \pm 17.32)$  pg/ml,  $(34.82 \pm 9.47)\%$ , respectively, which were significantly higher than those in the control group of  $(48.93 \pm 12.11)$  pg/ml,  $(8.04 \pm 2.46)\%$ . The level of Bc1-1 protein in the observation group was significantly lower than that in the control group, while the level of Caspase-3 protein was significantly higher than that in the control group. The differences were all statistically significant ( $P < 0.05$ ). Correlation analysis showed that the expression level of ADM was negatively correlated with the expression level of Bc1-1 ( $r = -0.461, P = 0.000$ ), and positively correlated with the expression level of Caspase-3 protein ( $r = 0.783, P = 0.000$ ). The apoptotic index and ADM, Bc1-1 protein expression showed no significant correlation ( $r = 0.283, P = 0.827; r = 0.362, P = 0.103$ ), while

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