

论著

妊娠相关血清蛋白-A对内皮细胞生理功能的影响

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摘要:

目的: 观察妊娠相关血清蛋白-A (PAPP-A) 在体外对内皮细胞生理功能的影响。方法: 体外培养人脐静脉内皮细胞株(HUVEC), 随机分为4组。分别给予不同浓度(0, 50, 100及200ng/mL)的PAPP-A刺激, 于0, 12, 24和48 h收集上清液和细胞, 用硝酸还原酶法测定一氧化氮(NO)的浓度, 用免疫组织化学法测定内皮素-1 (ET-1) 的表达。结果: 在不同的时间点, 随着PAPP-A浓度的增加, 上清液NO的浓度逐渐降低, 与对照组相比差异具有统计学意义( $P < 0.05$ )。随着PAPP-A浓度的增加, ET-1的表达呈浓度依赖性增加, 与对照组相比差异具有统计学意义( $P < 0.05$ )。结论: PAPP-A可能通过减少内皮细胞NO的分泌, 上调ET-1的表达来影响内皮细胞的功能。

关键词: 妊娠相关血清蛋白-A 内皮细胞 一氧化氮 内皮素-1

Effect of pregnancy-associated plasma protein-A on the function of endothelial cells

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Abstract:

Objective To determine the effect of pregnancy-associated plasma protein A (PAPP-A) on the function of vascular endothelial cells (VEC). Methods Human umbilical vein endothelial cell (HUVEC) line, derived from human umbilical vein, was cultured in vitro with PAPP-A at 0, 50, 100, and 200 ng/mL for 0, 12, 24, and 48 hours, respectively. Nitric oxide (NO) levels and endothelin-1 (ET-1) levels were determined by spectrophotometer and immunohistochemistry. Results The NO levels of HUVECs in the PAPP-A groups were significantly lower than those in the control group ( $P < 0.05$ ). The ET-1 levels of HUVECs in the PAPP-A groups were significantly higher than those in the control group ( $P < 0.05$ ). The changes were all dose-dependent. Conclusion PAPP-A may affect the function of vascular endothelial cells by reducing the secretion of NO and increasing the level of ET-1.

Keywords: pregnancy-associated plasma protein A; vascular endothelial cell; nitrogen monoxide; endothelin-1

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