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Role of PDGF in the proliferation of cultured pulmonary arterial smooth muscle cells under hypoxic condition and its mechanism*

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Abstract Objective: To investigate the mechanism of the proliferation of pulmonary arterial smooth muscle cells (PASM) under hypoxic condition. Methods: The effects of hypoxia on the proliferation of PASM and PDGF gene expression were observed with ^{3}H-TdR incorporation and dot blot hybridization. Results: The amount of ^{3}H-TdR incorporation with PASM was significantly decreased at the end of the 6th hour after hypoxia ($P < 0.05$) and then increased gradually at the end of the 12th hour. DNA synthesis in PASM was remarkably enhanced at the 24th hour after hypoxia ($P < 0.05$). PDGF-A chain mRNA expression in PASM was significantly decreased when the cells were incubated under 2.5% O_2 and 0% O_2 hypoxic condition from 1.5 to 6 h ($P < 0.05$, *vs* 21% O_2 control) and then up-regulated till the 48th hour. However, PDGF-B chain mRNA was markedly reduced from 1.5 to 24h ($P < 0.05$). Under normoxic condition (21% O_2), PASM could express PDGF-α and -β receptor mRNA at a low level and they were up-regulated under hypoxic condition (2.5% O_2 and 0% O_2). Conclusion: Hypoxia can enhance the proliferation of PASM through obvious up-regulation of the expression of PDGF-α and β receptor mRNA. The autocrine of PDGF-A may play an important role in the proliferation of PASM under hypoxic condition.

Key words hypoxia; pulmonary arterial smooth muscle cell; proliferation; PDGF; PDGF receptor

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个案与短篇

泛影葡胺肾盂灌注治疗乳糜尿21例

Treatment of 21 cases of chyluria by renal pelvis perfusion of meglucamine diatrizoate

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1991~1995年我们用76%泛影葡胺肾盂灌注治疗乳糜尿21例,效果满意。报告如下:

1 临床资料

21例中男13例,女8例;年龄19~54岁,平均38.5岁;病史8月至11年,平均3.1年。患者均有典型的间隙性乳糜尿发作史,尿乙醚试验阳性。膀胱镜检发现乳糜尿来自左肾11例,右肾7例,双肾3例。

2 方法和结果

治疗前4 h高脂饮食,诱发乳糜尿后行膀胱镜检,选5F输尿管导管插至肾盂后,用76%泛影葡胺20 ml于30 s内灌注肾盂。双侧者同时灌注。无效者1周后再次灌注。同时予海群生及低脂饮食。本组18例灌注1次乳糜尿消失。无效3例中,1例第2次灌注后乳糜尿消失,2例多次灌后仍无显效。乳糜尿消失的19例(90.95%)中,随访8例6月至5年,复发1例。灌注后部分病人出现腰胀痛,恶心及血尿,均较轻。

3 讨论

宋世德等[1]曾报道用硝酸银肾盂灌注治疗乳糜尿。用高浓度泛影葡胺肾盂灌注治疗乳糜尿,目前国内未见报道。原理与高渗葡萄糖iv引起静脉蛋情况类似。它在充盈肾盂后逆流入淋巴管,使之产生广泛无菌性炎症反应,组织增生并纤维化而使瘘管闭合,乳糜尿消失。本法安全、有效、无损伤,同传统的硝酸银灌注等比较,毒性小,病人易于接受。

关键词 泛影葡胺;乳糜尿

中图法分类号 R696.8

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