

Octreotide对门脉血流动力学的影响^①

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摘要 用彩色多普勒超声波观察静脉注射奥曲肽 0.1 mg 对 17 例门脉高压症患者的门脉血流的影响。结果表明奥曲肽能显著地缩小门脉高压患者的门静脉主干内径 ($P < 0.001$), 增加门脉平均血流速度 (90 min 及 24 h, $P < 0.01$; 第 7 天, $P > 0.05$), 而平均血流量 ($P > 0.05$) 及血流方向却无变化。非门脉高压症患者上述指标无统计学意义。

关键词 高血压, 门静脉 药物治疗; 生长抑素 药理学, 血液动力学

中图分类号 R 575.2

大量临床资料表明奥曲肽 (octreotide) 用于临床能够有效地控制门脉高压症并发食道胃底静脉曲张破裂出血^[1,2]。为进一步探讨其作用的特点、机理和持续时间, 我们用彩色超声多普勒^[3], 采取单盲自身前后对比的方法, 对门脉血流进行检测。

1 材料和方法

1.1 研究对象

门脉高压症患者 17 例, 其中男 13 例, 女 4 例; 年龄 42~77 岁, 平均 (57.88 ± 11.02) 岁。所有研究对象为住院病人。病因: 乙型肝炎后肝硬化 12 例, 酒精性肝硬化 5 例。肝功能 (按 Child-Pugh 分级法) A 级 3 例, B 级 12 例, C 级 3 例。非门脉高压症患者 6 例 (参照我院 B 超室的正常人群数据^[4]), 其中男 3 例, 女 3 例; 年龄 32~69 岁, 平均 (51.67 ± 14.72) 岁。病因: 胆石症行 ERCP 检查者 5 例, 急性胰腺炎 1 例; 肝功能均为 A 级。

1.2 仪器和方法

所有病例静脉注射奥曲肽 0.1 mg, 用彩色多普勒超声波 Aloka SSD-2000 ECHO CAMERA 分别观察用药前、用药后 90 min、24 h 和第 7 天的门脉主干内径 (D_{pv}), 平均血流速度 (V_{pv}), 平均血流量 (Q_{pv}) 和血流方向。患者均在空腹安静状态下检查, 取平卧位或左侧卧位, 使门脉主干长轴显像清晰, 取样线与血流轴线夹角 $< 60^\circ$ 。同时观察血压、心率的变化, 7 d 后重新评价肝功能情况。

1.3 数据处理及统计学方法

所有数据用 SPSS 统计学软件处理, 两组均数比较用 t 检验。

2 结果

门脉高压症组和非门脉高压症组用药前、后门脉 D_{pv} 、 V_{pv} 、 Q_{pv} 和血流方向变化见表 1。

表 1 两组患者 D_{pv} 、 V_{pv} 、 Q_{pv} 检测结果 [$\bar{x} \pm s(t$ 值)]

	用药前	用药后 90 min	用药后 24 h	用药后 7 d
D_{pv} (d/mm)				
门脉高压	14.9 ± 1.4	14.2 ± 1.3 (4.40) ¹⁾	14.0 ± 1.3 (4.66) ¹⁾	13.5 ± 1.2 (6.69) ¹⁾
非门脉高压	11.7 ± 0.5	11.5 ± 0.6 (1.00) ³⁾	11.5 ± 0.6 (1.00) ³⁾	11.7 ± 0.5 (0.00) ³⁾
V_{pv} (v/cm s ⁻¹)				
门脉高压	9.3 ± 1.5	10.7 ± 2.2 (3.74) ²⁾	11.1 ± 2.8 (3.67) ²⁾	10.4 ± 3.2 (1.32) ³⁾
非门脉高压	12.8 ± 1.1	13.4 ± 1.7 (1.13) ³⁾	12.9 ± 1.6 (0.18) ³⁾	13.4 ± 1.4 (1.31) ³⁾
Q_{pv} (Q/mL min ⁻¹)				
门脉高压	925.6 ± 185.3	943.6 ± 262.7 (0.48) ³⁾	945.8 ± 276.2 (0.43) ³⁾	903.8 ± 204.2 (0.55) ³⁾
非门脉高压	928.9 ± 105.6	922.8 ± 134.0 (0.27) ³⁾	904.4 ± 154.3 (0.51) ³⁾	907.8 ± 78.9 (0.75) ³⁾

与用药前比较, 1) $P < 0.001$, 2) $P < 0.01$, 3) $P > 0.05$, 所有血流方向均为向肝型

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3 讨 论

降低门脉高压的治疗有手术和药物, 由于手术治疗创伤大, 有一定的局限性, 目前越来越多学者更加注重探索药物治疗。已知的有效药物有心得安、垂体加压素、心痛定和汉防己甲素等^[5, 6], 但止血效果都不够理想, 而且不能够减少死亡率。合并食道胃底静脉曲张破裂出血者, 较常用的是三腔二囊管压迫止血, 但技术要求较高, 再出血的发生率极高, 病人较痛苦。奥曲肽应用于临床以来, 人们发现它能够有效地控制门脉高压所致的食道静脉曲张破裂出血^[1, 2], 但它的治疗作用机制尚未完全明了。本研究观察到门脉高压组患者经用奥曲肽后, 首先表现在门静脉主干的内径缩小, 在用药后 90min 与用药前比较, 有极显著的统计学意义 ($P < 0.001$), 且持续时间较长, 到第 7d 仍有极显著的差异 ($P < 0.001$)。在平均血流速度方面, 表现为平均血流速度增加, 用药后 90min 及 24h 与用药前比较, 均有较显著的统计学意义 ($P < 0.01$), 但到第 7 天时就没有统计学上的差异 ($P > 0.05$)。而用药前后平均血流量无统计学上的差异 ($P > 0.05$)。用药前后血流方向无改变, 均为向肝型。非门脉高压症组患者, 用药前后门脉 D_{pv} 、 V_{pv} 、 Q_{pv} 无统计学上的差异 ($P > 0.05$), 血流方向也均为向肝型。两组病人用药前后血压、心率及肝功能分级无改变。这与我院动物实验性门脉高压模型应用奥曲肽后能有效降低门脉压力的结果一致 (采取直接测压法进行测压)^[7], 是奥曲肽治疗门脉高压症所致的上消化道出血的理论基础, 至于其作用机理, 可能与奥曲肽能够抑制消化腺 (包括胃肠道的 APUD 细胞等) 的分泌有关^[8, 9], 是通过液递介质使门静脉内压力降低所致。

门脉高压症组与非门脉高压症组进行配对比较, 尽管用奥曲肽后, 门脉高压症组病人 D_{pv} 有明显的缩小, 但与非门脉高压症组病人比较, 仍有极显著的差异 ($P < 0.001$); 而平均血流速度, 用药前两组有极显著的差异 ($P < 0.001$), 用药后 90min 仍有统计学差异 ($P < 0.05$), 但 24h 及第 7d 时两组间

无统计学差异; 平均血流量两组间任何时候都无统计学差异, 结果提示奥曲肽只对已有门脉高压的门脉系统血液动力学有影响, 且这种影响是有一定限度的。对于门静脉血流动力学的检测, 彩色多普勒的检查是一种较准确、有效的手段, 它具有能动态观察、前后对比、可重复进行、无创伤性的优点, 值得临床上推广应用。

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(1996-09-05收稿 1997-01-2修回)

HEMODYNAMIC EVALUATION OF OCTREOTIDE ON PORTAL BLOOD FLOW

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The effect of single dose (0.1mg) of octreotide given intravenously on portal blood flow in 17 patients with portal hypertension and 6 patients without portal hypertension were monitored by colour pulsed Doppler ultrasound. The results indicated that octreotide significantly decreased the major portal diameter ($P < 0.001$), and increased the average velocity of the portal blood flow ($P < 0.01$ at 90min and 24 hours, $P > 0.05$ in the 7th day), but had no effect on both the average quantity and the direction of the portal blood flow. No statistical change above parameters had been seen in the patients without portal hypertension after giving octreotide intravenously.

Subject headings hypertension, portal/drug therapy; somatostatin /pharmacology; hemodynamics

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Elevation of renal angiotensin converting enzyme

(1996-03-15收稿 1996-11-0修回)

SERIAL OBSERVATIONS ON RENIN-ANGIOTENSIN SYSTEM ACTIVITY IN STZ-INDUCED DIABETIC RATS

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Plasma and renal tissue renin activities(PRA, TRA), angiotensinII (A_{III}) and renal tissue angiotensinogen mRNA expression levels were assessed in 37 STZ-induced diabetic rat with 1, 3, 6-month duration of diabetes (DM 1, DM 2, DM 3) and 27 age-matched normal control rat (C1, C2, C3). The result showed that PRA and TRA were not significantly different between all diabetic and their control groups. Increased plasma A_{III} concentration and renal angiotensinogen mRNA expression levels were found higher in DM 2 than those in C2. However, renal tissue angiotensin concentrations were higher in all DM groups than those in C groups. The result indicated the activity of plasma and renal tissue renin-angiotensin system did not always in parallel and the increased activity of renal tissue renin-angiotensin system might be one of important factors in the initiation and progression of diabetic nephropathy.

Subject headings diabetes mellitus, experimental/complications; diabetic nephropathies /complications; renin-angiotensin system; RNA, messenger