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Relationship between plasma lipids and transmembrane ion transports in patients with essential hypertension

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Abstract Objective: To explore the relationship between plasma lipids and transmembrane ion transports in patients with essential hypertension. Methods: The levels of plasma lipids, red cell Na^+ pump, Na^+/K^+ exchange and $^{45}Ca^{2+}$ influx were measured in 51 patients with essential hypertension and 20 normal controls. Results: The levels of plasma cholesterol (TC), triglyceride (TG) and low density lipoprotein cholesterol (LDL-c) and the rate of cell Na^+/K^+ exchange and $^{45}Ca^{2+}$ influx were higher but the level of red cell Na^+ pump was lower in the patients than in the controls. The rate of $^{45}Ca^{2+}$ influx into red cells was positively correlated to diastolic blood pressure in the patients ($P < 0.05$). TC and LDL-c were positively correlated with $^{45}Ca^{2+}$ influx in the patients with a family history of essential hypertension but not in those without. Conclusion: Abnormality in lipid metabolism may play an important role in the occurrence of gene-related hypertension through affecting the transmembrane Ca^{2+} transport.

Key words hypertension; plasma lipid; erythrocyte; ion transport

严重胆道感染时相关粘附分子的表达变化及在肝损害中的意义

Expression of related adhesion molecules and their role in hepatic damage in severe cholangitis

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严重胆道感染是各种胆道疾患的常见并发症和主要死亡原因之一。该症起病急,进展快,病程早期即可发生肝功能严重受损,肝脏能量代谢障碍,并导致以肝功能不全为先导的多器官功能衰竭乃至死亡。

中性粒细胞(PMN)在抵御病原微生物的入侵及对各种病理性损害的防御中具有非常重要的作用,但 PMN在组织和脏器的大量聚集和过度活化可对宿主产生破坏作用,造成组织损伤。近年来研究发现 PMN对组织细胞的损害作用呈粘附依赖性,即依赖 PMN与微血管内皮细胞的粘附,而这种粘附的分子基础是 PMN和血管内皮细胞表面粘附分子的表达变化。在多种细胞因子及炎症介质作用下,这些粘附分子表达上调,使 PMN与血管内皮细胞粘附及迁移增强, PMN在趋化因子作用下穿越血管内皮细胞到达周围组织,释放活性氧、水解蛋白酶及脂类代谢产物,造成脏器的损害。

本实验应用大鼠急性胆管炎模型,以在体和离体实验相结合的方法,观察了肝脏 PMN聚集与肝损害的关系,急性胆管炎时相关粘附分子 ICAM-1、E-selectin、CD18、CD11等的表达变化,并通过观察这些粘附分子对 PMN粘附及穿越肝窦内皮细胞(HSEC)迁移的影响,对这些粘附分子在急性胆管炎肝损伤中的意义进行了探讨,主要实验结果及结论如下:

(1)急性胆管炎时大鼠肝组织 PMN数量进行性增多, PMN开始主要聚集在肝窦, 12 h后穿越 HSEC在肝细胞周围聚集逐渐增多。急性胆管炎大鼠肝脏功能损害,肝脏能量代谢障碍,肝细胞变性坏死,动物 24 h存活率仅为 40%。消耗循环 PMN使肝脏功能损害及肝脏能量代谢障碍得到明显改善,肝坏死面积减少,动物存活率提高。表明肝脏 PMN浸润在胆道感染肝脏损害发生中具有重要作用。

(2)原位杂交显示急性胆管炎时 ICAM-1和 E-seletin mRNA表达显著增强, ICAM-1的阳性颗粒主要位于肝窦内皮细胞、Kupffer细胞和肝小叶中央静脉, E-selectin的阳性颗粒主要位于 HSEC和肝小叶中央静脉。两种分子均于 3 h表达开始增强, ICAM-1 12 h表达最强, E-selectin 6 h表达最强。免疫组

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完成 LC;少数病例不适合行 LC,就果断中转开腹,所以既扩大了 LC的应用范围,又防止了胆道损伤等严重手术并发症的发生。我们认为,LC中转开腹的指征为:① Calot三角严重粘连、胆囊明显充血水肿、解剖关系不清楚者;② 术中胆囊床或胆囊动脉出血,经腹腔镜不易控制出血者;③ 可疑或伤及胆管或其它脏器者;④ 发现胆道解剖有明显变异如粗大的副肝管者。

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A report of 1450 cases undergone laparoscopic cholecystectomy

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Abstract **Objective**: To evaluate the safety and efficiency of laparoscopic cholecystectomy (LC). **Methods**: From July, 1992 to July, 1996, LC was performed in 1450 patients with benign gallbladder diseases. Of the patients, 142 were examined with preoperative endoscopic retrograde cholangiography (ERCP). **Results**: The conversion to open surgery was needed by 61 (4.21%) and various complications were found in only 9 (0.62%) but no death and bile duct injury were found. **Conclusion**: LC is a safe and efficient technique in the treatment of benign gallbladder diseases.

Key words laparoscopic cholecystectomy; cholecystitis/su; gallbladder stone

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化显示 ICAM-1表达定位和时间与 mRNA表达一致。循环 PMN表达 CD11b和 CD18的阳性率于胆道感染后 3 h开始增高,12 h最高。

(3)急性胆管炎大鼠血清刺激引起 PMN与 HSEC粘附率显著增高,穿越 HSEC单层迁移的 PMN数量显著增多。抗 ICAM-1、CD11b及 CD18单抗预处理可显著降低 PMN与 HSEC的粘附率,阻断 PMN穿越 HSEC单层迁移。提示胆道感染时 CD18、CD11b、ICAM-1等粘附分子直接参与 PMN与 HSEC的粘附及穿越 HSEC迁移。

(4)急性胆管炎大鼠 PMN产生丙二醛及释放髓过氧化物酶的量明显升高。感染大鼠的 PMN与正常肝细胞共同孵育,可引起肝细胞功能损害,抑制肝细胞总蛋白及 DNA合成能力。

关键词　细胞粘附分子;胆管炎;中性粒细胞;肝窦内皮细胞

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