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Kinetics of bcl-2 and bax mRNA Expression in Nitric Oxide-induced Apoptosis of Human Hepatocellular Carcinoma Cells Lines *in Vitro*

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ABSTRACT: Objective To investigate the kinetics of bcl-2 and bax mRNA expression in nitric oxide induced apoptosis of human hepatocellular carcinoma cells. Methods Sodium nitroprusside (SNP) was used to induce apoptosis in human hepatocellular carcinoma cell lines. The expression of bcl-2 and bax mRNA in the cell was detected by RT-PCR. The PCR products were separated on gel and densitometric analysis of bands allow semi-quantification. Results The levels of bcl-2 and bax mRNA expression were reduced and the ratio of bax/bcl-2 mRNA was elevated in both SMMC-7721 and HepG₂ cell lines treated with 1.0 mmol/L SNP. The decreased degree of bcl-2 and bax mRNA expression was smaller in HepG₂ cell than that in SMMC-7721 cell ($P < 0.05$). The alteration time of bcl-2 and bax mRNA expression was later in HepG₂ cell than that in SMMC-7721 cell. Conclusion NO induced apoptosis in human hepatocellular carcinoma cell is correlated with the change of bcl-2 and bax mRNA expression and increasing of the ratio of bax/bcl-2 mRNA.

KEYWORDS: proto-oncogene proteins; gene; bcl-2; apoptosis; nitric oxide; carcinoma; hepatocellular

(上接第161页)

(3)尸体肾常存在休克、感染等其他疾病的影响,而活体供肾是在术前准备充分的情况下行择期手术,因而获取的肾脏质量好,而且供、受者同时手术,冷、热缺血时间均短,缺血再灌注损伤轻于尸体肾。(4)活体供肾较方便,来源丰富,手术时间安排合理,避免受者长时间的透析,这在尸肾来源紧张而等待移植的人数逐年增加的情况下显得更为重要。(5)HLA配型好,供肾质量高,排斥反应弱,移植后免疫抑制剂用量相对较低,既减轻药物的毒副作用,也减轻了患者与社会的经济负担。本例CsA用量为同时间尸肾移植患者服用剂量的2/3。

但活体亲属供肾移植存在着手术难度大,医生与供者承受的风险较高,加上伦理道德方面的问题,使活体亲属供肾移植开展受到很大的限制,目前开展的单位和例数均较少。作者认为在尸肾来源紧张时应提倡活体亲属供肾移植,在宣传上加大力度,在技术上应严格筛选供者,保证良好的组织配型,在此前提下术前应详细了解供者的身体状况以及供肾的条件和质量,在保证供肾质量的同时尽量减少对供者的损伤是非常重要的。由于活体亲属供肾移植在我国还没有法律依据,存在手术风险,因此对医生、受者及供者之间进行术前相关法律公证是必要的。