



芪红胶囊对柯萨奇病毒体外感染HeLa细胞的影响

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Effect of Qihong Capsule on HeLa Cells Infected by Coxsackievirus B3 In Vitro

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摘要 目的 体外观察芪红胶囊对柯萨奇病毒感染HeLa细胞的影响。方法 采用柯萨奇病毒感染HeLa细胞,XTT实验和空斑形成抑制实验测定芪红胶囊和利巴韦林的半数有效量(ED50)、能够减少50%空斑形成的最小药物浓度(IC50)及半数细胞毒性浓度(CC50),并计算治疗指数(SI);抗病毒时程实验比较两者在不同时间点的抗病毒作用;黏附实验和穿入实验观察芪红胶囊对病毒黏附和穿入的抑制作用。结果 芪红胶囊的ED50和IC50分别为(7.16±0.80)和(2.63±0.50) mg/L,利巴韦林分别为(4.35±0.40)和(1.92±0.30) mg/L。芪红胶囊的CC50和SI 分别为(1 648±219) mg/L和232及618,明显高于利巴韦林的(103±14) mg/L和24及54 (P均<0.01)。两种药物在用药8h和12h时间点的抑制病毒效果差异有统计学意义(P均<0.05)。芪红胶囊对病毒黏附和穿入的抑制作用呈现明显量效关系,当浓度为10 mg/L时,能抑制50%的病毒黏附;当浓度为3 mg/L时,能够抑制50%的病毒穿入。结论 芪红胶囊能够在体外有效抑制病毒对HeLa细胞的入侵,且毒性较低,其抗病毒作用主要源于对病毒黏附和穿入的抑制作用。

关键词: 芪红胶囊 柯萨奇病毒 病毒性心肌炎

Abstract: Objective To investigate the effects of Qihong capsule (QH) on HeLa cells infected by coxsackievirus B3 (CVB3) in vitro and its potential antiviral mechanism. Methods HeLa cells were infected by CVB3 in vitro. XTT assay and plaque inhibition assay were performed to determine the 50 % effective dose,(ED50),50 % inhibitory concentration (IC50),and 50% cytotoxicity concentration (CC50) of QH and the control drug,ribavirin. The total therapeutic index (TI) was calculated. Anti-viral time-course experiments were performed to compare the anti-viral effects at different time points. The inhibitory effects of QH on the attachment and penetration of CVB3 were also observed. Results XTT assay and plaque inhibition assay showed that the ED50 and IC50 were (7.16±0.80) mg/L and (2.63±0.50) mg/L in QH group and (4.35±0.40) mg/L and (1.92±0.30) mg/L in ribavirin group,respectively. CC50 was 16-fold higher in QH group than in ribavirin group [QH: (1 648±219) mg/L vs. Ribavirin: (103±14) mg/L] . Time-course studies demonstrated that antiviral effect of QH was mainly found 0-4 hours after infection. QH effectively blocked the attachment and penetration of CVB3 into cells. Conclusion By inhibiting the attachment and penetration of CVB3,QH can effectively inhibit the invasion of virus in vitro with low toxicity.

Keywords: QiHong capsule coxsackievirus myocarditis

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