



## 肾综合征出血热患者血浆TH1/TH2细胞因子水平的动态改变

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## Change of Plasma TH1/TH2 Cytokines Levels in Patients with Hemorrhagic Fever with Renal Syndrome

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摘要

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**摘要** 摘要: 目的 观察肾综合征出血热(HFRS)患者体内T淋巴细胞亚群和血浆TH1/TH2细胞因子的变化情况。方法 以22例确诊HFRS患者为研究对象(轻型9例,中型13例),采用流式细胞技术检测淋巴细胞亚群,酶联免疫吸附法定量检测发病1、4、12周时血浆内细胞因子,并以16名健康献血员为正常对照。结果 发病1、4周时,HFRS患者CD3+CD8+T淋巴细胞计数明显高于对照组( $P < 0.01$ ),且在发病1周时轻型患者CD3+CD8+T淋巴细胞计数显著高于中型患者( $P < 0.05$ );CD3+CD4+T淋巴细胞计数在整个病程中与对照组差异无统计学意义( $P > 0.05$ )。发病1周时,HFRS患者血浆TH1细胞因子白细胞介素(IL)-2和 $\gamma$ 干扰素(IFN- $\gamma$ )及TH2细胞因子IL-6和IL-10均较对照组显著升高( $P < 0.01$ );IL-2和IL-10始终保持较高水平,至发病12周时仍显著高于对照组( $P < 0.01$ )。发病4周时,HFRS患者血浆IL-5较对照组显著增高( $P < 0.01$ ),至12周时仍显著高于对照组( $P < 0.01$ )。发病1、4周时,中型患者血浆INF- $\gamma$ 水平显著高于轻型患者( $P < 0.05$ );发病12周时,中型患者血浆IL-10水平显著高于轻型患者( $P < 0.05$ )。结论 轻型HFRS患者CD3+CD8+T淋巴细胞在疾病早期显著增高,早期的细胞免疫应答有利于疾病的控制;细胞因子INF- $\gamma$ 和IL-10在中型患者中增高更显著,提示细胞因子在本病发病机制中发挥重要作用。

**关键词:** 肾综合征出血热 T细胞亚群 细胞因子

**Abstract:** ABSTRACT: Objective To observe changes in T cell subsets and TH1/TH2 secreted cytokines in the plasma of patients with hemorrhagic fever with renal syndrome (HFRS). Methods Totally 22 patients with HFRS (9 mild cases and 13 moderate cases) were enrolled. Blood samples were taken 1, 4, and 12 weeks after presentation. T cell subsets were tested by flow cytometry (FCM), and the expression of cytokines in plasma were analysed with enzyme-linked immunosorbent assay (ELISA). Another 16 healthy blood donors were enrolled as the control group. Results CD3+CD8+ T lymphocytes increased at week 1 and 4 ( $P < 0.01$ ), which was more significant in mild cases than in moderate cases ( $P < 0.05$ ). The change of CD3+CD4+ T lymphocytes during the disease course were not significantly different from that in control group ( $P > 0.05$ ). One week after presentation, TH1 [interleukin (IL)-2 and interferon-gamma (IFN- $\gamma$ )] and TH2 (IL-6, IL-10) cytokine productions were significantly higher in HFRS patients than in the control group ( $P < 0.01$ ); IL-2 and IL-10 remained high levels during the whole observation period, and were still significantly higher than in the control group ( $P < 0.01$ ). At week 4, the plasma IL-5 level was significantly higher in HFRS patients than in the control group ( $P < 0.01$ ), and were still significantly higher than in the control group at week 12 ( $P < 0.01$ ). At week 1 and 4, the plasma INF- $\gamma$  levels were significantly higher in moderate patients than in mild patients ( $P < 0.05$ ); at week 12, the plasma IL-10 level was significantly higher in moderate patients than in mild patients ( $P < 0.05$ ). Conclusions CD3+CD8+ T lymphocytes remarkably increases at the early stage of disease in patients with mild HFRS. The early cell mediated immune response is helpful for disease control. The cytokines INF- $\gamma$  and IL-10 increase more obviously in moderate patients, indicating that cytokines also are key pathogenic factors of HFRS.

**Keywords:** demorrhagic fever with renal syndrome t lymphocyte subset cytokine

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