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移植医学专栏

IL-17在小鼠肾移植急性排斥反应早期诊断中的作用

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摘要:

目的:研究Th17细胞及相关因子白细胞介素17(IL-17)在小鼠肾移植排斥反应中的表达及意义。**方法**:建立小鼠肾移植模型,实验动物随机分为同系移植组和急性排斥反应组;在移植术后3,7 d分别应用ELISA检测2组小鼠血清中IFN-γ和IL-17的含量,应用流式细胞技术检测移植肾中浸润淋巴细胞中Th1和Th17细胞数量,取移植肾经10%甲醛固定后行常规病理检查。**结果**:与同系移植组相比,急性排斥反应组术后第3天血清IFN-γ含量无明显差异而IL-17含量显著增高($P<0.05$),术后第7天血清IFN-γ和IL-17含量均显著增高($P<0.05$);急性排斥反应组中血清IFN-γ和IL-17含量术后第7天较第3天均显著增高($P<0.05$);急性排斥反应组移植肾中浸润淋巴细胞中Th1与Th17细胞比例在术后第3天及第7天较同系移植组均明显增多($P<0.05$);急性排斥反应组中移植肾中浸润淋巴细胞中Th1与Th17细胞比例术后第7天明显高于第3天($P<0.05$);病理组织学检查急性排斥反应组随着移植时间的延长,排斥反应逐渐增强。**结论**:Th17细胞在肾移植排斥反应的发生发展中可能起着非常重要的作用,对受体血清中细胞因子IL-17的检测可作为急性排斥反应早期诊断的预见性和特异性指标。

关键词: 肾移植 急性排斥 辅助性T细胞17 白介素17

IL-17 in the early diagnosis of acute renal allograft rejection in mice

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Abstract:

Objective To investigate the expression of T helper (Th) 17 cells and the related interleukin 17 (IL-17) in acute renal allograft rejection in mice and its significance. Methods We established a mouse renal allograft model, in which mice were randomly divided into a renal isograft group and an acute renal allograft rejection group. Three and 7 d after the transplantation, the serum interferon (IFN)-γ and IL-17 levels in the mice were determined by enzyme-linked immunosorbent assay, the percentage of Th1 and Th17 cells in the total kidney-infiltrating lymphocytes was investigated by flow cytometry, and the transplanted kidney species were given routine pathological examination after fixation with 10% formalin. Results Compared with the isograft group, the allograft mice showed a significantly higher content of IL-17 ($P<0.05$) but not IFN-γ in the serum 3 d after transplantation, and showed significantly higher serum IL-17 and IFN-γ contents 7 d after transplantation ($P<0.05$). Also, compared with the isograft group, the allograft mice exhibited significantly higher percentage of Th1 and Th17 cells on both day 3 and day 7 ($P<0.05$). In the allograft group, the contents of serum IFN-γ and IL-17 and the percentage of Th1 and Th17 cells were significantly higher on day 7 than on day 3 ($P<0.05$). Routine pathological examination indicated that, as time passed, the allograft mice showed gradually stronger rejection responses. Conclusion Th17 cells might play an important role in the development of acute renal allograft rejection, and IL-17 can be used as an early indicator of acute rejection.

Keywords: kidney transplantation acute rejection T helper cell 17 interleukin 17

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