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IL-21对慢性粒细胞白血病患者调节性T细胞的影响 [点此下载全文](#)

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摘要:

目的: 观察白细胞介素21 (interleukin-21, IL-21) 对慢性粒细胞白血病 (chronic myeloid leukemia, CML) 患者CD4<sup>+</sup>CD25<sup>+</sup>调节性T细胞(regulatory T cell, Treg)的作用, 为CML的免疫治疗提供新思路。方法: 收集兰州大学第二医院血液科初诊CML患者外周血单个核细胞 (peripheral blood mononuclear cells, PBMCs), 免疫磁珠法分选出CD4<sup>+</sup>T细胞。分别加入50、100、200 ng/ml IL-21与CD4<sup>+</sup>T细胞共培养72 h后, 流式细胞术检测Treg的比例, 并设生理盐水空白对照组。Real-time PCR法检测Treg细胞中 Foxp3 mRNA的表达, ELISA法检测各组细胞上清液中IL-10、TGF- $\beta$ 的水平。结果: 与空白对照组相比, 50、100、200 ng/ml IL-21组CD4<sup>+</sup>CD25<sup>+</sup>Treg占CD4<sup>+</sup>T细胞的比例均降低[ (3.42 $\pm$ 0.76)%、(6.81 $\pm$ 0.33)%、(7.98 $\pm$ 0.76)% vs (12.09 $\pm$ 0.91)%、P <0.05]; 且3组的 Foxp3 mRNA均降低[ (0.05 $\pm$ 0.02)、(0.16 $\pm$ 0.02)、(0.25 $\pm$ 0.02) vs 1, P <0.05]; Treg分泌IL-10量减少[ (26.13 $\pm$ 7.28)、(44.88 $\pm$ 3.72)、(79.77 $\pm$ 3.94) vs (133.00 $\pm$ 12.32) pg/ml, P <0.05], 分泌TGF- $\beta$ 量也减少[ (9.25 $\pm$ 0.84)、(16.70 $\pm$ 1.00)、(20.47 $\pm$ 1.60) vs (26.05 $\pm$ 1.81) pg/ml, P <0.05]。结论: IL-21在体外可减少CML患者外周血中Treg的比例, 并抑制其功能。

关键词: [慢性粒细胞白血病 \(CML\)](#) [IL-21](#) [调节性T细胞\(Treg\)](#) [IL-10](#) [TGF- \$\beta\$](#)

Effect of IL-21 on regulatory T cells in chronic myeloid leukemia patients [Download Fulltext](#)

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Abstract:

Objective : To observe the effect of interleukin-21(IL-21) on CD4<sup>+</sup>CD25<sup>+</sup> regulatory T cells (Tregs) in chronic myeloid leukemia (CML) patients. Methods: Peripheral blood mononuclear cells (PBMCs) were collected from newly diagnosed CML patients in the Hematology Department of Second Hospital of Lanzhou University, and CD4<sup>+</sup>T cells were isolated by magnetic beads. CD4<sup>+</sup>T cells were co-cultured with IL-21 (50, 100, and 200 ng/ml) and saline respectively for 72 h, and then the Treg ratio was determined by flow cytometry; Foxp3 mRNA expression was examined by real-time PCR; and IL-10 and TGF- $\beta$  in different cell supernatants were detected by ELISA. Results: Compared with the control group, the ratios of Treg in CD4<sup>+</sup>T cells were decreased in 50 ng/ml, 100 ng/ml and 200 ng/ml IL-21 groups [(3.42 $\pm$ 0.76)%, (6.81 $\pm$ 0.33)%, (7.98 $\pm$ 0.76)% vs (12.09 $\pm$ 0.91)%, P <0.05]; and Foxp3 mRNA expressions were also decreased [(0.05 $\pm$ 0.02), (0.16 $\pm$ 0.02), (0.25 $\pm$ 0.02) vs 1, P <0.05], the levels of IL-10 [(26.13 $\pm$ 7.28), (44.88 $\pm$ 3.72), (79.77 $\pm$ 3.94) vs (133.00 $\pm$ 12.32) pg/ml, P <0.05] and TGF- $\beta$  [(9.25 $\pm$ 0.84), (16.70 $\pm$ 1.00), (20.47 $\pm$ 1.59) vs (26.05 $\pm$ 1.81) pg/ml, P <0.05] in cell supernatants were significantly decreased. Conclusion: IL-21 can inhibit the ratio and function of Treg in peripheral blood of CML patients.

Keywords: [chronic myeloid leukemia \(CML\)](#) [IL-21](#) [regulatory T cell \(Treg\)](#) [IL-10](#) [TGF- \$\beta\$](#)

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