Poster

[P25-8] P25-8: Immunosuppressive drugs (3): Biomarkers and pharmacokinetics

Chair: Hideyuki Motohashi, Japan

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[P25-8-5] Regulation of cellular and soluble Tim-3 in renal transplant recipients treated with sirolimus- or tacrolimus-based immunosuppressive regimens

Ya-Mei Li[1], Yun-Ying Shi[2], Yi Li[3], Yang-Juan Bai[4], Xiao-Juan Wu[5], Bei Cai[6], Ye Tao[7], Lan-Lan Wang[8] (1.West China Hospital of Sichuan University, 2.West China Hospital of Sichuan University, 3.West China Hospital of Sichuan University, 4.West China Hospital of Sichuan University, 5.West China Hospital of Sichuan University, 6.West China Hospital of Sichuan University, 7.West China Hospital of Sichuan University, 8.West China Hospital of Sichuan University)

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Background

T-cell immunoglobulin domain and mucin domain-3 (Tim-3) is an activation induced negative regulator of adaptive immune response and is reported to participate in the induction of allograft tolerance. However, whether Tim-3 is affected by different immunosuppressive regimens has not been well documented. Therefore, our aim was to explore whether the tacrolimus (TAC) and sirolimus (SRL) would affect the cellular and soluble Tim-3 in renal transplant recipients (RTs) differently.

Methods

We collected periphery whole blood and serum samples from 15 RTs treated with TAC-based regimen, 16 RTs treated with SRL-based regimen and 16 healthy controls. The expressions of Tim-3 on CD4+ and CD8+ T cells were determined by flow cytometry. The concentration of soluble Tim-3 (sTim-3) was determined by enzyme-linked immunosorbent assays (ELISA).

Results

Surface expressions of Tim-3 on CD4+ and CD8+ T cells were significantly higher in SRL group than those in HC group (Fig. A and B), while no difference was observed between SRL and TAC groups. In the two RTs groups (SRL and TAC), sTim-3 were significantly increased when compared with HC group, but no difference was observed between SRL and TAC groups (Fig. C). Correlation analysis revealed that sTim-3 was significantly and positively correlated to cellular Tim-3 (Fig. D and E). In addition, serum creatinine (Scr) levels were positively correlated with sTim-3 (Fig. F), but not with cTim-3.

Conclusions

Our results indicated that there was a comparable up-regulation of cellular and soluble Tim-3 in RTs under different immunosuppressive treatment. Moreover, sTim-3 is positively associated with Scr, suggesting that sTim-3 may be a promising noninvasive biomarker of renal function in RTs.

Zoom image