Poster

[P26-5] P26-5: Immunosuppressive drugs (4): Individualized dosage adjustment

Chair: Kohshi Nishiguchi, Japan

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[P26-5-5] High tacrolimus clearance and acute rejection risk after renal transplantation

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Background

Patients with high tacrolimus (Tac) clearance eliminate more drug within a specific dose interval. Missed and also delayed doses will result in transient periods of lower Tac concentrations in high- versus low clearance patients. Transient subtherapeutic Tac concentrations may induce acute rejection episodes.

Methods

A retrospective study in all renal transplant patients treated with Tac at our center from 2009 to 2013 was conducted. The association between individually estimated clearance (using daily tacrolimus dose [mg] / trough concentration [g/L] as a marker) and biopsy-proven acute rejection (BPAR) the first 90 days post-transplantation was investigated.

Results

In total, data from 638 patients treated with Tac were included in the analysis. During the first 90 days post transplantation 85 (13.3%) patients experienced BPAR, after a median (IQR) of 8 (5-31) days. Patients were stratified into four groups according to their estimated clearance. The patients in the high clearance group showed significantly higher incidence of BPAR (20.6%) with a hazard ratio (HR) of 2.39 (95% CI; 1.30-4.40, P <0.006) compared to the low clearance group (9.3%). Clearance estimate (as a continuous variable) had a HR of 2.25 (95% CI; 1.70-2.99, P<0.001) after adjusting for other risk factors. There were no differences neither in trough concentrations the first week after transplantation nor in time to target trough concentration between patients experiencing BPAR or not.

Conclusions

High estimated Tac clearance is significantly associated with increased risk of BPAR the first 90 days post-transplantation and may be a useful clinical risk factor for prediction of rejection in the early phase following renal transplantation.