
Poster

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

Chair: Kohshi Nishiguchi, Japan

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[P26-5-10] Sequential tacrolimus trough monitoring during the first month of renal transplantation

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Background

Dose individualization of tacrolimus in the first month after renal transplantation is challenging. Attaining and maintaining target trough concentrations at the earliest is critical in this period. In developing countries where the cost of management post-transplant should be kept affordable, clinicians are often faced with the dilemma of how often to monitor tacrolimus in the early post-transplant period.

Methods

In our centre, patients are started at least three days prior to renal transplant with a dose of 0.1 mg/kg of tacrolimus. When maintained on the same pre-transplant dose, the mg/kg dose of tacrolimus changes after transplant because of variation in body weight. Retrospective data for newly transplanted patients from January 2016 to February 2017 was analyzed focusing on the tacrolimus dosing, concentration and biochemical parameters over the first month post-transplant.

Results

The first month post transplant was divided into five categories, 1-3 days, 4-7 days, 8-14 days, 15-21 days and 22-30 days. One hundred and six patients had a total of 326 visits in this first month. The median (IQR) of the measured tacrolimus concentration was 11.4(6.9, 13.4), 4.4(2.7, 8.1), 4.9(3.8, 8), 6.95(5.2, 8.9) and 7.4(5.5, 9.1) ng/ml in the five time periods respectively. The median (IQR) of the dose normalized tacrolimus concentration was 7.5(6.2, 13.95), 4.1(2.7, 6.8), 3.1(2.6, 4.6), 3.9(2.6, 7.1) and 4.8(3.5, 7.1) ng/ml for the five periods respectively, which demonstrated an overall significant difference between the different periods ($p < .0001$) by Kruskal Wallis test. The interpatient variability in the normalized tacrolimus concentration in the five time periods were 46.3%, 112.2 %, 203.6 %, 59.3 % and 53.8% respectively. Both albumin and hemoglobin were significantly decreased on days 1 - 7 days post transplant compared to the later period. Of the 326 monitoring visits, 215, 80 and 31 visits in the first month had tacrolimus trough concentrations <8 , 8-12 and >12 ng/ml respectively. The median (IQR) dose prescribed was 0.14 (0.1, 0.17), 0.14 (0.12, 0.17) and 0.12 (0.1, 0.14) mg/kg in patients with tacrolimus trough <8 , 8-12 and >12 ng/ml respectively.

Conclusions

Renal transplant patients require intensive monitoring of tacrolimus in the first month post-transplant.