Poster

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

Chair: Kohshi Nishiguchi, Japan

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[P26-5-8] Relationship between exposure to tacrolimus, adherence and quality of life in kidney transplant recipients

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Keywords: Tacrolimus, Exposure, Adherence, Quality of life

Background

This study aims to evaluate the association between tacrolimus exposure and quality of life (QOL) in renal transplant patients during the first year post-transplantation, which has never been reported so far.

Methods

Tacrolimus exposure, adherence to treatment and QOL were collected in 345 renal transplant patients on tacrolimus followed up for one year after transplantation. Tacrolimus exposure was estimated by means of pre-dose concentration (C_0) or of the area under the curve (AUC_{0-12}), determined by Bayesian estimation using our Internet-based ABIS expert system (https://www.pharmaco-limoges.fr). Self-reported physical (PCS-QOL) and mental (MCS-QOL) quality of life and adherence were estimated using the SF-36 and MMAS-4 questionnaires. The influence of covariates on physical QOL was investigated using a time-dependent Cox proportional hazard model with R software.

Results

Mean C0 was 8.4±2.9 g/L (n=499) and mean AUC0-12 was 155±53.1 h.g/L (n=182). The number of C_0 and AUC per patient varied between 1 and 7, and 0 and 4 respectively. Physical QOL was considered impaired (PCS-QOL<40) in 107 patients (31%), with a median delay of 61 days [1-196]. No association was found between adherence and tacrolimus exposure. No association was found either between physical QOL and age, sex, adherence or tacrolimus AUC_{0-12}. Multivariate analysis evidenced associations between physical QOL and occurrences of $C_0>10$ g/L (HR=1.69, IC95%[1.19;2.39], p=0.0031), and between physical and impaired mental QOL (MCS-QOL<40) (HR=1.71, IC95%[1.20;2.42], p=0.0027).

Conclusions

This is the first study reporting a significant relationship between tacrolimus C_0 and QOL in renal transplantation. The absence of relationship between AUC_{0-12} and QOL may be due to a lack of power because of too few available AUC_{0-12}. QOL deterioration may be related to the occurrence of adverse effects in patients with high exposure to tacrolimus. Finally, no relationship was evidenced between adherence and tacrolimus exposure, suggesting that the sole blood concentrations do not allow detecting poorly-adherent patients.