The once-daily tacrolimus extended-release formulation provides similar drug exposure in non-CF and CF lung transplant recipients when compared to the conventional twice-daily formulation

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Non-compliance with immuno-suppressive drug therapy is a significant risk factor for graft rejection. It has been shown that the once-daily tacrolimus (PRO) extended-release formulation (ADV) instead of the conventional twice-daily formulation (PRO) might improve compliance. The objectives of our study were to obtain pharmacokinetic (PK) data in stable lung transplant (LTx) recipients converted from PRO to ADV and to compare PK data obtained with ADV in non-CF and CF LTx recipients. Nineteen patients (9 CF) were studied. PRO PK profiles were collected on 3 consecutive days. Patients were then switched to ADV on a 1:1.1 mg basis and ADV PK profiles were collected at steady-state on 3 consecutive days. Tac exposure over 24 hrs was computed as the area under the concentration-time curve (AUC0−24h) for ADV and as the AUC0−12h x 2 for PRO. The AUC was determined by Bayesian estimation, using a one-compartment PK model with first-order elimination and the absorption phase described by a double gamma distribution. Mean tac exposure was compared between subjects and formulations using 2-way ANOVA. In non-CF LTx recipients the mean PRO and ADV dose was 2.3±1.5 mg BID and 5.0±3.1 mg QD; there was no difference in mean tac exposure between PRO and ADV (244±56 vs. 246±76 h·mg/L, p=0.722). In CF LTx recipients the mean PRO and ADV dose was 3.3±1.6 mg BID and 7.2±3.8 mg QD; mean tac exposure with PRO was marginally superior to ADV (287±60 vs 275±37 h·mg/L, p=0.019) with this conversion ratio. PRO and ADV provided similar mean tac exposures in non-CF and CF LTx recipients. These encouraging results should be confirmed in a larger patient sample.

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