Safety and efficacy of conversion to once-daily tacrolimus from twice-daily tacrolimus in pediatric liver transplant recipients

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Background: Nonadherence of immunosuppression is the most common cause of late acute rejection in pediatric liver recipients. Simpler dosing regimens promote better compliance behavior, especially in pediatric patients.

Methods: We screened 182 pediatric liver transplant (LT) recipients converted from twice daily tacrolimus (TD-TAC, Prograf) to once daily tacrolimus (OD-TAC, Advagraf) between February 2011 and September 2019. Tacrolimus trough levels, doses of tacrolimus, and liver function tests (LFT) were recorded in 3 months intervals 18 months before and after conversion.

Results: One hundred and seventy-nine patients were converted to OD-TAC and followed for 18 months. One hundred and fifty-four out of 179 patients (86.0%) converted to OD-TAC and were uneventful during follow-up. Twenty-one patients had LFT elevation above 80 U/L. These patients' LFT normalized after OD-TAC dose adjustment (n=12) or switching back to TD-TAC (n=9). Four patients had biopsy-proven acute rejection within 6 months after conversion, and all of which were successfully treated with steroid pulse. Currently, 166 out of 179 patients (92.7%) remain on OD-TAC and 13 patients (7.3%) were switched back to TD-TAC. Mean tacrolimus trough level significantly decreased at 3 months (3.14 ± 1.9 ng/mL) following conversion compared to pre-conversion level (3.69 ± 1.98 ng/mL). Mean tacrolimus trough levels remained unchanged from 3 to 12 months following conversion. Mean daily tacrolimus dosage was increased from pre-conversion dosage (1.60 ± 1.29 mg) to initial conversion dose (1.76 ± 1.31 mg) and once again at 3 months (1.80 ± 1.23 mg) following conversion. Tacrolimus dosage remained unchanged from 3 to 12 months. Percent coefficient of variation of tacrolimus trough levels was significantly decreased from 32.5 ± 16.4 to 27.5 ± 15.6 ng/mL after conversion to OD-TAC, reflecting the decrease in variation of tacrolimus trough levels following conversion.

Conclusions: Conversion to OD-TAC in pediatric LT recipients with stable graft function is safe and effective.

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