

High Postoperative Tacrolimus Variability Predisposes to Early Pancreas Graft Loss

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Abstract

Background: The therapeutic index for tacrolimus (Tac) is relatively narrow and can vary postoperatively in pancreas transplantation (PancTx) recipients secondary to various factors. We hypothesised that intra-patient Tac variability (%Coefficient of Variance; Tac %CoV) after PancTx would influence early patient outcomes.

Methods: 45 pancTx recipients in our centre between 2009-2014 were retrospectively reviewed. The %CoV was calculated using their inpatient Tac levels [(standard deviation Tac trough level/mean Tac trough level) x 100]. Patients were then separated into 2 groups, of HIGH and LOW variability, depending on their relationship to the median and outcomes were compared.

Results: Tac %CoV ranged between 19.02% and 114.9% with a mean of 46.95% (median value 45%). Patients with a value >45% (HIGH) had a decreased 1 year survival of 58% vs. 83% (p=0.026). Cold ischaemia time (HR 1.263, p=0.019) and an episode of rejection whilst an in-patient (HR 3.656 , p=0.049) are predictors of graft loss.

Conclusions: Tac %CoV is significantly greater in PancTx recipients when compared with kidney transplant recipients. Even in the era of Campath induction, it is possible that more grafts are being lost to rejection related complications than previously thought. Further studies are required before definitive conclusions can be drawn.

Key words: tacrolimus variability, pancreas transplantation, graft loss, acute rejection