

Pre-operative Predictors of Health-Related Quality of Life for Pancreas Transplant Recipients

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Background

Pancreas transplantation restores endocrine pancreatic function. Nevertheless, it is also burdened by high perioperative morbidity and mortality. There is a general consensus that surgical risks must be balanced against clinical outcomes as well as post-transplant health-related quality of life. There is currently a paucity of robust evidence on prognostic factors to inform clinical decision making on post-transplantation health-related quality of life resulting in a reliance on anecdotal case studies. It is possible that recipient phenotypes lead to differential treatment effects on post-transplant health-related quality of life

Aims

The aim of this study is to identify the relative importance of pre-operative recipient and donor factors as possible predictors of post-pancreas transplant health-related quality of life.

Methods.

We use data from a prospective cohort of over 200 pancreas transplant recipients who underwent either simultaneous pancreas kidney (SPK), pancreas transplant alone (PTA) or pancreas transplant after kidney (PAK) at Oxford University Transplant Centre, UK, from 2002 to 2011. A large number of pre-transplant clinical and demographic variables for recipient and donor were linked to recipient post-transplant health-related quality of life, as measured by the EuroQoL EQ-5D-3L instrument. Uncertainty in possible prognostic factors for post-transplant health-related quality of life was accommodated within a Bayesian Model Averaging (BMA) framework with a uniform prior to assess the relative importance of pre-transplant recipient and donor variables.

Results

The use of a uniform prior within BMA assumes all potential predictors are equally plausible. However, the posterior inclusion probability attached greater weight to a much smaller number of key pre-transplant predictors for post-transplant health-related quality of life. Key variables at recipient level included BMI, pre-existing vascular conditions (Stroke, Peripheral Vascular Disease and Ischaemic Heart Disease/Angina) as well as cause of diabetes. No donor level covariates were identified as important predictors for recipient post-transplant health-related quality of life.

Conclusions

Recipients with lower BMI and absence of vascular comorbidities had better QoL post-transplant. However, QoL was not affected by donor factors, suggesting that QoL outcomes may be in part determined pre-transplant. This analysis gives insight into factors associated with the best outcomes after pancreas transplantation and will inform the design of a prospective study into the causal effect of pancreas transplantation on health-related quality of life.