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Pre-transplant history of mental health concerns, non-adherence, and post-transplant outcomes in kidney transplant recipients

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ABSTRACT

Objective: The association between pre-transplant mental health concerns and non-adherence and post-transplant outcomes after kidney transplantation is not fully established. We examined the relationship between a pre-transplant history of mental health concerns and non-adherence and post-transplant outcomes among kidney transplant recipients.

Methods: In this retrospective single center cohort study of adult kidney transplant recipients (n = 955) the associations between the history of mental health concerns or non-adherence and the time from kidney transplant to biopsy proven acute rejection; death-censored graft failure and total graft failure were examined using Cox proportional hazards models.

Results: Mean (SD) age was 51 (13) years, 61% were male and 27% had a history of diabetes. Twenty-two and 11% of patients had mental health concerns and non-adherence, respectively. Fifteen percent of the patients had acute rejection, 5.6% had death-censored graft failure and 13.0% had total graft failure. The history of mental health concerns was not associated with acute rejection, death-censored graft failure or total graft failure. Patients with versus without a history of non-adherence tended to have higher cumulative incidence of acute rejection (23.3% [95% CI: 16.1, 33.2] vs. 13.6% [95% CI: 11.4, 16.2]) and death-censored graft failure (15.0% [95% CI: 6.9, 30.8] vs. 6.4% [95% CI: 4.7, 8.7]) (log rank p = 0.052 and p = 0.086, respectively). These trends were not significant after multivariable adjustment.

Conclusion: In summary, a history of pre-transplant mental health concerns or non-adherence is not associated with adverse outcomes in patients who completed transplant workup and received a kidney transplant.

1. Introduction

Many patients with end-stage kidney disease experience mental health or behavioral challenges, including psychiatric conditions, cognitive, psychological, and social problems [1–7]. These may interfere with adherence to complex medical regimens or attending follow-up appointments after KT [8–13]. Consequently, active psychosocial or behavioral problems are sometimes considered to be relative contraindications to KT, due to concerns about inferior post-transplant outcomes. However, there is general agreement that a history of these conditions should not be an absolute contraindication [14–19]. We have documented that patients with, compared to without a history of mental health concerns (MH) or non-adherence (NA) have lower access to KT [7].

NA with immunosuppressive medications post-transplant is associated with de novo donor specific antibody, rejection and graft loss [20–23]. We are aware of only one study that addressed the link between pre-transplant NA and post-transplant outcomes in KT recipients [24] and demonstrated that pre-transplant NA predicted post-transplant outcomes. Given the paucity of data, the potential association between pre-transplant NA and post-transplant outcomes remains unclear [25,26].

Recent studies suggested similar outcomes for solid organ transplant recipients with and without pre-existing serious mental illness [27–29].

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However, a systematic review [30] demonstrated an association between depression (either pre- or post-transplant) and increased mortality after solid organ transplant. Importantly, however, all three reports that included only KT recipients assessed depression only post-transplant. Consequently, it is not clear if pre-transplant MH is associated with worse outcomes after KT.

To elucidate the relationship between a pre-transplant history of MH or NA, and post-transplant outcomes (biopsy-proven acute rejection [BPAR]; death-censored graft failure [DCGF]; total graft failure [TGF]), we conducted a cohort study of patients managed in a large Canadian transplant center. We hypothesized that patients with a pre-transplant history of MH or NA are at an increased risk for poor post-transplant outcomes.

2. Materials and methods

2.1. Study design and population

Approval for this study was obtained from the University Health Network Research Ethics Board. The clinical and research activities being reported are consistent with the principles of the "Declaration of Helsinki" and the "Declaration of Istanbul".

This is a single-centre, retrospective cohort study of adult (≥ 18 years old) patients who underwent KT at the Toronto General Hospital between July 1, 2004 and December 31, 2012, and were followed until December 31, 2013 (n = 1355). All transplanted patients for whom information about pre-transplant history of MH and NA could be ascertained were included. We excluded patients with previous KT (n = 154) because we felt that the experience with post-transplant care, and the relationship with a transplant team may have a modifying impact on the relationship between MH, NA and outcomes. The number of such patients with MH or NA was small (30 and 24, respectively). We excluded multiorgan transplant recipients (simultaneous or sequential, 145 and 87, respectively, because we felt that the presence of another organ failure in addition to end stage kidney disease may have an impact on the prevalence and the types of MH or NA, and may impact post-transplant behavior. Post-transplant outcome assessment would also have been complex (e.g. discordant failure between kidney and pancreas grafts, graft loss and death in heart, liver or lung transplants). Patients who experienced primary non-function (n = 14) were also excluded (Fig. 1).

The primary source of information about MH and NA was the pre-transplant social work assessment notes. At our institution patients are referred for pre-transplant assessment after completing pre-transplant testing (laboratory testing, imaging, cardiac assessment, etc.) at their referring dialysis or pre-dialysis clinic. These patients are then all assessed by a social worker, transplant coordinator and a transplant nephrologist. Additional evaluations may be pursued as necessary. Importantly, psychosocial assessment by the social worker is part of the routine evaluation for all candidates. Our sample selection generated a cohort of patients who were deemed eligible from a medical, surgical and psychosocial perspective, and eventually received a KT.

2.2. Data sources and management

Patient information was collected from the Organ Transplant Tracking Record and from electronic and paper charts. Organ Transplant Tracking Record is an electronic medical record system at the Multi-Organ Transplant Program to manage referred, wait-listed, and transplanted patients. After audits for completeness and accuracy the data are stored in our in-center research database (Comprehensive Renal Transplant Research Information System) [31]. The Comprehensive Renal Transplant Research Information System contains recipient, donor, transplant, and follow-up data for all patients who received KT at the Toronto General Hospital since 2000.

Details of our psychosocial data collection have been described in details elsewhere [7,32]. Briefly, we created a data collection form to record psychosocial information from the pre-transplant social work assessment notes. The social work assessment was a semi-structured interview, focusing on, among other areas, mental health and NA (history of MH problems and treatments, past or current concerns regarding NA). In addition to self-report by the patient, the social worker relied on multiple sources of information about both MH and NA (collateral information from relatives, medical documentation, letters from psychiatrists, referring nephrologists and social workers in the referring dialysis units and other communications received from the referring centers). No standardized questionnaires, scales or interview schedules were used during these assessments.

These notes had been transcribed or scanned into Organ Transplant Tracking Record. The overall structure and content areas of the social work evaluation had not changed during the study period. If information was absent or unclear in the social work notes, letters dictated by

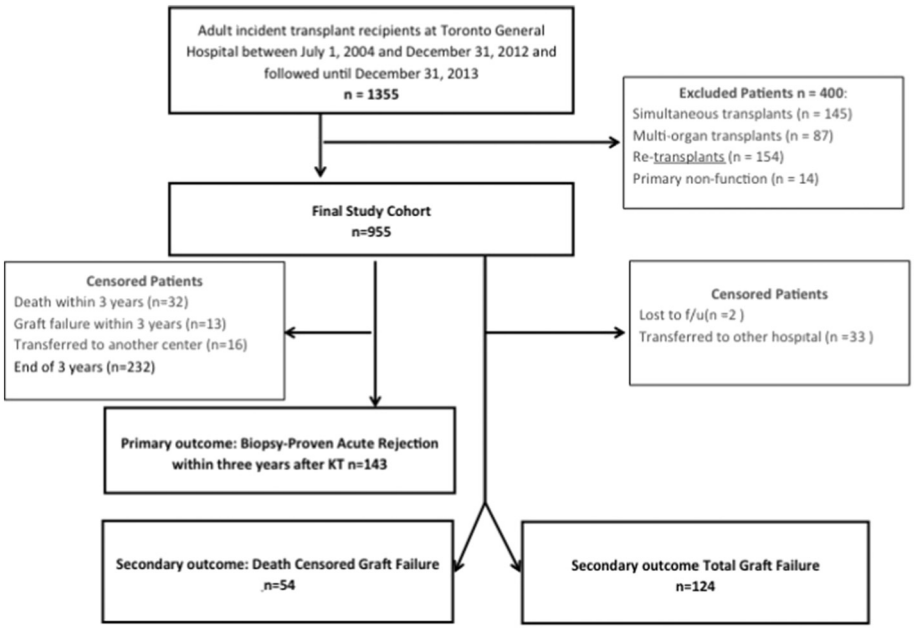

Fig. 1. Study Flow Diagram.