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INVITED COMMENTARY

Is kidney transplantation safe after careful selection of the recipients with a history of psychotic disorder?

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Based on Eurotransplant 2016 annual report, 10 476 patients have been waiting for kidney transplantation, while only 3301 deceased donor transplantation has been performed in Eurotransplant region in 2016 [1]. Similar to Europe, significant mismatch of supply and demand has been detected in the United States of America (USA). According to the 2015 Organ Procurement and Transplantation Network (OPTN) and Scientific Registry of Transplant Recipients (SRTS) annual data report, a total of 18 597 adult and pediatric kidney transplants were performed in the United States in 2015, while 97 680 wait for transplantation [2]. Only 20–30% of the patients waiting for transplantation have been transplanted each year in Europe and USA, and this chance is much lower if the patient has a history of any type of psychiatric disorder, especially a psychotic disorder.

The prevalence of both bipolar disorder and schizophrenia is around 1–4% in the general population [3,4]. Both schizophrenia and bipolar disorder showed an association with common and strong risk factors of chronic kidney disease (CKD) such as diabetes mellitus, hypertension, hyperlipidemia and cardiovascular disease [5]. In addition, treatment of bipolar disorder with lithium has a strong association with development and worsening of CKD [6].

There is very few absolute contraindication for kidney transplantation; psychiatric disorders, specifically even psychiatric patients with a history of psychosis, are a relative contraindication by most organ transplant societies around the world [7–10]. There are several reasons for this, including concerns in relation to relapse of psychiatric illness, medication and other post-transplant treatment nonadherence, inadequate social support, emotional and cognitive capability, and potential drug interactions between psychotropic and immunosuppressant medications [11,12]. However, there are very few data to support these concerns and mainly stem from post-transplantation period [13].

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Published data on post-transplant outcomes in patients with pretransplant psychotic disorders are extremely limited, and what is available in the literature is mainly case reports and very small observation studies [14–19]. The biggest study assessed the association between post-transplantation psychosis and outcomes [13]. Psychosis was associated with nearly two-times higher risk of graft loss and death [13]. In addition, graft loss due to noncompliance was almost three times more likely in recipients with psychosis compared to recipients without psychosis [13]. Observational studies [12,16,17,19], have shown the feasibility of transplantation in patients with psychiatric disorders with an excellent patient and allograft survival rate. The largest study examined 164 Veteran organ transplant recipients, 40 of them received kidney graft, and reported excellent outcomes in the first three years after transplantation [17]. Similar results were reported using Irish National Renal Transplant Programme [12]. Comparison of 15 patients with a diagnosis of bipolar affective disorder and six patients with schizophrenia with the rest of the recipients showed no significant differences between the bipolar affective disorder or schizophrenia group and the general renal transplant group in relation to patient survival, graft survival and graft function [12]. Well-known risk factors of allograft loss were antisocial behavior, associated depression, medical noncompliance, history of psychotic episode more than one year before transplantation, homelessness and isolation [5,20]. All of these previous studies were small, focusing on patient and allograft survival and have severe methodological limitations such as low number of events, lack of accounting for competing risk in transplant outcomes and lack of important confounders such as medical comorbidities, medications and laboratory data. Consequently, the association between pretransplantation psychotic disorders and graft and patient outcomes post-transplantation is still unknown. In the current issue of the *Journal*, Kofman and colleagues presented results of retrospective data analysis from five French kidney centers, which shows that careful recipient selection can lead to a safe kidney transplantation in recipients with bipolar disorder/schizophrenia [21].

Kofman *et al.* [21] compared post-transplant survival, graft loss and psychiatric outcomes of 34 recipients with bipolar disorder and 13 recipients with psychotic disorders. Four patients received living donor transplantation and two transplants were pre-emptive. These recipients were matched for age, gender, time of transplant and center of transplant with two recipients without psychotic disorder from French national registry (CRISTAL). The recipients and their graft survival were similar between the two groups. The strength of their analysis was to count for competing events, but only nonadjusted analysis was performed due to very low event number. The study was underpowered with lack of adjustment for confounders [21]. It is quite possible that after adjustment for comorbidities, medications and laboratory abnormalities, the results would be different. Larger studies are needed to answer this question.

Another very important result of this study is that almost half of the recipients with psychosis developed relapses after transplantation [21]. Four of the 47 recipients stopped their immunosuppressive medications, which led to three allograft losses. Not only is careful pretransplant section important in this population, but a very close follow-up for psychosis relapse and early recognition of medication nonadherence with possible avoidance of high-dose steroid, are cornerstones of follow-up care these recipients.

This study has significant contributions to the field of transplantation and provides evidence that transplantation can be safe even in patients with history of psychotic disorder. However, the misinterpretation of this data can be dangerous. It is important to note that while all these recipients have been transplanted, they underwent very careful recipient selection process while they were listed for transplantation. The study does not support that all end-stage renal disease (ESRD) patients with psychotic disorder would be eligible for transplantation. Of the 8750 recipients transplanted in these centers, only 47 (0.5%) had psychotic disorder, which indicates that many the ESRD patients with psychotic disorder will never be transplanted. What this study really demonstrates is that the selection process in these five French centers was successful and there was no difference in graft and patient outcomes. While this result is exciting and encouraging, we need more data from different parts of the world to confirming these results and also illustrate that the post-transplantation medication adherence is acceptable in these recipients.

Conflict of interest

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Transplant International 2018; 31: 364–366