Transplant Psychiatry: An Introduction, Part 1

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Psychiatrists are playing an ever-increasing role in the evaluation and care of organ transplant candidates and living organ donors—before and after transplant.

Organ transplantation is the accepted treatment for many patients with chronic or acute advanced organ disease and certain types of cancer. Currently, there are over 120,000 patients in the US waiting for solid organ transplant (nearly 100,000 are kidney transplant candidates), and the wait list continues to grow. However, because of the shortage of donated organs, only about 30,000 transplants are performed each year and 10% to 18% of candidates will not survive to transplant. Most wait a year or more for a donated organ, while many kidney candidates wait 3 to 5 years. Most organ transplant programs recognize the need for a multidisciplinary team to assist with the complexities of transplant patient care. Moreover, the United Network for Organ Sharing recognizes that “mental health and social support services are essential for the total care of transplant recipients, living donors and their families” and thus requires the availability of such services by trained individuals. Historically, psychiatrists and mental health professionals contributed primarily during the pretransplant evaluation phase, assisting transplant teams in determining the suitability of candidates for transplant and preparing candidates for the procedure.

Over the past 3 decades, the increasing numbers of candidates and recipients as well as the expansion of organ transplantation to more than 500 programs in the US have both increased the demand for mental health services within transplant programs and fostered the development of a specialized area of transplant psychiatry. Psychiatrists are increasingly considered integral members of the transplant team and are often embedded within the transplant units and clinics to provide continuity of psychiatric care. The limited organ availability; extensive health care resources required; and degree of personal responsibility, self-management, and strict adherence to transplant directives needed of transplant recipients for successful outcomes necessitate careful candidate selection. Psychiatrists evaluate the extent to which psychiatric, psychological, and behavioral disorders may contribute to poorer outcomes and assist in designing treatment plans to ameliorate identified risks. Following transplant, psychiatrists may be consulted on psychiatric or behavioral issues as they arise during the recovery period. Innovative strategies for dealing with these complex patients have been developed, including the adaptation of common therapeutic strategies specifically for transplant-related scenarios.

Phases of transplant
Organ transplant is not a singular surgical event but a series of transitions between specific phases beginning with the diagnosis of advanced organ disease. From referral to the transplant team to long-term adaptation to life as a transplant recipient, each phase is associated with different stressors that require different skills and resources from patients, their family and friend caregivers, and the mental health clinicians who care for them. The Figure illustrates the potential medical and psychosocial stresses inherent in each phase for patients and their caregivers. The pre-transplant phase is commonly associated with anxiety over being evaluated and accepted onto the transplant wait list. Many patients and their families initially experience elation and relief over being listed but then find the uncertainty of waiting for an organ to be the most psychologically stressful part of the transplant experience. Those who have been chronically ill may look forward to transplant with its potential to improve their quality of life, while those who became acutely ill may view transplant with apprehension. Patients can experience a slow decompensation or rapid progression from acute exacerbations. Wait-list patients can experience medical events (eg, infection, stroke, myocardial infarction) that may make them ineligible for transplant.
While maintaining hope, patients and families may need to prepare for significant deterioration or death. Patients and caregivers must have adequate resources to adapt to the patient’s changing status and needs, including loss of role functioning, medical care and therapies, loss of physical functioning, and requiring assistance with activities of daily living. Families may experience financial hardships related to the cost of medical care, loss of the patient’s employment, or loss of the caregiver’s work time and wages.

In the early phase following transplant, patients often experience elation over surviving to receive an organ. Patients may expect the transplant will quickly restore their original health and quality of life. However, the realizations of post-transplant care and recovery can lead to frustration and discouragement. Not only is the post-transplant regimen complex, but patients may have become deconditioned and may require significant physical rehabilitation to achieve better functioning. They may have persistent cognitive deficits due to previous organ disease or post-transplant immunosuppressant medications.

Post-transplant complications or setbacks can lead to significant demoralization in some patients. Patients can develop psychological issues related to transplant—even PTSD related to the transplant experience—or they may have an exacerbation of an existing psychiatric disorder. Caregiver assistance is essential at this time until the recipient can function independently.

Over the long term, transplant typically improves but does not fully restore quality of life. Patients may feel chronically ill, develop new health problems, or experience various degrees of physical or cognitive impairments. Despite these potential issues, they may also experience pressure to return to work or other responsibilities. They may have financial difficulties, especially with health care costs. They also must deal with potential long-term sequela of transplant, including the adverse effects of immunosuppression. Long-term complications are not inconsequential. For example, within 5 years, 15% to 20% of non-renal recipients have advanced renal failure due to post-transplant immunosuppression.²

The role of the psychiatrist in transplantation

Psychiatrists play a significant role in the evaluation and care of organ transplant candidates and living organ donors—before and after transplant. The psychiatrist often functions as a transplant team member who assists in candidate evaluations and selection and provides direct care to patients awaiting transplant, as well as those in the perioperative or longer post-transplant phases. In other cases, teams may utilize a psychiatrist as a consultant to assist in these tasks. The aims of the pretransplant psychiatric evaluation are summarized in the Table. The main goal is to determine whether there are psychiatric or psychological factors that may interfere with the patient’s ability to cope with the demands of the transplant. Substance use disorders, mood and anxiety disorders, and neurocognitive impairment are common in this population.

Although transplant teams may look to the psychiatrist as a “gatekeeper” or “detective” who will weed out candidates at high risk for poor outcomes, the psychiatrist should aim at enhancing patient candidacy whenever possible. This may require recommending formal addictions treatment, 12-step groups, psychotherapy, medications, neuropsychological testing, or referral to mental health providers in the community.

If a patient is receiving mental health care outside of the transplant center, the psychiatrist assists by providing communication, education, and care coordination between the team and outside provider or facility. When significant character pathology is present, the psychiatrist may help the transplant team develop coordinated approaches to reduce regressed behavior, such as splitting, that adversely affects the provision of effective medical care.

To facilitate the candidate evaluation, transplant-specific structured psychosocial assessment tools have been developed that can aid in a more standardized, uniform evaluation of psychosocial risk factors. These tools include Transplant Evaluation Rating Scale (TERS), Psychosocial Assessment of Candidates for Transplantation (PACT), and Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT).³⁻⁵ However, their value in predicting post-transplant outcomes is still under investigation.

Prevalence and impact of psychiatric illness in the transplant population

To accomplish the aims of the evaluation described above, the psychiatrist must be familiar with the prevalence of psychiatric presentations in transplant patients and with their impact on medical outcomes and quality of life. Patients with advanced medical illnesses that lead to transplant have increased rates of depression and anxiety. For example, 25% of patients with heart disease have MDD at some point in their lives;⁶ 19% and 32% of adult patients with cystic fibrosis have elevated depression and anxiety symptoms, respectively;⁷ and 37% of patients with chronic kidney disease report depression.⁸
Depression and anxiety may continue after transplant. One study found that 58% of lung transplant recipients and 47% of heart transplant recipients experienced mood or anxiety disorders within the first 2 years after transplant; moreover, these disorders were frequently comorbid. In particular, 26% to 30% of these patients experienced MDD, 15% experienced PTSD related to the transplant, 14% to 22% had adjusted disorder with anxiety, and 8% to 18% had panic disorder. Depression can lower the quality of life and adversely affect medical outcomes after transplant. In a meta-analysis of 27 studies that included heart, liver, kidney, lung, and pancreas recipients (N = 53,158), depression was found to increase the relative risk of mortality by 65%. In addition, depression (but not anxiety) has been associated with increased death-censored graft loss in kidney recipients.

In a more recent study of lung transplant recipients, early post-transplant depression was associated with bronchiolitis obliterans syndrome, graft loss, and mortality. Evidence suggests that treatment of depression in recipients might improve post-transplant survival. Cognitive disorders are also common in transplant populations, including pre-transplant, immediate post-transplant, and long-term post-transplant. It is important for psychiatrists to evaluate cognitive functioning in transplant candidates. Not only can impaired cognition have significant ramifications for the informed consent process, it might also make it more challenging for patients to care for themselves and follow their complex medical regimens, and it places a greater burden on their support system. Transplant candidates are at risk for cognitive impairment because of either an underlying disease process or comorbid neurovascular complications. For example, 47% of lung recipients had cognitive impairment before transplant. A high prevalence of cognitive impairment has been reported in patients with liver cirrhosis and in those with end-stage kidney disease. In the immediate post-transplant period, acute cognitive impairment can occur as a part of delirium or can be induced by medications. Delirium has been reported in 37% to 73% of lung transplant recipients and 10% of liver recipients. Delirium is associated with increased mortality in liver transplant recipients, and prolonged intensive care unit and hospital stays in liver and lung transplant recipients.

A rare (1% to 2% of transplant recipients) but serious neurotoxic complication of immunosuppressive medications is the posterior reversible encephalopathy syndrome (PRES), which can cause delirium and/or a wide variety of neurological symptoms. Corticosteroids, necessary in high doses immediately after transplant, may induce psychosis, mania, anxiety, or insomnia. Cognitive impairment may also persist into the post-transplant period. A large majority (80%) of lung transplant recipients with prior neurocognitive impairment remain impaired at 3-month follow-up, and new cognitive impairment develops in 70% of liver recipients by 1 year after transplant. Immunosuppressant medications may also contribute to new or persistent neurocognitive impairment after transplant. Some patients require organ transplant because of disease related to alcohol, tobacco, or illicit drug use. End-stage liver disease due to hepatitis C, which is frequently contracted via intravenous drug use, and alcoholic liver disease account for over 60% of liver transplants. Chronic obstructive pulmonary disease, associated with tobacco use, leads to approximately one-third of all lung transplants. While 1- and 5-year survival rates are more favorable in patients with alcohol-related liver disease than in recipients whose liver transplant resulted from other causes, the 10-year survival is worse in those who relapse on alcohol. Most programs have a mandatory 6-month abstinence rule prior to listing; however, this particular duration of sobriety has not been strongly validated in the literature. Some patients need longer sobriety and rehabilitation to significantly reduce their risk of relapse. On the other hand, if carefully selected, patients with fulminant alcoholic hepatitis who do not have time to maintain sobriety can have good post-transplant outcomes. Interestingly, a large meta-analysis of mostly liver transplant patients did not demonstrate that alcohol relapse in this patient population is associated with noncompliance. However, relapse is associated with an increased risk of cancer and cardiovascular disease. A large study of patients with end-stage renal failure found tobacco, alcohol, or drug use up to the time of diagnosis was associated with a small but significant increased risk of graft loss. Tobacco use in renal recipients is associated with higher rates of various cancers, cardiovascular disease, graft loss, and death. Involvement of the psychiatrist in treatment planning and delivery may decrease relapse after transplant, especially if there is continuity of addiction treatment care.

Patient with serious mental illness (eg, bipolar disorder, psychotic disorders) are underrepresented in transplantation. There is limited evidence that these patients have poorer outcomes or are less adherent to directives. However, careful selection, expert management, good social support, and a
collaborative relationship with the transplant team can ensure that even complicated patients have good posttransplant outcomes.

**Summary**

We have reviewed the various phases of transplant—from pre-transplant to post-transplant. There is an increased prevalence of psychiatric presentations in transplant patients; thus, psychiatrists with their unique knowledge are integral members of the transplant team from pre-transplant through post-transplant and beyond.

In the second part of this article, to be published in the October issue, we will discuss the psychiatric management of transplant patients and the evaluation and care of living organ donors.

![Figure. Potential medical and psychosocial stresses inherent in each p...](image)

![Table – Aims of pretransplant psychosocial evaluation of organ recipients](image)

**Disclosures:**

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**References:**


