Tools, techniques to assess organ transplant candidates

Address anxiety, depression, and substance abuse before and after surgery

With nearly 30,000 organ transplants being performed in the United States each year (Box 1), demand is growing for psychiatrists to provide presurgical and ongoing care. How you might collaborate with a transplant team depends on each medical center’s protocols and individual patients’ mental health needs. A transplant candidate with depressive or anxiety symptoms may be referred to you for presurgical stabilization, for example, particularly if the patient lives far from a highly specialized transplant center.

Transplant assessments differ from usual psychiatric evaluations. Your findings will be used to help the transplant team evaluate the patient’s demographics, disease severity, and resources to give the patient the best chance for medical recovery. Inform patients at the beginning of the pretransplant evaluation that the results:

- will be shared with the transplant team
- may be used to help make decisions about transplant
- will not be the only factor determining if a transplant center will place a patient on an organ wait list.

Pretransplant evaluation

Presurgical assessment helps determine the patient’s understanding of the transplant process and ability to provide consent (Table 1). Patients do not need a high level of medical sophistication to discuss transplantation, but they must understand the

Box 1

Organ transplants: Not experimental anymore

In 2006, U.S. surgeons performed 28,931 organ transplants, bringing the total number of transplants since 1988 to >400,000. Each year, more kidney transplants are performed (17,091 in 2006) than all other organ transplants combined, according to the nonprofit United Network of Organ Sharing.

Other organs being transplanted include liver, pancreas, heart, lung, and intestine. Some patients receive multiple organs, such as kidney/pancreas or heart/lung. As this article went to press, >96,000 candidates were on wait lists for organ donations.

Survival after transplantation has improved because of better immunosuppressant therapies introduced in the early 1980s and evolving physician and institutional experience. One-year survival rates for single-organ transplants range from 85% for lung to 98% for living donor kidney. Five-year survival rates range from 47% for lung to 86% for living donor kidney.

Source: Reference 1
basics of the procedure and be able to rationally discuss their options. If a patient has severe cognitive impairment, dementia, or hepatic encephalopathy and cannot participate in the consent process, a surrogate is necessary.

Explore the patient’s attitudes and beliefs about transplant. If other team members have educated the patient about the procedure, your assessment can help determine how much the patient understood and if the patient has the capacity to make treatment decisions. Some patients believe the operation will “cure” them, despite education about the rigorous posttransplant routine. Alert the transplant team to these views, and begin aligning the patient’s views with reality.

Assessing psychiatric comorbidity. Like other patients with life-threatening medical illnesses, many transplant patients present with major depression and anxiety. Screen for symptoms of mood and anxiety disorders and past episodes of depression or mania. Explore the patient’s response to psychiatric treatment, current therapies, and history of treatment adherence.

Depression. Patients listed for transplant are seriously ill and coping with the difficulties of the sick role. Organ failure symptoms and resultant disability—such as insomnia, anorexia, fatigue, and impaired concentration—overlap with depression’s neurovegetative signs. Suspect depression if a patient presents with anhedonia, tearfulness, apathy, or guilt.

Among heart, lung, and liver transplant candidates, the reported lifetime prevalence of depression averages approximately 20%.4,6

Anxiety disorders. An estimated 40% of transplant patients have anxiety disorders,7 which may be caused by:

• stress of chronic illness
• uncertainty of the transplant process
• medical conditions such as hypothyroidism or pulmonary embolism.

Chronic mental illness. Patients with major mental illnesses such as schizophrenia might be appropriate candidates for organ transplant if they have adequate social support and history of treatment compliance.

Psychopharmacology. Because of the variety of medical problems seen in transplant candidates, carefully consider medication side effects and drug-drug interactions when prescribing psychotropics.

Antidepressants. Among the selective serotonin reuptake inhibitors (SSRIs), citalopram, escitalopram, and sertraline are least likely to affect hepatic metabolism of other medications (Table 1, page 58).8 If a patient presents with liver failure, reduce the dosages of medications with hepatic metabolism.

Benzodiazepines. Use caution when treating anxiety with benzodiazepines because of the risk of tolerance, withdrawal, and dependence. Avoid benzodiazepines when treating transplant candidates with a substance abuse history. Also, these drugs might worsen hepatic encephalopathy and increase confusion.

Patients awaiting lung transplantation, especially those with high levels of CO2 retention, require special care because benzodiazepines might decrease respiratory drive. Try other agents such as buspirone, gabapentin, SSRI’s, or second-generation antipsychotics to treat their anxiety.

Psychotherapy. Supportive psychotherapy can help patients navigate the often-
Clinical Point

Effective treatment of substance abuse is essential because 30% to 50% of liver transplant patients relapse after the procedure.

Assessing substance abuse

Up to 50% of liver transplant candidates have a history of alcohol and/or drug abuse, the highest rate among transplant populations. Alcohol-induced cirrhosis and hepatitis C contracted from IV drug use are common indications for liver transplant. Effective treatment of substance abuse is essential because 30% to 50% of these patients relapse after the procedure. Assess:

- each substance abused, including onset, peak, and current use
- family history of substance abuse disorders
- past efforts at rehabilitation
- tobacco use (smoking before and after transplant is related to an increased incidence of new cancer diagnoses)

Some transplant centers require patients with substance use disorders to participate in 12-step programs or rehabilitation. Regardless of the institutions’ requirements, encourage patients to participate in rehabilitation to prevent relapse and mitigate the negative impact of substance abuse on physical and mental well-being.

Mental status examination includes the usual elements such as appearance, behavior, speech, affect, and thought process. Assess for suicidal thinking or hopelessness, which have been linked to serious medical illness. Question patients about hallucinations and give special attention to visual aberrations, which may occur in medically ill patients.

Cognitive testing. Use tools such as the Mini-Mental State Examination, clock drawing test, and Trail Making A and B tests to assess cognitive ability. If patients show signs of cognitive impairment, arrange for follow-up examinations and refer for neuropsychological testing.

Some cognitive impairment—such as that caused by hepatic encephalopathy—will likely improve after transplant, but other types—such as that caused by vascular disease—will not. If confusion is caused by hepatic encephalopathy, treatment with lactulose might rapidly improve symptoms. Remember that patients with hepatic encephalopathy might not exhibit elevated ammonia levels. Underlying causes of worsening hepatic encephalopathy—such as infections or bleeding—might require treatment.

Assessing adherence. Medication adherence after transplant is essential to prevent organ rejection and other complications. Posttransplant regimens are complex, and the frequency of follow-up assessments can be intense—particularly in the first year after transplant.

Your pretransplant assessment can identify where patients have struggled with adherence in the past. Before the transplant, your team can work to correct barriers such as inability to pay for medications, child care problems, or transportation needs.

Personality disorders have been identified as predictors of posttransplant adherence.
highest dose of oral olanzapine (15±2.5 mg/d). In controlled clinical trials of intramuscular olanzapine for injection, there were no statistically significant differences from placebo in occurrence of any treatment-emergent adverse events. A complete list of adverse events, assessed by either rating scales incidence or spontaneously reported adverse events.

**Other Adverse Events:** Eosinophilia of adverse events was assessed using data from this same clinical trial involving 3 feed oral dosage range (5±2.5, 10±2.5, or 15±2.5 mg/d) compared with placebo. At this dose range, treatment-emergent adverse events, assessed by either rating scales incidence or spontaneously reported adverse events.

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• passive coping strategies
• poor physical status after transplantation.16,17

Carefully monitor patients who present with these factors after transplant. Treat depression with supportive measures designed to improve the patient’s social network and coping skills and pharmacotherapy. Select antidepressant medications based on side effect profiles and impact on the patient’s transplanted organs.

Substance abuse. Patients with a pretransplant history of substance abuse often relapse. Among transplant recipients with a history of alcoholic liver disease, drinking rates of 30% to 40% have been reported 5 years after transplant. Most of these data represent occasional use, not heavy or regular drinking.18 Relapse can occur despite careful assessment and follow-up.

Some evidence suggests that transplant patients who resume drinking have worse outcomes than those who abstain. Alcoholism relapse has other negative consequences, such as relationship problems and employment difficulties.

Predictors of relapse include:
• pretransplant history of alcohol dependence
• family history of alcoholism
• rehabilitation history, which could indicate a severe substance abuse disorder.3

Medications for alcoholism treatment have not been studied systematically in transplant patients, but low doses of acamprosate, ≤2 g/d, and naltrexone, ≤200 mg/d, are options for patients interested in pharmacotherapy. Support from 12-step programs also helps treat substance-abusing patients.

Altered mental status. Immunosuppressive medications—including cyclosporine, tacrolimus, and prednisone—can have neuropsychiatric effects and could cause a change in mental status (Table 3).19 Check cyclosporine and tacrolimus serum levels against reference ranges when delirium is present. If levels are toxic the dosage often can be lowered, which might lead to clinical improvement.

### Table 3

<table>
<thead>
<tr>
<th>Medication</th>
<th>Side effects</th>
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</thead>
<tbody>
<tr>
<td>Cyclosporine</td>
<td>Tremor, headache, seizures, hallucinations, delirium</td>
</tr>
<tr>
<td>Tacrolimus</td>
<td>Tremor, headache, vivid dreams, anxiety, anorexia, seizures, delirium</td>
</tr>
<tr>
<td>Prednisone</td>
<td>Depression, mania, psychosis, delirium</td>
</tr>
</tbody>
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Source: Adapted from references 3,7

Quality of life. In general, patients’ quality of life improves after their transplant. After the first year—which patients might find difficult because of changes in physical and social status—quality of life typically improves.5

Psychiatric disorders such as depression can worsen quality of life. However, quality of life can improve after depression is diagnosed and treated. Other predictors of improved quality of life include older age, marriage, and the absence of a personality disorder.4

Other posttransplant concerns of patients include changes in employment, finances, and relationships. Patients often have been away from work before transplant, and returning after a long absence can be stressful. Patients may find that they cannot work as well as before becoming ill, which may lead to frustration, depression, and/or anxiety symptoms. Transplant surgery requires a large financial investment, and money concerns usually persist long after the transplant.

The transplant recipient’s role within the family may shift after surgery. Families might expect the patient to “return to normal” and resume old activities. Alternatively, family members might continue to treat the patient as a person with chronic illness despite physical improvement. If patients are struggling with these changes, supportive psychotherapy is indicated.

**References**
Posttransplant patients might not be able to work as well as before becoming ill, leading to depression or anxiety.


Bottom Line

As survival rates and quality of life for organ transplant patients improve, the number of patients awaiting and receiving transplants will increase. The psychiatric management of these patients can improve quality of life and strengthen coping skills during difficult times. Managing depression and anxiety before and after transplant can increase the probability of a successful medical outcome for patients and their families.