Trillium Gift of Life Network

Ontario's Referral and Listing Criteria for Simultaneous Islet-Kidney Transplantation

Version 1.0

Ontario Health
Trillium Gift of Life Network

Adult Simultaneous Islet-Kidney Transplantation Referral & Listing Criteria

PATIENT REFERRAL CRITERIA:

The patient referral criteria are guidelines which a Health Care Provider would utilize to refer a patient to a transplant center for assessment. Simultaneous islet-kidney transplantation should be considered in end-stage renal failure patients with type 1 diabetes (based on absent c-peptide) who are not considered suitable for whole pancreas transplant.

PATIENT LISTING INDICATIONS:

Each patient is assessed individually for their suitability for transplantation by the transplant program. The criteria identified below are the agreed criteria for which a patient may be eligible to be waitlisted for simultaneous islet-kidney transplantation in Ontario.

1. **Not suitable for whole pancreas transplant:** Patients who are not considered suitable for whole pancreas transplant secondary to:
    a. Severe peripheral vascular disease
    b. Insufficient CV reserve

2. **Diabetes:** Patients with type 1 diabetes (confirmed by C-peptide measurement), or those who have lost beta-cell function from pancreatectomy or chronic pancreatitis.

3. **End Stage Renal Disease:** ESRD from any cause

4. **Medical Stability:** Patients should be physically able to withstand surgery and immunosuppression to be eligible for transplantation.

5. **Psychosocial Considerations:** Patients should be emotionally and psychologically stable to be considered for simultaneous islet-kidney transplantation. Patients must be non-smokers to be eligible for transplantation.

ABSOLUTE LISTING CONTRAINDICATIONS:

The following are conditions relating to the transplant candidate that constitute absolute contraindications to simultaneous islet-kidney transplantation. As such, they prevent a transplant from being done until the condition is resolved.

1) **Co-Morbidities:** Patients with any co-morbidity that decreases the likelihood of surviving 5 years post-transplant to below 50% or whom which the peri-operative risk is deemed to be unacceptably high by the evaluation team, are not candidates for transplantation.

2) **Consent:** Patients who do not want a transplant should not be listed for transplantation.

3) **Post-Transplant Care:** Patients with an inadequate or unsafe post-transplant care plan are not candidates for transplantation.

4) **Psychosocial Considerations:** Patients who display social support/compliance issues that prohibit adherence to therapy (e.g. compliance with medications) are not candidates for transplantation. Transplantation should be delayed until patients have demonstrated adherence to therapy for at least 6 months.

5) **Smoking:** Smoking is an absolute contraindication to transplantation.

6) **Malignancy**: In general, patients with an active malignancy are not candidates for transplantation. Transplant candidates with a previous history of malignancy should be tumour-free before proceeding with transplantation. Specific contraindications include:

    1. **Liver Cancer:** Transplantation is generally not recommended for patients with liver cancer.
    2. **Active Multiple Myeloma:** Patients with active multiple myeloma should not undergo transplantation, although patients with myeloma who have had a successful stem cell transplant may be considered.

    Most renal transplant candidates with a history of malignancy should wait a period of time between successful treatment and transplantation. Patients who do not meet the following waiting period criteria are not eligible for transplantation.

    1. **Bladder Cancer:** Patients with bladder cancer must wait at least 2 years from successful treatment to transplantation, although superficial low-grade lesions may not require any waiting time.
    2. **Breast Cancer:** Patients with breast cancer must wait at least 5 years from successful treatment to transplantation. Patients with early in situ (e.g., ductal carcinoma in situ) lesions may only require a 2-year wait.
    3. **Cervical Cancer:** Patients with cervical cancer must wait at least 2 years from treatment to transplantation. Patients with in situ cervical lesions may proceed with transplantation before the 2 year wait period.
    4. **Colorectal Cancer:** Patients with colorectal cancer must wait at least 5 years from successful treatment to transplantation. A shorter waiting time of 2–5 years may be sufficient in patients with localized disease.
    5. **Hodgkin's Disease, Non-Hodgkin's Lymphoma, Post-Transplant Lymphoproliferative Disorder, or Leukemia:** Patients with these diseases must wait at least 2 years from successful treatment to transplantation.
    6. **Lung Cancer:** Patients with lung cancer must wait at least 2 years from successful treatment to transplantation.

7. **Melanoma:** Patients with melanoma must wait at least 5 years from successful treatment to transplantation. Patients with in situ melanoma may be considered for transplantation after waiting at least 2 years.
8. **Basal Cell Carcinoma of the Skin:** Patients do not require any waiting time after successful removal before proceeding with transplantation.
9. **Squamous Cell Carcinoma of the Skin:** There is no firm recommendation on wait time.
10. **Renal Cell Carcinoma:** Patients with renal cell carcinoma must wait at least 2 years from successful treatment to transplantation. Patients with small, incidental tumours may not require any waiting period. Patients with large or invasive or symptomatic tumours may require a waiting period of 5 years.
11. **Wilms' Tumour:** Patients with Wilms' Tumour must wait at least 1 year from successful treatment to transplantation.
12. **Testicular Cancer:** Patients with testicular cancer must wait at least 2 years from successful treatment to transplantation.
13. **Thyroid Cancer:** Patients with thyroid cancer must wait at least 2 years from successful treatment to transplantation.

7) Pulmonary Disease: Patients who require home oxygen therapy (Grade C), have uncontrolled asthma, or have severe cor pulmonale are not candidates for transplantation. Patients with severe chronic obstructive pulmonary disease (COPD) – pulmonary fibrosis or restrictive disease with any of the following parameters are not candidates for transplantation:

- Best forced expiratory volume in 1 s (FEV_1) < 25% predicted value;
- PO_2 room air < 60 mmHg with exercise desaturation, SaO_2 < 90%;
- > 4 lower respiratory infections in the last 12 months; or
- Moderate disease with evidence of progression.

8) Cardiac Disease: Patients with inoperable valve disease should not be considered for transplant. Patients with severe irreversible (non-uremic) cardiac dysfunction should not be listed for transplantation..

All transplantation candidates should be assessed for the presence of ischemic heart disease (IHD) before transplantation. The minimum required investigations include medical history, physical examination, electrocardiogram (ECG), echocardiogram, stress test with imaging (e.g.dobutamine stress echo or dipyridamole MIBI) and a chest radiograph. Patients with IHD in the following situations are not eligible for transplantation:

- Patients with progressive symptoms of angina;
- Patients with a myocardial infarction within 6 months;
- Patients without an appropriate cardiac workup; or,
- Patients with severe diffuse disease, especially with positive non-invasive tests in whom intervention is not possible and in whom expected survival is sufficiently compromised so that transplantation is not reasonable.

9) Peripheral Vascular Disease: Patients with large uncorrectable abdominal aneurysms, severe occlusive common iliac disease, active gangrene or recent atheroembolic events are not candidates for transplantation.

10) Gastrointestinal Disease: Patients with the following conditions are not candidates for transplantation:

- Acute pancreatitis within 6 months;
- Active inflammatory bowel disease; or,
- Active peptic ulcer disease until disease is successfully treated.

11) **COVID-19 Vaccination:** Refusal to be vaccinated for COVID-19 is an absolute contraindication to simultaneous islet-kidney transplantation.

RELATIVE LISTING CONTRAINDICATIONS:

The following are conditions relating to the transplant candidate that constitute relative contraindications. While each patient is evaluated on an individual basis, the presence of one or more of the following may preclude acceptance as a candidate for simultaneous islet-kidney transplantation.

1) **Age and functional capacity:** Generally, patients over the age of 70 are not candidates for simultaneous islet-kidney transplantation.

   Cognitive or neurodevelopmental delay is not an absolute contraindication.

2) **Weight:** Generally, patients weighing less than 10kg should not undergo transplantation.

3) **Kidney Function:** Patients with evidence of kidney disease that have a high rate of recurrence and no effective therapy to prevent graft loss post-transplant may not be considered for transplantation.

4) **Psychosocial Considerations:** Cognitive impairment is not an absolute contraindication to transplantation. However, particular care must be taken to ensure that informed consent can be obtained and that a support system is in place to ensure adherence to therapy and patient safety. A history of psychiatric illness is not an absolute contraindication to kidney transplantation. Capacity should be evaluated when indicated.

   Transplantation should be delayed until the patient has demonstrated freedom from substance abuse for at least 6 months.

5) **Obesity:** Referrals will be accepted on patients with a Body Mass Index (BMI) of <30 kg/m^2. Patients with a BMI >30 kg/m^2 will be evaluated on an individual basis by the transplant team.

6) **Systemic Diseases:** Systemic diseases leading to End Stage Renal Disease (ESRD) are usually not a contraindication to transplantation; however, the presence and severity of extra-renal disease will often determine whether transplantation is an option.

7) **Infections**: Patients with the following infections may not be eligible for transplantation:
   - Patients with active infection, whether of viral, bacterial or fungal origin.
   - Patients with chronic open infected wounds.

   Patients meeting the following criteria may be considered for transplant:

1. Serostatus for cytomegalovirus and Epstein–Barr virus should be assessed before transplant but should not determine eligibility for transplantation.
2. All patients being assessed for transplantation should be screened for HIV infection. HIV-infected patients with end-stage renal failure may be considered for kidney transplantation if they meet the following criteria:
    - Demonstrated adherence to a highly active anti-retroviral therapy (HAART) regimen;
    - Undetectable (< 50 copies/mL) HIV viral load for > 3 months;
    - Cluster of differentiation (CD4) lymphocyte count > 200/mL for > 6 months;
    - No opportunistic infections;
    - Willingness to use prophylaxis against cytomegalovirus infection (CMV), Herpes simplex virus, Pneumocystis carinii pneumonia and fungal infection;

8) Pulmonary Disease: Patients with moderate or severe chronic obstructive pulmonary disease (COPD)–pulmonary fibrosis or restrictive disease with any of the following parameters may not be considered for transplantation:

- Best Tiffeneau-Pinelli index (FEV_1) 25–50% of predicted value;
- Partial pressure of oxygen (PO_2) room air < 60–70 mmHg;
- Restrictive disease with exercise desaturation, SaO_2 90%.

9) Cardiac Disease: All patients should be assessed for the presence of ischemic heart disease (IHD) before transplantation. The minimum required investigations include medical history, physical examination, electrocardiogram (ECG)), echocardiogram, stress test with imaging (e.g.dobutamine stress echo or dipyridamole MIBI) and a chest radiograph. Patients with IHD should be eligible for transplantation if they fall into one of the following categories:

- Low-risk asymptomatic patients;
- Asymptomatic patients with negative non-invasive testing;
- Patients who have undergone successful intervention; or
- Patients who on angiography have non-critical disease and are on appropriate medical therapy.

Left ventricular (LV) dysfunction is not necessarily a contraindication to kidney transplantation. Uremic LV dysfunction may improve after transplantation, thus it is not necessarily a contraindication to wait listing.

10) Cerebral Vascular Disease: Transplantation should be deferred in patients with a history of stroke or transient ischemic attack for at least 6 months following the event. The patient should be stable, fully evaluated and treated with risk-reduction strategies before transplantation.

11) Peripheral Vascular Disease: The presence of pre-transplant peripheral vascular disease (PVD) is not an absolute contraindication to transplantation. However, the risk of death is increased and the presence of PVD should be considered in the context of other comorbidities in determining eligibility for kidney transplantation.

12) Gastrointestinal Disease: The presence of asymptomatic cholelithiasis is not a contraindication to transplantation. Patients with chronic pancreatitis in remission for less than 1 year may not be eligible for kidney transplantation.

13) **Liver Disease:** Patients who are hepatitis B surface antigen positive or hepatitis C antibody positive should be considered for transplantation. However, eligibility will depend on other considerations such as viral load, liver function, liver histology and portal pressure.

    Transplant candidates with decompensated cirrhosis should not be considered for simultaneous islet-kidney transplantation.

14) **Genitourinary Disease:** A urologic cause of ESRD is not necessarily a contraindication to transplantation provided appropriate urinary tract drainage can be achieved. Transplantation is not contraindicated in patients with a dysfunctional bladder.

15) **Hematologic Disorders:** The presence of thrombophilia, hypercoagulable state or cytopenias is not an absolute contraindication to transplantation, but these conditions should be fully investigated.

16) **Hyperparathyroidism:** Hyperparathyroidism is not an absolute contraindication to transplantation, but should be fully investigated. Parathyroidectomy should be considered for those who have failed medical management or have severe, persistent complications of hyperparathyroidism.

Version Control

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