



Another achievement in organ transplantation in Australia — yet much still needs to be done

Australia's first liver–intestinal transplant is a major achievement, yet access to life-changing organ transplantation remains limited

Around the world, intestinal transplantation has become the standard of care for patients with irreversible intestinal failure associated with life-threatening complications of parenteral nutrition. Until the recent establishment of an intestinal transplantation service in Victoria, Australians with strong indications for intestinal transplantation had to either succumb to their condition or travel overseas at great financial and psychosocial expense. Very few Australians have had this opportunity.¹

To date, over 2600 intestinal transplants have been performed worldwide, with over 55% involving simultaneous transplantation of liver and other abdominal organs. Currently 35 centres are actively involved in intestinal transplantation, now including the Victorian Liver Transplant Unit. Despite improving expertise and outcomes from intestinal transplantation, over the past few years the number of transplants performed per year worldwide has been steadily declining. The main reason for this is likely to be the major improvement in outcomes for patients with intestinal failure managed with parenteral nutrition and intestinal adaptation. This is good news for many Australians with intestinal failure as intestinal transplantation remains a complex and dangerous procedure and is not readily accessible, particularly for Australians living outside Victoria.

It is vital that intestinal failure patients are managed within a multidisciplinary intestinal failure service. Establishment of intestinal transplantation as a modality of treatment for these patients should be within such an environment, where every effort is made to provide optimal outcomes with home parenteral nutrition (HPN), surgical management and strat-

egies to facilitate gut adaptation. The use of improved parenteral nutrition formulae based on fish oil rather than soy-based lipid emulsion, particularly in children, has led to a marked reduction in the development of intestinal failure-associated liver disease, while bowel lengthening procedures, such as serial transverse enteroplasty, have also had a major impact on the requirement for ongoing parenteral nutrition with its risk of sepsis and other complications. HPN, the mainstay of treatment for patients with intestinal failure, is generally well tolerated and is associated with high survival rates.² The vast majority of the 118 Australian patients (94 adults and 24 children) on HPN in 2011 were independent in managing their HPN under the supervision of a multidisciplinary team, and were able to undertake normal activities, with very few requiring access to intestinal transplantation.³

As is clear from the complexity of the case reported by Garg and colleagues in this issue of the Journal,⁴ the ability to provide intestinal transplantation is reliant on an experienced multidisciplinary team. An absolute requirement, however, is the ability to access appropriate donor organs. Ideal donors for intestinal transplantation should be under the age of 50 and smaller in size than the intended recipient. Unfortunately, Australia has a major problem in providing organ transplantation to its citizens. In 2011, there were only 337 donors providing access to transplantation for over 1000 patients.⁵ More than 1500 patients were on transplant waiting lists in Australia in 2011, but this is likely to be an underrepresentation of the real demand for transplantation, as many potential transplant recipients never make it onto transplant waiting lists.⁶

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Very few of the donors in Australia could be classed as “ideal”. The age of donors is steadily increasing, with over 50% of donors aged over 50 years, and 19% over 65 years in 2011. Further, the cause of death is increasingly from cerebrovascular events, often with a background of widespread vascular disease, longstanding hypertension and obesity, which often make organs unsuitable for transplantation. An increasing number of organs are from donation after cardiac death (DCD) donors, rather than traditional heart-beating deceased after brain death (DBD) donors. These donors are unsuitable for cardiac and intestinal transplantation, and are frequently unsuitable for liver transplantation because of their prolonged warm ischaemic times, which predispose to complications such as poor allograft function or intrahepatic biliary strictures. Much of the touted increase in deceased organ donation since the introduction of the Australian Organ and Tissue Donation and Transplantation Authority in 2009 has resulted from an increase in the number of DCD donors rather than DBD donors, and has had little impact on overall transplantation rates.⁵

Organ transplantation, including intestinal transplantation, is the standard of care for many patients suffering from end-stage organ failure. Transplantation offers significant survival outcomes, as well as marked improvements in quality of life. However, the low donor rate, which limits access to transplantation, is resulting in significant numbers of people dying on transplant waiting lists⁷ or remaining with long-term ill health and poor quality of life. The cost to the community is significant.

The solution to this problem has to be multifaceted. We must have an effective and sustained improvement in organ donation rates to bring Australia in line with countries in North America and Europe that are able to provide transplan-

tation to two to three times as many patients as we do. At the same time, it is essential that we have public health strategies to prevent many of the chronic conditions that require transplantation, such as smoking, alcohol misuse, obesity, diabetes and viral hepatitis. We hope that effective preventive strategies and treatments for many of these health problems may obviate the future need for transplantation for many people.

There is no doubt that the capacity to provide intestinal transplantation to Australians in Australia is a step forward for the rare individual who is suffering life-threatening complications of intestinal failure. However, it is crucial that every effort is made to provide transplantation to the thousands of Australians with renal failure, liver failure and cardiopulmonary failure who are currently suffering or dying on transplant waiting lists.

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