

HEART TRANSPLANTATION

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The incidence of heart failure is increasing as the population ages and coronary artery disease, hypertension and obesity rise. Current medical therapy, including resynchronisation pacemakers and implantable defibrillators, is effective in improving symptoms and survival but many will develop end-stage disease for which heart transplantation remains the gold standard surgical treatment. Experimental procedures by Demikhov in the 1940s and the xenotransplantation of a chimpanzee heart into a patient with intracardiac thrombus by Hardy in 1964 led Lower and Shumway at Stanford University, CA, USA, to demonstrate that the circulation could be maintained entirely by an orthotopically transplanted heart. The first clinical heart transplant was undertaken in 1967 by the South African Christian Barnard, but mortality remained very high until the advent of modern immunosuppressants. Heterotopic heart transplantation, in which a donor heart is transplanted as a biological biventricular assist with the native heart remaining in place, was first used clinically in 1974 but is now seldom used as long-term survival is poor.

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