



Appendix

**This appendix was part of the submitted manuscript and has been peer reviewed.
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Appendix to: van der Stelt JM, Verran JD, deRoo RA, et al. Initial outcomes of using allografts from donation after cardiac death donors for liver transplantation in New South Wales. *Med J Aust* 2013; 199: 104-106. doi: 10.5694/mja12.11465.

Australian National Liver Transplant Unit Protocol for Liver Retrieval from DCD donors

Donor Selection: Age<45 years, BMI<30, no significant Liver Injury or abnormality, meets other suitability criteria for Donation after Brain Death (apart from Brain death), the expectation of a rapid progression to cardiac death after withdrawal of treatment.

Goal of DCD Procurement: To maximise the number of organs available for transplant with good post-transplant outcomes. The procurement of kidneys from DCD donors should not be compromised by the attempted procurement of other organs.

Withdrawal of treatment: Withdrawal of treatment will ideally be in the operating theatre complex. Withdrawal in the Intensive Care Unit is possible, but may add warm ischemic time and compromise the quality of the liver and sometimes make liver retrieval not possible.

Monitoring: Donors should have blood pressure and oxygen saturation monitoring from the time of withdrawal until the time of cardiac death. The liver will be considered for procurement when the time from treatment withdrawal to aortic perfusion is <30 minutes.

Diagnosis of cardiac death and timing: Death is diagnosed and documented by a doctor from the donors treating team (not part of the transplant team). Five minutes must pass between the declaration of death and initiation of the surgery. This time can be used to prepare the donor.

Operating theatre: The operating theatre is prepared prior to the withdrawal of treatment. All instruments are opened and checked. A thrombolytic agent (Tissue Plasminogen Activator [TPA]) is prepared and opened once cardiac standstill has been observed in the donor.

Operative Procedure: Three abdominal donor surgical staff plus the scrub nurse are required. Diathermy is not used. Suction is prepared early. A long midline incision from sternal notch to symphysis pubis is used. The aim is to cannulate the aorta as quickly as possible (usually <3 minutes after skin incision). A clamp is placed on the thoracic aorta, and blood is vented from the atrium.

Organ preservation and flush: TPA and 20,000 units of Heparin are given initially with 1 litre of room temperature Ross solution (at room temperature to allow action of TPA). 4-8litres of 4°C Ross then follows. University of Wisconsin Solution (2-4 litres is then given). Further flushing on the back table is then required through the hepatic artery, portal vein and bile ducts (1 litre UW with 10,000 units of Heparin).

Removal of organs: The liver is removed prior to the kidneys and placed in an icy bath until further flushing and packing for transport.