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# Guidance Document

## ***DONOR CORONARY ANGIOGRAPHY PROTOCOL***

ATCA-TSANZ Guidelines 002/2015

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## **1 Purpose**

To provide a guideline for donor hospital cardiac catheter labs for performing coronary angiography for heart assessment.

## **2 Preamble**

The Donor Coronary Angiography Protocol has evolved from the guidelines developed in a number of jurisdictions. The Cardiac Advisory Committee (CAC) of the Transplantation Society of Australia and New Zealand (TSANZ) endorsed the Protocol on 1<sup>st</sup> November 2012 and agreed to deploy it as a reference document for performing coronary angiography for Australia and New Zealand donor hospitals conducting heart assessment.

This guidance document does not establish legally enforceable responsibilities; the words “protocol” and “guidelines” are used interchangeably to describe the recommended practice. The word ‘should’ in this document means that something is suggested or recommended, but not required. It is noted that the guidelines may not represent the sole approach and jurisdictions may use alternative methods.

Mention of specific products or equipment in this document does not represent an endorsement of such products or equipment by the Transplantation Society of Australia and New Zealand (TSANZ) nor does it necessarily represent preference for those products or equipment over similar competitive products or equipment. It is incumbent on the reader who intends to use any information, forms or procedures contained in this document to evaluate such materials for use in the light of operational requirements associated with his or her facility.

## **3 Introduction**

Coronary angiography is an invasive procedure that requires contrast and may not be suitable for all heart donors. Coronary angiography is used in the setting of heart assessment to determine the presence and/or extent of coronary artery disease (CAD).

Concerns regarding adverse effects of angiography on renal transplant outcomes appear to be unfounded. Early studies examining the impact of cerebral angiography revealed no adverse impact on subsequent renal transplant function or graft survival, with the possible exception of diabetic donors[1-3]. More recent studies of coronary angiography have also revealed no adverse impact of angiography on renal transplant outcomes[4-7].

On the other hand, donor coronary angiography has been associated with significantly better heart transplant outcomes compared to no angiography in donors at high risk of coronary artery disease[4]. Moreover the cost of donor coronary angiography was more than offset by a reduction in retrieval costs when the donor was found to have extensive coronary disease that precluded heart transplantation[5].

#### 4 Donor Heart Allocation Protocol

TSANZ heart allocation protocol differentiates between the standard and extended criteria heart donation[8] (Table 1). Coronary angiography is expected to be suitable for heart donors within the extended criteria category with risk factors for coronary artery disease.

**Table 1: Donor Heart Allocation**

Standard Criteria Donor	Extended Criteria Donor
Age < than 50 years	Age 50-60 years
No known significant cardiac disease	Anticipated ischaemic time >360mins
Not dependant on high inotropes	High dose inotropic support
	Graft dysfunction on ECHO
	Donor comorbidities

#### 5 Indications for Coronary Angiography

Coronary angiography should only be performed at the request of the heart transplant physician or surgeon. This may need direct communication between the heart transplant physician and the cardiologist/intensivist on duty for the donor hospital. Communication between the transplant physician and donor hospital is facilitated by the transplant coordinator and DonateLife coordinator.

**Table 2: Indications for Coronary Angiography**

Indications	Including but not limited to
History of suspected CAD	Myocardial infarct, angina
LV dysfunction on ECHO	Wall motion abnormalities, EF<45%
Risk factors	Age > than 50 years, obesity BMI> 30, hypercholesterolemia, diabetes, smoking, cocaine use and significant family history of CAD.

#### 6 Procedure

Coronary angiogram is performed with minimal contrast.

Investigations that should not be performed unless specifically requested are:

- Left ventricular angiogram.
- Aortogram.

#### 7 Documentation

Files containing digital images/video clips of the angiogram are to be included in the electronic donor record. The final angiogram report by the cardiologist must be scanned and emailed to the transplant physician and transplant coordinator via the Electronic Data Record (EDR).

## 8. References

1. Hietala, S.O., et al., *Effects of contrast media on renal graft function and survival after cerebral angiography of cadaveric donors*. Acta Radiol, 1989. **30**(3): p. 317-9.
2. Vigneau, C., et al., *The use of contrast media in deceased kidney donors does not affect initial graft function or graft survival*. Kidney Int, 2006. **70**(6): p. 1149-54.
3. Weibull, H., et al., *Does cerebral angiography of cadaveric kidney donors interfere with graft function?* Acta Radiol, 1987. **28**(4): p. 451-5.
4. Grauhan, O., et al., *Coronary atherosclerosis of the donor heart--impact on early graft failure*. Eur J Cardiothorac Surg, 2007. **32**(4): p. 634-8.
5. Grauhan, O., C. Wesslau, and R. Hetzer, *Routine screening of donor hearts by coronary angiography is feasible*. Transplant Proc, 2006. **38**(3): p. 666-7.
6. Grosse, K., et al., *Does contrast medium administration in organ donors affect early kidney graft function?* Transplant Proc, 2006. **38**(3): p. 668-9.
7. Hauptman, P.J., et al., *Angiography of potential cardiac donors*. J Am Coll Cardiol, 2001. **37**(5): p. 1252-8.
8. TSANZ, *Organ Transplantation from Deceased Donors: Consensus Statement on Eligibility Criteria and Allocation Protocols* 2011, Australian Organ and Tissue Authority.

## 9. Version Control

Version #	Changes made	Approved by the Chair of Cardiac Advisory Committee	Date
1.0		Robert Larbalestier	27 March 2015