



RENAL PRESERVATION POST-EXTRACTION OF KIDNEYS FROM DECEASED DONOR WITH PULSATILE PERFUSION MACHINE

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ABSTRACT

Introduction: Cold storage (CS) is the most widely used organ-preservation procedure, its main advantages being its ready availability or ease of transport. However, the increasing use of donors with wider selection criteria renders it necessary to use other methods, such as the pulsatile perfusion machine (PPM), in order to enhance organ viability.

Objectives: To assess the cost-effectiveness and safety of kidney storage. The following variables were assessed: delayed graft function (DGF); primary non-function (PNF) of renal graft; graft or patient survival; and increases in costs.

Methods: A review was made of the scientific literature until 11 December 2012, with a subsequent update until 14 February 2013, using the following databases:

- those specialising in systematic reviews, such as HTA (Health Technology Assessment), DARE (Database of Abstracts of Reviews of Effectiveness), NHS EED (NHS Economic Evaluation Database) and the Cochrane Library Plus; and,
- general databases, such as Medline, Embase and ISI Web of Knowledge (WoK).

Acting independently, two reviewers selected and reviewed the papers on the basis of pre-established inclusion criteria. The data were then summarized in evidence tables.

Results and discussion: Of the papers yielded by the bibliographic search, a total of 13 were selected which fulfilled the criteria (7 systematic reviews of effectiveness or cost-effectiveness, 1 randomized clinical trial and 5 observational studies). The results on effectiveness showed that the PPM yielded lower DGF rates and longer graft survival than did CF, which in turn enabled it to be cost-effective vis-à-vis CF, thanks to the ensuing reduction in hospital stay and decrease in supplementary dialysis. None of the studies reported adverse effects. Most of the papers selected were medium- to high-quality studies and all reported the use of a comparison group.

Conclusions: The PPM reduces DGF and increases graft survival. The procedure showed itself to be cost-effective and displayed no adverse effects.

Recommendations: A PPM may be used as an alternative to CF for renal storage, and more specifically in cases of donors with wider selection criteria where organ viability needs to be enhanced. It would be advisable for transplantation centres to be equipped with this type of storage.