

Title	Histidine-tryptophan ketoglutarate (HTK) Solution for multi-organ preservation and protection solution for organ transplantation
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Aim

To assess the effectiveness, safety and cost-effectiveness of HTK Solution for use as a multi-organ preservation and protection solution before transplantation within all government and related hospitals in Malaysia.

Conclusions and results

Thirteen articles were included that consists of a systematic review and twelve retrospective cohort studies. There were five articles related to pancreas transplantation, four articles on liver transplantation, one article on multivisceral transplantation and one article on thoracic aorta operation.

Only limited evidence is available to warrant the routine use of HTK for preservation of pancreas, liver and multivisceral organ as well as myocardial protection in patients undergoing thoracic aorta operations. The retrieved evidence for multivisceral organ preservation as well as myocardial protection in patients undergoing thoracic aorta operations was small in numbers.

The retrieved evidence for pancreas and liver preservation were inconclusive due to conflicting results:

- Three studies showed that HTK solution was clinically comparable to University of Wisconsin (UW) solution and suitable for preservation of pancreas allografts. Two studies demonstrated that HTK preservation was an independent risk factor for reduced graft survival for pancreas allografts and in particular those with prolonged cold ischemia time (CIT).
- Three studies also suggested that HTK and University of Wisconsin (UW) solution were equally effective and safe in the perfusion of the living donor liver grafts, while one study showed that HTK preservation was an independent risk factor for reduced graft survival for all deceased donor liver grafts and those with prolonged cold ischemia time (CIT).

These results suggested that despite its lower cost, enthusiasm for HTK as a universal preservative solution especially for abdominal organ preservation should be considered with caution.

More rigorous studies with better randomization, control groups, and standardized outcome measures are needed to overcome the limitations of past studies.

Methods

Literatures were searched through electronic databases specifically, PubMed/MEDLINE, Cochrane, OVID, INAHTA and also in general databases. Google was used to search for additional web-based information. In addition websites for existing HTA agency, society websites and cross-referencing of the articles retrieved were also carried out accordingly to the topic. A critical appraisal of the retrieved papers was performed and the evidence level was graded according to the US/Canadian Preventive Services Task Force.

Further research/reviews required

More prospective clinical research is warranted to provide further additional evidence on the effectiveness for its use in multi-organ preservation and protection solution before transplantation.

Written by

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