Appendix 1| Search strategy

The MEDLINE database was searched for reports published between the inception of the database and October 26, 2018. An updated search was performed in May 2019 prior to final preparation of the manuscript. In addition to the search results, references of relevant articles retrieved by the search strategy were explored. Evidence from full text articles, abstracts and data presented at scientific meetings were considered. Articles focusing solely on organ viability assessment, and pre-clinical models including animal studies were excluded. The organs covered include kidney, liver, pancreas, heart and lungs. A total of 90 original articles including systematic reviews and meta-analyses were identified (Figure 1).

Kidney search

(kidney transplantation OR kidneys for transplantation OR allograft kidney OR kidney allografts OR deceased donor kidney transplantation OR transplantable kidneys OR renal transplants OR renal allografts OR kidneys) AND (deceased-donor OR deceased donor OR high-risk donors OR extended criteria OR expanded criteria donors OR expanded-criteria donors OR expanded criteria donors after brain death OR donation after cardiac death OR donated after cardiac death OR non-heart-beating donors OR circulatory determination of death OR donation after circulatory death OR controlled donation after circulatory death OR uncontrolled donation after circulatory determination of death OR uncontrolled donors victims of cardiac arrest OR victims of cardiac arrest occurring outside the hospital)AND (machine perfusion OR hypothermic machine perfusion OR hypothermic pulsatile machine perfusion OR renal perfusion pump OR machine perfusion preservation OR cold machine perfusion OR cold pulsatile machine perfusion OR end-ischemic hypothermic in-house machine perfusion OR hypothermic machine perfusion following static cold storageOR hypothermic abdominal regional perfusion OR normothermic abdominal regional perfusion OR portable cardiopulmonary bypass OR normothermic recirculation OR extracorporeal membrane oxygenation OR normothermic regional perfusion OR in situ normothermic regional perfusion OR abdominal normothermic regional perfusion OR extracorporeal support OR normothermic oxygenated perfusion OR hypothermic oxygenated perfusion OR ex vivo normothermic perfusion OR dynamic preservation OR renal preservation OR reconditioning OR controlled reperfusion OR extracorporeal interval support for organ retrieval OR normothermic and hypothermic oxygenated perfusion OR versus static cold storage)

Liver search

(Liver transplantation OR Extended Criteria Donor Livers OR Orphan livers OR liver transplants donated after circulatory death OR donation after cardiac death liver transplants OR declined liver allografts OR controlled donation after circulatory death liver transplantation OR liver grafts from donors after circulatory death OR maastricht type 2 donation after cardiac death liver transplantation OR Liver transplantation using uncontrolled non-heart-beating donors) AND (hypothermic machine preservation OR hypothermic oxygenated perfusion OR dual hypothermic oxygenated machine perfusion OR hypothermic oxygenated perfusion OR versus static cold storage OR oxygen persufflation preservation OR normothermic ex-situ evaluation OR normothermic ex vivo liver perfusion OR normothermic preservation in liver transplantation OR controlled oxygenated rewarming OR in situ normothermic perfusion of livers OR normothermic regional perfusion OR versus super-rapid recovery OR regional perfusion OR normothermic extracorporeal membrane oxygenation)

Pancreas search

(pancreas OR pancreata OR pancreatic) AND (machine perfusion OR hypothermic pulsatile perfusion OR hypothermic oxygenated machine perfusion OR ex vivo normothermic perfusion OR oxygen perfusion OR persufflation)

Heart search

(heart transplantation OR donor hearts OR hearts donated after circulatory death OR donor hearts after circulatory death OR heart transplantation after donor circulatory death OR donor heart after circulatory death OR heart transplantation from donation after circulatory-determined death donors) AND (ex-vivo perfusion OR ex-vivo preservation OR normothermic perfusion OR normothermic regional perfusion OR versus super-rapid recovery OR regional perfusion OR normothermic extracorporeal membrane oxygenation)

Lung search

(Lung transplantation OR donor lungs) AND (normothermic ex vivo lung perfusion OR ex vivo lung perfusions OR ex vivo lung perfusion OR ex-vivo lung evaluation OR reconditioning OR ex vivo lung reconditioning OR normothermic ex vivo lung perfusion OR normothermic ex-vivo preservation)