

 TRANSPLANTATION

## Continuous normothermic *ex vivo* perfusion improves kidney graft function

Pressure-controlled continuous normothermic *ex vivo* kidney perfusion (NEVKP) improves renal graft function in pigs, say researchers. Markus Selzner and colleagues suggest that use of this preservation technique might reduce rates of delayed graft function and improve outcomes in kidney transplantation. “We aim to maintain physiologic conditions during NEVKP,” says Selzner. “The kidneys are kept at 37°C and supplied with nutrition and oxygen using a perfusion solution with erythrocytes and a normal oncotic pressure. The conditions are chosen so that the kidney functions *ex vivo* as it would in the body.”

Using pig autotransplantation models of heart-beating donation (HBD) and donation after circulatory death (DCD), the researchers showed that 8 h of NEVKP maintained graft function without preservation injury. In the HBD model, serum creatinine and blood urea nitrogen (BUN) levels at day 10 post-transplantation were similar to baseline in NEVKP graft recipients, whereas recipients of grafts that had undergone static cold storage

(SCD) had increased serum creatinine and BUN levels. In the DCD model, NEVKP graft recipients had significantly better post-transplantation kidney function than SCD graft recipients, as indicated by serum creatinine, BUN and potassium levels. In both models, animal survival was similar in SCD and NEVKP groups and histological analysis showed no differences in graft tubular injury, interstitial inflammation, oedema or fibrosis.

“NEVKP could result in better quality grafts and might offer the opportunity to assess grafts prior to transplantation,” concludes Selzner.

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**ORIGINAL ARTICLES** Moritz, K. J. *et al.* Continuous normothermic *ex vivo* kidney perfusion improves graft function in donation after circulatory death pig kidney transplantation. *Transplantation* <http://dx.doi.org/10.1097/TP.0000000000001343> (2016) | Moritz, K. J. *et al.* Eight hour continuous normothermic *ex vivo* kidney perfusion is a safe preservation technique for kidney transplantation: a new opportunity for the storage, assessment and repair of kidney grafts. *Transplantation* <http://dx.doi.org/10.1097/TP.0000000000001299> (2016)