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LETTER TO THE EDITORS

Reply to: The cold storage time of kidney grafts needs to be identical

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Dear Sirs,

We welcome the comments from Chen and Zhu [1] and the opportunity to further discuss the user-orientated background of our study design.

Actually, previous work had already produced robust evidence in a porcine transplant model that even continuous machine perfusion for 21 h did not result in superior graft function than 2 h of machine perfusion subsequent to 19 h of cold storage [2].

Further comparison of fractional machine perfusion times on the basis of consistent total preservation time did hence not appear to represent a straight forward approach in improving clinical practice.

Notwithstanding that, it is important to develop an experimental basis to decide whether and how long to put an organ on the machine after a given cold storage period before arrival in the hospital, when longer intervals of HMP actually compete with the alternative option of immediate transplantation.

We agree that the extension of the overall cold ischemic time, inherent to the nature of a reconditioning protocol by *post hoc* machine perfusion, might, in part, intrinsically cut down on the functional benefits of the treatment as has been discussed already in the original publication [3].

All the more important is the finding that even a significant prolongation of the total cold ischemia time by supplementary "in house machine perfusion" still resulted in superior functional results during reperfusion.

As mentioned above, "in house machine perfusion" will as likely improve outcome compared with isochronal cold storage periods, but this scenario would not reflect clinical reality at our center, where kidneys are aimed to be transplanted with minimal delay after arrival, if not subjected to further reconditioning treatment.

In our opinion, a much more pertinent question is to delineate the maximal time of arbitrary extension of cold ischemia time by machine perfusion—possibly beyond 4 h–still consistent with improved functional outcome of the graft after transplantation. Further investigations in this direction might yield an evidence bases rationale to allow for postponing transplantation surgery into elective interventions at day time rather than being a nighttime *ad hoc* procedure.

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Conflict of interest

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References

1. Chen QY, Zhu L. The cold storage time of kidney grafts needs to be identical. *Transpl Int* 2014; **28**: 505.
2. Gallinat A, Paul A, Efferz P, *et al.* Hypothermic reconditioning of porcine kidney grafts by short-term preimplantation machine perfusion. *Transplantation* 2012; **93**: 787.
3. Gallinat A, Efferz P, Paul A, Minor T. One or 4 h of "in-house" reconditioning by machine perfusion after cold storage improve reperfusion parameters in porcine kidneys. *Transpl Int* 2014; **27**: 1214.

