

## **Machine Perfusion vs. Cold Storage in Transplantation of Kidneys from Donors Older Than 65 Years: Results of a Randomized Multicenter Trial**

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**Rationale:** Delayed graft function(DGF) after renal transplantation especially from older donors negatively correlates with long and short term function of the graft and graft survival. In the context of a prospective randomized multicenter trial we evaluated the outcome of renal transplantation after hypothermic machine perfusion (MP) versus standard cold storage (CS) preservation in donors older than 65 years.

**Methods:** Between November 2005 and November 2006 n=52 consecutive brain death donors older than 65 years were included as a subgroup of a prospective randomized multicenter trial. In every donor one kidney got randomly preserved by hypothermic machine perfusion and the contralateral kidney got treated by standard cold storage. Eurotransplant standard allocation algorithms were not affected by the trial. The accepting center was blinded regarding preservation mode and perfusion parameters. Primary endpoint of the study was DGF in terms of a necessity for dialysis in the first seven days after transplantation. All recipients were included in a follow-up which lasted up to one year. The follow-up included graft and patient survival, primary non function (PNF) and acute rejection episodes.

**Results:** Donor age was 69 years (66-81). The demographics were comparable between MP vs. CS arm. The incidence of a DGF was 25.0 % for the MP vs. 28.8 % for the CS, p=0.413. The rate of PNF was 1/52 for the MP and in comparison 6/52 for the CS (p=0.05) In case of a DGF the graft survival after 12 months turned out to be inferior after CS than using the MP (40 vs. 90 %, p=0.007)

**Conclusion:** Kidneys of donors older than 65 years in the Eurotransplant-senior program show a clear advantage using the hypothermic machine perfusion, especially in case of delayed graft function. Since additional 30 donors older 65 years in this special program have been included until November 2007, one year follow-up data for the whole group will be presented.