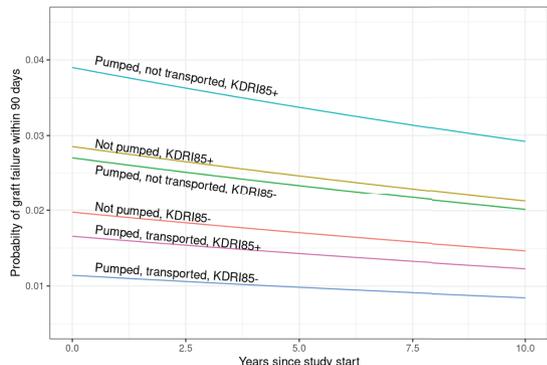


Table 1: Multivariable model for the odds of primary non function

Predictors	Odds Ratios	CI	p
KDRI85+ (Ref=KDRI85-)	1.46	1.02 – 2.05	0.032
Years since study start	0.97	0.91 – 1.03	0.332
Pumped, not transported (Ref=Not pumped)	1.38	0.94 – 2.00	0.092
Pumped, transported (Ref=Not pumped)	0.57	0.38 – 0.85	0.007

Figure 1. Probability of primary non function stratified by pump utilization and KDRI



CITATION INFORMATION: Cortez A., Tapia A., Smith B., Garcia Valencia O., Ovdad E., Issa N., Amer H., Riad S. Evaluating the Impact of Machine Perfusion on Primary Nonfunction Rates in Deceased Donor Kidneys with Discarded Contralateral Mate *AJT*, Volume 25, Issue 8 Supplement 1
DISCLOSURES: A.R. Cortez: None.

Abstract# OA39.4

National Implementation of HMP Increases Local Kidney Utilisation Rate and is Highly Cost-Effectiveness

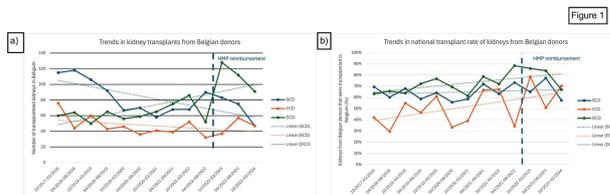
T. Darius¹, I. Jochmans², M. Foguene¹, E. Hoste³, C. Randon⁴, G. Roeyen⁵, B. Bracke⁶, L. Weekers⁷, O. Detry⁸, D. Jacob's-Tulleeneers-Thevissen⁹, K. M. Wissing¹⁰, T. Bogaerts⁹, J. De Wilde¹¹, D. Mikhalski¹², J. Pirenne², ¹Surgery and Abdominal Transplantation Unit, University Clinics Saint-Luc, Brussels, Belgium, ²Abdominal Transplant Surgery, University Hospitals Leuven, Leuven, Belgium, ³Department of Intensive Care Medicine, Ghent University Hospital, Ghent, Belgium, ⁴Department of Thoracic and Vascular Surgery, Ghent University Hospital, Ghent, Belgium, ⁵Department of Hepatobiliary Transplantation and Endocrine Surgery, University Hospital Antwerp, Antwerp, Belgium, ⁶Department of Hepatobiliary Surgery, University Hospital Antwerp, Antwerp, Belgium, ⁷Division of Nephrology, University Hospital of Liège, Liège, Belgium, ⁸Division of Abdominal Surgery and Transplantation, University of Liège Hospital, Liège, Belgium, ⁹Diabetes Research Center, Universitair Ziekenhuis Brussel, Brussels, Belgium, ¹⁰Nephrology, Universitair Ziekenhuis Brussel, Brussels, Belgium, ¹¹Department of Vascular Diseases, Hôpital Erasme, Brussels, Belgium, ¹²Department of Abdominal Surgery and Transplantation, Hôpital Erasme, Brussels, Belgium

Purpose: Given the improved outcomes for higher-risk kidneys that are preserved by hypothermic machine perfusion (HMP), Belgium introduced HMP reimbursement for ECD and DCD kidneys since 10/2022. This study presents the trends in national kidney transplantation rates of these kidneys before and after the reimbursement of HMP and cost-effectiveness analysis.

Methods: Data were retrospectively collected from Belgian donors transplanted between 10/2017 and 03/2024. Before October 2022, the vast majority of these kidneys was preserved by cold storage.

Results: The national implementation of HMP resulted in 1) an increase of the total number of KT Belgian DCD and ECD donors regardless of donor age (Figure 1a), 2) an important increase in national transplantation rate (Figure 1b). The observed increase was more pronounced in the donor age groups between 50 and 65 years old and above 65 years, but not for DCD kidneys with donor age below the age of 50. 3) The cost-effectiveness was 4.365.651€ saved 1 year after its implementation (based on costs of HMP (3500€/procedure) and dialysis (44.932€/year/patient)).

Conclusions: The reimbursement and nationwide implementation of HMP for kidneys procured in Belgium resulted in an important increase of the national transplantation rate of ECD and DCD kidneys and was highly cost-effectiveness.



CITATION INFORMATION: Darius T., Jochmans I., Foguene M., Hoste E., Randon C., Roeyen G., Bracke B., Weekers L., Detry O., Jacob's-Tulleeneers-Thevissen D., Wissing K., Bogaerts T., De Wilde J., Mikhalski D., Pirenne J. National Implementation of HMP Increases Local Kidney Utilisation Rate and is Highly Cost-Effectiveness *AJT*, Volume 25, Issue 8 Supplement 1
DISCLOSURES:

Abstract# OA39.5

When Good Kidneys Pump Poorly: Why Some High-Resistance Organs Deserve a Chance

N. J. Blount, M. Henrich, S. Sultan, M. Fruscione, A. Erhardt, L. J.

Kasselmann, M. J. Goldstein, *Hackensack University Medical Center, NJ*

Purpose: The imbalance between supply and demand for donor grafts remains the primary barrier to optimal treatment of end-stage renal disease. Hypothermic machine perfusion (HMP) has increased organ utilization by improving outcomes for deceased donor kidneys. Although machine-measured renal resistance on HMP is a valuable prognostic tool for organ selection, some kidneys with high resistance unexpectedly yield good graft outcomes. This study aims to identify factors that support the transplantation of high-resistance kidneys.

Methods: We conducted a retrospective analysis of 235 deceased donor renal transplants (DDRT) performed at our center between December 23, 2020 and January 16, 2024, all of which used HMP preoperatively. Kidneys were pumped for a median time of 3.25 hours. Of these, 52 allografts with terminal pumping resistance of ≥ 0.4 (median=0.51, range=0.4-1.44) were classified as high resistance. Multivariate logistic regression was performed to compare delayed graft function (DGF) and 1-year post-transplant estimated glomerular filtration rate (eGFR) ≥ 60 with deceased donor terminal creatinine, donor age, and DCD. Significance was set at $p < 0.05$. Descriptive analyses examined eGFR and DGF based on donor age.

Results: Among high resistance kidneys, deceased donor terminal creatinine, donor age, and DCD were not associated with increased rates of DGF (Figure 1A). Increased donor age was associated with a lower likelihood of eGFR ≥ 60 at 1 year (OR=0.96, $p=0.049$), whereas deceased donor terminal creatinine and DCD were not associated with eGFR ≥ 60 at 1 year (Figure 1B). The median donor age was 45.5 (range 4-72). In the cohort below the median age, we observed an eGFR at 1 year ≥ 60 in 47.4% of recipients, compared to 18.2% in the cohort above the median age. DGF rates were identical in both groups (30.7%).

Conclusions: While renal resistance is a useful prognostic tool for predicting transplant outcomes, it should not be the sole factor in organ utilization decisions. High-resistance kidneys from younger donors are more likely to achieve an eGFR ≥ 60 at 1 year, possibly reflecting a reversible acute tubular injury. High-resistance kidneys from older donors can be used with caution but should be evaluated in conjunction with donor history and biopsy findings. Future research should focus on refining selection criteria for high-resistance kidneys to further increase organ utilization.

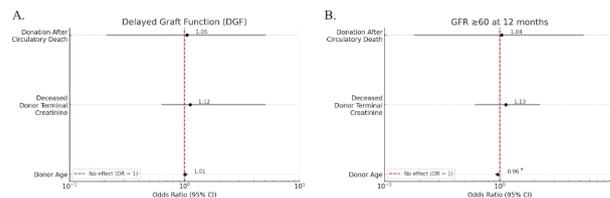


Figure 1 Forest plots depicting multivariate logistical regression analysis of A) DGF and B) GFR ≥ 60 at 12 months. Error bars represent 95% confidence intervals. Error bars that cross 1 are not significant. Asterisks denote significant results.

CITATION INFORMATION: Blount N., Henrich M., Sultan S., Fruscione M., Erhardt A., Kasselmann L., Goldstein M. When Good Kidneys Pump Poorly: Why Some High-Resistance Organs Deserve a Chance *AJT*, Volume 25, Issue 8 Supplement 1
DISCLOSURES: N.J. Blount: None.