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Introduction

Growing availability of kidneys from EC-DBD, which carry a higher risk of worse clinical outcome, has risen the need for advanced techniques, such as HMP integrating classic "Static Cold Storage", to improve the preservation of these organs. The aim of this work was to evaluate the clinical impact of HMP on kidneys from EC-DBD.

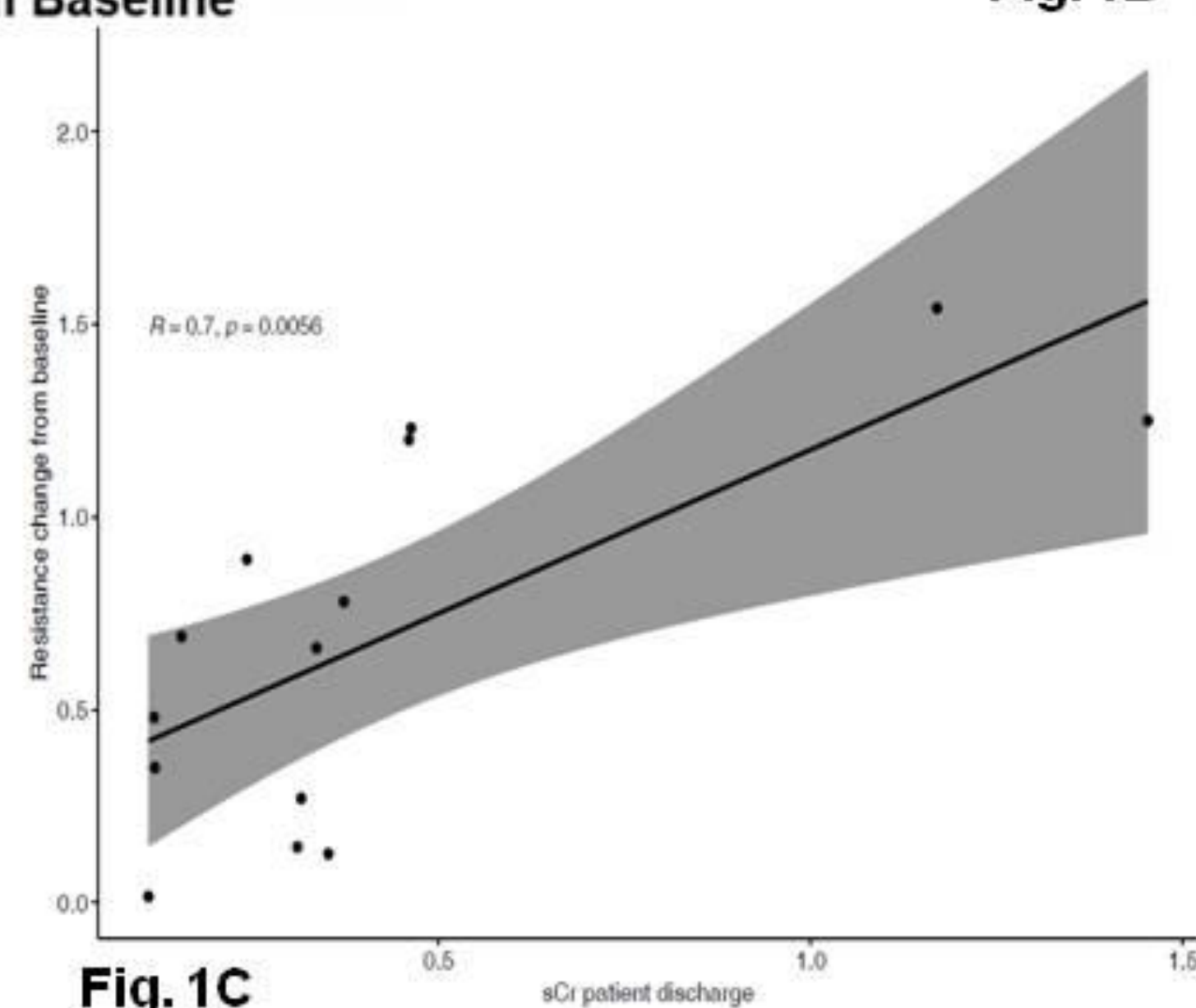
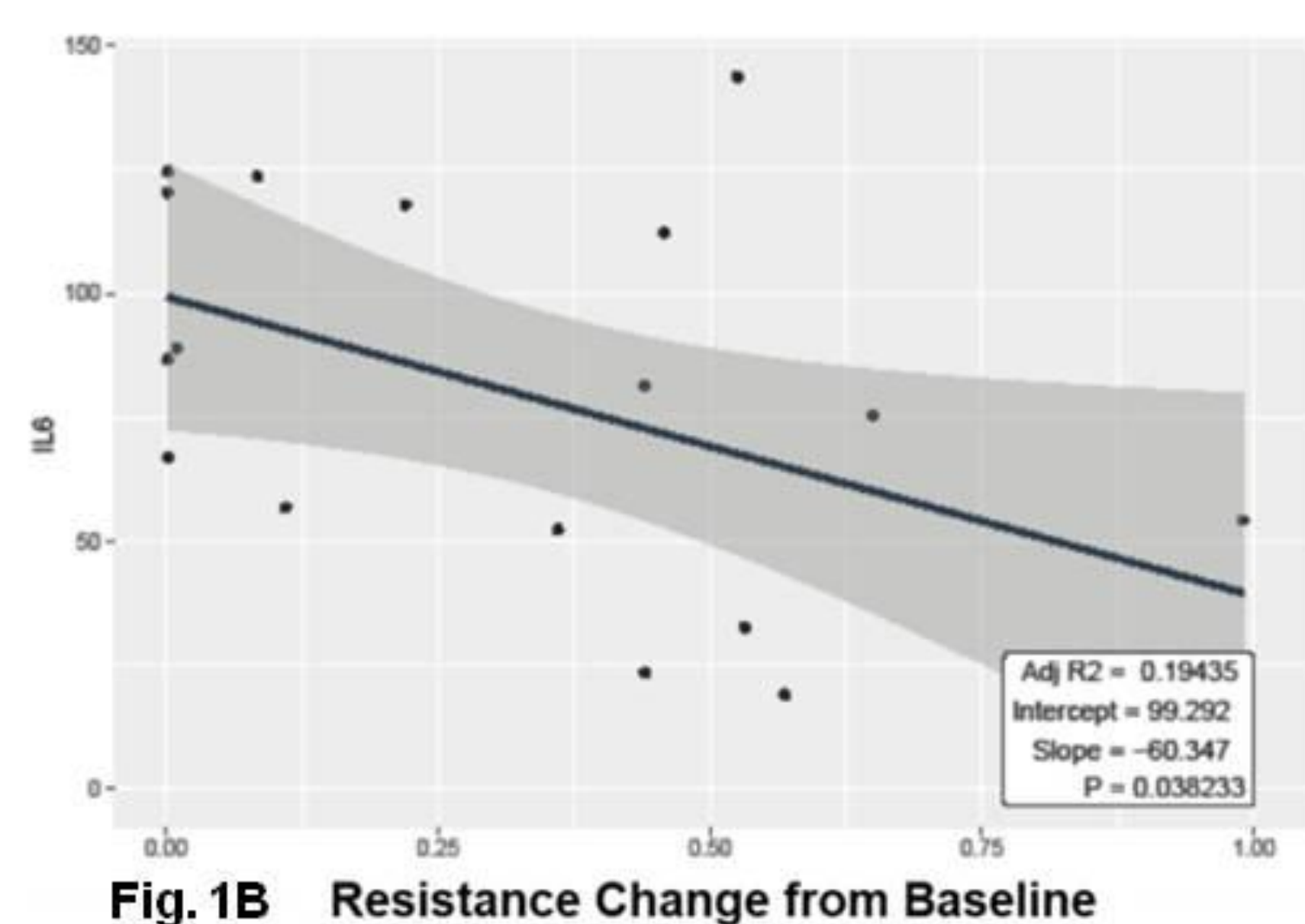
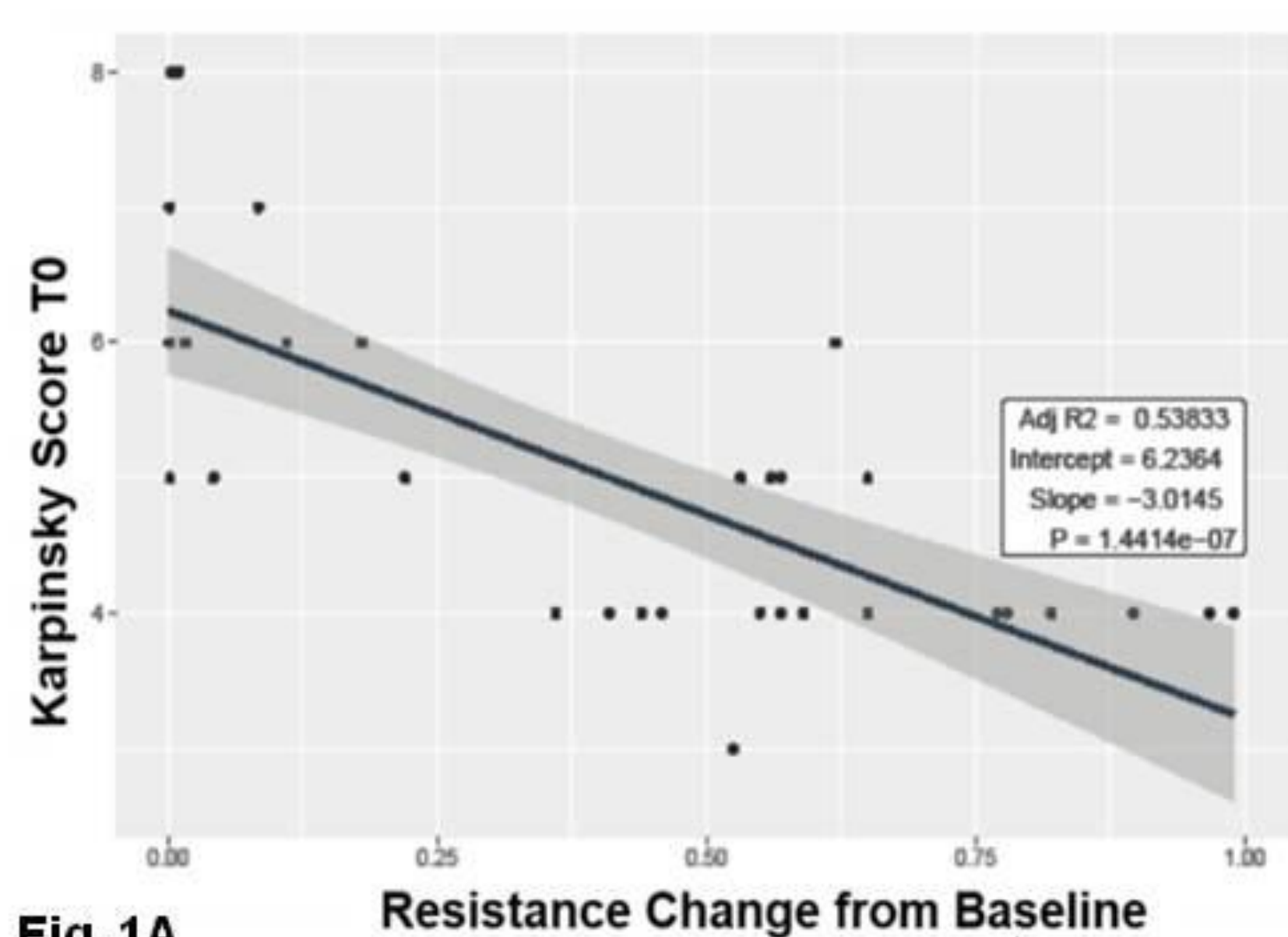
Methods

Kidneys from 19 EC-DBD were treated using HMP with the PerKidney system (PerLife, Aferetica), with Pump Protect solution for 6.2 ± 1.5 hours. Recipients underwent a follow-up of 1 year

Results

13 dual kidney transplantations (DKT) and 5 single transplants were performed, utilized as follows: a) kidneys from 8 donors transplanted according to Karpinski score (KS); b) kidneys from 2 donors declared unsuitable based on KS (7-6; 5-7); c) from 5 donors, despite KS: 6-6, 4-8, 6-4, 6-5, 6-6, DKTs were performed after HMP; d) of 3 donors (despite KS 5-4; 6-4; 4-8) one kidney from each donor was transplanted after HMP, the other one was discarded due to KS and macroscopic evaluation.

Intrarenal resistances (IR) significantly decreased (T0: 1.25 ± 0.48 , TEND: 0.14 ± 0.270 mmHg/ml/min) during the treatment, with an increase in renal flow. IR drop was inversely proportional to the initial organ score ($r^2=0.53$, $p<0.001$) [Fig. 1A]. Perfusate analysis revealed a link between resistance changes and IL-6 levels ($p=0.03$) [Fig. 1B]. Decrease of creatinine correlated with the decrease of resistances (median creatinine after 1-year follow-up: 1.6 mg/dL) [Fig. 1C].



Conclusion

Our experience demonstrated the role of HMP as a support in both the assessment and improvement of organ quality, as showed after 1-year follow-up. Notably, kidneys of 8 donors were successfully used despite clinical, macroscopic, and histological features.