

Controlled Oxygenated Rewarming (COR) in Liver Transplantation –A case series

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Introduction

We present a case series of grafts treated with sequential protocol (SP), combining dual hypothermic perfusion (DHOPE), slow controlled oxygenated rewarming (COR) of the organ and final normothermic (NMP) treatment in order to perform both IRI limitation and organ viability assessment prior to transplant.

Methods

Liver grafts deemed not transplantable upfront due to donor characteristics were included, including both extended brain death donors (DBD) or donors after cardiac death (DCD) with macrosteatosis >35%, hemodynamic instability in ICU and during normothermic regional perfusion (NRP) and procurement. All SP protocols were performed with PerLife® system, without organ disconnection sitching from DHOPE to NMP. Viability was assessed according to Groningen criteria reached within 2.5 h of NMP.

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Results

11 liver grafts underwent SP. 2/11 met viability criteria and were transplanted. Transplanted grafts showed a downtrend in lactates. Median time for DHOPE, COR and NRP phases was 120' from 6°C to 12°C, 60' from 12° to 35°C and 225' from 35°C to 37°C, respectively. No procedure or device related complications were recorded. Patients who received grafts deemed suitable had an uneventful postoperative course, with an average hospital stay of 7 days (range 6-8). The median follow-up was 9 months (range 6–12), and both patients are in good general clinical condition with excellent graft function. No biliary complications were observed in either case.

Conclusion

SP is feasible and safe technique for evaluating graft viability prior to transplantation, enabling the use of high-risk donors, expanding the donor pool and increasing the opportunity to transplant more organs without negatively affecting the procedure outcomes.

Perfusion Temperature (°C) during SP

