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Role of Machine Perfusion on Oncological Outcome in HCC Transplantation



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Introduction

Perfusion machines play a growing role in the field of liver transplants, improving the outcomes of organs harvested from donors with extended criteria (ECD), and in particular hypothermic perfusion (D-HOPE) allows the reduction of the risk of ischemic cholangiopathy, particularly in grafts taken from DCD. Little is still known about the impact of machine perfusion on the oncological outcome in terms of survival (OS) and oncological recurrence (DFS) of transplantation for HCC

Methods

Retrospective analysis on a cohort of 243 consecutive patients undergoing LT for HCC at our center with donors ECD score ≥ 2 subjected or not to hypothermic machine perfusion in the period 2019-2024.

Results

243 patients with grafts from DCD donors or with ECD Score > 2 underwent LT for HCC. 53 patients underwent D-HOPE. No significant differences were recorded in terms of etiology (Alcohol 22.7 Vs Viral 34.3 Vs Others 25.6 months p.176) strategy (Primary 31.4 Vs Downstaging 29.2 Vs Salvage 27.7 months p.853) or selective listing criteria (Milan Criteria IN 31.5 Vs OUT 25.63 months p.512) After a median follow-up of 42 months (range, 1 – 72) there were 12 deaths and 15 relapses. There were no significant differences in terms of OS and DFS. The 1, 3 and 5 year OS is 93.9%, 88.9%, 80.6% respectively, while the DFS is 94.8%, 87.2%, 83.1%.

Conclusion

Initial analysis of this cohort suggests that machine perfusion does not appear to have a negative impact on oncological outcome while allowing the use of marginal grafts.