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Does Donor Liver Extraction Time Affect Early Allograft Function in Deceased Adult Liver Transplant Recipients?

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Abstract

Background: Recent work has identified time taken to remove a donor liver during organ retrieval (the extraction time) as a previously unrecognized variable affecting transplant outcome. We evaluated the effect of extraction time on early graft function in our own practice in a busy liver centre.

Patients and Methods: 218 recipients of liver grafts transplanted at our centre (Addenbrooke's, Cambridge) between October 2014 and October 2017 were evaluated. Early graft function was assessed by model for early allograft function (MEAF) score in both univariate and multivariate analysis including other variables known to affect outcome such as cold ischaemia time (CIT), warm ischaemia time (WIT), operative time, and terminal donor sodium concentration.

Results: In univariate analysis, extraction time, and CIT had a significant independent effect on MEAF score (P= 0.041, 0.008). Both prolonged donor extraction time and CIT were independently associated with a significant increase in the MEAF score in multivariate analysis {(95% confidence interval, 0.136 – 0.563; P = 0.044), (95% confidence interval, 0.239– 0.761; P = 0.011)}.

Conclusion: Donor liver extraction time has an independent effect on early graft function in deceased donor liver transplantation. Shortening donor extraction time during liver procurement could decrease the incidence of early allograft dysfunction.

Key words: donor hepatectomy timings, early allograft dysfunction, extraction time, liver transplantation, transplant outcome.