

LETTER TO THE EDITORS

Liver re-transplantation in Croatia: change in graft histopathology

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Dear Editors,

Failing liver grafts are an inevitable challenge for every transplant programme. Liver re-transplantation (re-LT) is required in 10–19% of patients [1,2]; however, the scarcity of donors is one of the determining factors limiting the success of the procedure. In the last decade, Croatia has had one of the highest LT rates in the world, estimated between 22.8 and 32.2 per million population [3], and 90% of the national LT programme has been performed in one (of two) LT centre [4]. We aimed to review the spectrum and the trend of indications for re-LT based on the graft histopathology at the major national LT centre.

Adult patients who underwent re-LT between February 2000 and February 2020 were selected using the Histology Electronic Database. Graft histopathology was divided into six categories; hepatic artery thrombosis (HAT), primary nonfunction (PNF), recurrent diseases, biliary pathology (biliary pattern of injury), chronic fibrosing hepatitis (CFH; chronic nonspecific inflammation and at least Ishak stage 3 fibrosis) and other (graft failure that did not fit into the previous categories, including chronic ductopaenic rejection as defined by the Banff criteria [5]). We analysed the low-volume (<100 transplants per year, 2000–2010) and the high-volume (>100 transplants per year, 2010–2020) LT period [5]. Immunosuppressive protocols during both periods consisted of corticosteroid induction and maintenance with calcineurin inhibitors and anti-metabolites.

During the whole period, 1154 primary LT procedures were performed; of these, 118 adults (9.8%) underwent re-LT at least once, which involved receipt of 135 liver grafts in total. Indications for early re-LT (within 30 days from transplant) were HAT, PNF and other in 55.6%, 27.8% and 16.7%, respectively. Indications for late re-LT (beyond 30 days) were distributed as follows: 42.4% biliary pathology, 25.3% recurrent disease (76% HCV, 24% autoimmune diseases), 11.1% HAT, 11.1% CFH and 10.1% other. The median time for late re-LT was 364 days (33–3863). The majority of re-LT 118 (87.4%) were performed during the high-volume period, where the majority of patients were re-transplanted late due to biliary pathology and recurrent diseases in 33.9% and 20.3%, respectively (Fig. 1). During the low-volume period, most patients were re-transplanted due to early HAT (41.25%; Fig. 1).

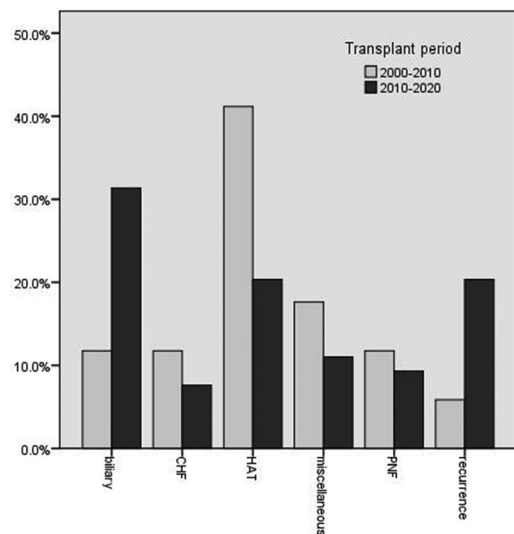


Figure 1 Indications for liver re-transplantation. Distribution of graft histopathology at re-LT during low-volume (<100 transplant per year; 2000–2010) and high-volume (>100 transplants per year; 2010–2020) period.

In the last decade, we observed a shift in indications for re-LT, with the increasing proportion of late re-LT dominated by biliary pathology and recurrent diseases. Despite improvements in their management, biliary complications remain a significant cause of post-transplant morbidity and are associated with a reduction in graft survival [6,7]. Given the homogenous LT management in a single-centre context, with its learning curve in surgical techniques, critical care and immunosuppression, this shift is driven by multiple factors including increasing use of extended-criteria donors and marginal grafts (including anti-HBc positive) [8], but primarily by the availability of donors [3,4], enabling liver re-LT for a progressively dysfunctional graft. The shift of indications over past decades has also been noticed in other

centres. In the UK, Souza et al. reported chronic rejection decline and CFH increase; however, HAT and recurrent diseases remained the main indications for re-LT, while biliary pathology represented less than 4.5% [2]. Shortly, the proportion of re-LT for disease recurrence (HCV due to antiviral therapies) is expected to decline, pointing to the new re-LT indication shift.

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Conflicts of interest

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