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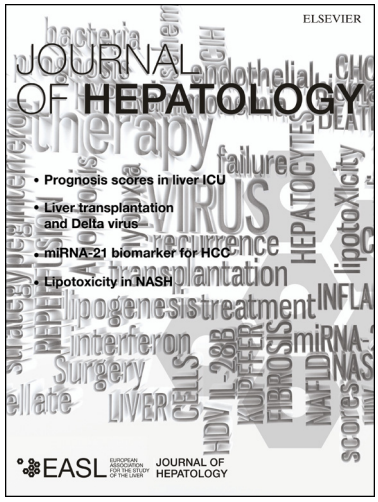

Letter to the Editor

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Chronic kidney disease after liver transplantation

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To the Editor:

We read with interest the report by Allen et al in a recent issue of Journal of Hepatology (1). The authors are to be congratulated on highlighting the important problem of chronic kidney disease (CKD) in liver transplant recipients. Instead of concentrating on severe CKD (KDIGO stages 4 to 5) as in most previous literature, their study additionally described the incidence of lesser degrees of renal injury (KDIGO stage 3) and had the benefit of iothalamate-measured glomerular filtration rate (GFR). They found that few patients maintained 'normal' renal function long-term after transplantation, with two thirds developing CKD by 10 years. The majority of patients had stage 3 disease. However, echoing observations in the nontransplant setting, this moderate CKD (GFR <60 ml/min/1.73m^2) was clinically relevant having implications for survival (2,3).

There are several points worthy of comment. Firstly, although there was clearly a progressive deterioration in renal function with time after transplant, the greatest loss occurred within the first year. The authors speculated that this reflects nephrotoxic immunosuppressive drugs. Little mention was made of the role of peri-operative acute kidney injury (AKI). In our unit, despite optimised pre-transplant renal function and less calcineurin inhibitor exposure in recent years, patients are experiencing more GFR loss from baseline to 1-year (4). This is in the context of a rise in the incidence of AKI that has occurred in parallel with a marked rise in the use of higher risk grafts (4). We have hypothesised that graft injury may play a critical role in the pathogenesis of AKI in this setting. It is well recognised that AKI can cause permanent structural damage, with progressive tubulo-interstitial fibrosis and long-term repercussions for

renal function (5). Therefore, we suggest that in addition to renal sparing immunosuppression, future strategies to prevent CKD may include therapies that minimise the renal hit at time of transplantation.

Secondly, the apparent lack of era effect on the frequency of CKD is interesting. United States registry data has shown that the introduction of MELD has been accompanied by an increased likelihood of end-stage kidney disease, which has been attributed to greater pre-operative renal dysfunction (6). Nevertheless, given that the adjusted hazard ratio for renal failure only rose by 15% after MELD implementation, one might not anticipate a demonstrable difference in this comparatively small study. Without detailed information regarding additional recipient and donor factors it is difficult to draw any real conclusions regarding the evolving incidence of CKD. Readers should not be falsely reassured by this data, especially in the face of an escalating use of higher risk grafts.

Finally, a major conclusion of the study by Allen et al was the limited reliability of creatinine-based GFR estimation in predicting mortality in these patients, and that preventative and expectant management based on early recognition of renal dysfunction may require actual measurement of GFR. We argue that measured GFR is time consuming, costly and not an applicable test for most transplant centres when repeated tests are necessary. Although a useful research tool, a single absolute measure of renal function in an individual patient is less relevant than delta estimated GFR for modifying clinical care.

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