

LETTER TO THE EDITORS

Temporary intraoperative porto-caval shunt: A more complete set of data is needed

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Dear Sirs,

I read with interest the study from Pratschke et al. [1] recently published in *Transplant International* analyzing the effects of an intraoperative porto-caval catheter shunt on graft function and survival. Decreased levels of transaminases during the first post-transplant week were observed in the shunt group with no differences in allograft function. Nevertheless, differences in early graft loss were found with an extremely low rate in shunted patients, only one case of primary graft nonfunction (PNF) in 274 recipients, while this was 6.9% in patients without a shunt (12 cases overall with 7 cases of PNF in 174 recipients) ($P < 0.001$). The authors explain the beneficial effect on transaminase levels in patients with a shunt by a significant increase in portal blood flow following reperfusion, together with the avoidance of mediator release from splanchnic congestion. In addition, long-term graft survival excluding patients with PNF was superior when a porto-caval shunt was used (108 months vs. 88.5 months, $P = 0.002$).

Although these are remarkable findings, some more data are needed to understand their relationship with the usage of a porto-caval catheter shunt. It has been demonstrated that portal flow varies during the transplant procedure with clear differences between the immediate post reperfusion flow and that observed after biliary reconstruction [2]. Moreover, independent variables, not studied by the authors, such as portal hypertension, graft steatosis, cardiac output, or hyperdynamic status, may influence hepatic hemodynamics. Therefore, the sole measurement of portal flow might be insufficient to explain the differences observed between the study groups. In fact, the final portal flow and not the post reperfusion portal flow has been recognized as the true indicator of postoperative outcome [2]. It could also be of interest to know the duration of portal flow interruption in the group without a shunt as well as the time period with a catheter shunt in the study group to justify the use of the shunt, since an interruption of portal flow for up to 90 min seems to be the threshold in animal models for the development of injury resulting from splanchnic congestion [3]. More significant is the lack of

information on the post reperfusion liver biopsies performed routinely by the authors. The percentage of liver necrosis and the presence of steatosis or another type of lesion in the graft would help to understand the significant difference in early graft loss observed between the study groups.

Finally, to explain the differences in long-term graft survival, the authors do not provide either data on the follow-up periods of both groups with or without shunt or the causes of graft loss during long-term follow-up. These data are of paramount importance to understand why a technical modification of the transplantation procedure may have an influence on long-term graft survival.

In summary, as many factors may affect both post-transplant liver function and long-term outcomes [4,5], the question as to whether a porto-caval catheter shunt is useless or beneficial in piggy-back liver transplantation cannot be answered without a more complete set of data.

Conflicts of interest

None.

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Mikel Gastaca
*Hepato-biliary Surgery and Liver Transplantation Unit,
Cruces University Hospital,
University of the Basque Country,
Baracaldo, Vizcaya, Spain
e-mail: mikelgastaca@gmail.com,
mikel.gastacamateo@osakidetza.net*

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