

1. For reviewer 01221925

- 1) Regarding the H categorization, what about the situation where there is involvement of one or two of the hepatic veins only? Is that a factor?

Answer: In fact, the diseases invading hepatocaval confluence were complicated and our classifications were established based on two standards (the IVC and hepatic outflow conditions). Different situations can be shown when combination of different “I” and different “H”. When only hepatic vein was invaded, we still suppose it was the type originated from “IH” classification.

- 2) There is debate whether Tacrolimus is indeed required if allogeneic vascular graft is needed. Additionally, there is concern about infection transmission. How were these grafts procured and how were they prepared for use? Also, how was the dose of Tacrolimus decided, ie was there a certain target level (which could also make the patient more vulnerable to the complications of immunosuppression)?

Answer: In fact, several patients in 2012 were treated with Tacrolimus after allogeneic vascular graft transplant. We acquired the allogeneic vascular grafts in the voluntary organ donors after declaring brain-dead. We saved the vascular grafts in low temperature after harvesting them. However, now we believe that it is unnecessary to take anti-rejection drugs when allogeneic vascular graft is used, though there is no RCTs illustrating this issue. And now we deleted the sentence: “If allogeneic vascular graft has been used, anti-rejection drugs such as Tacrolimus were treated” in the present study.

- 3) How many and what size were the lesions in these patients? The question has to do with whether any of these patients would be transplant candidates (even with extended criteria).

Answer: In table 1, we described the tumor size. Most of the patients did not meet the standard of transplant candidates. Only several patients in type I1H1 had tumor size less than 3 cm. For patients meet Millan criterion, obviously liver transplant is the better choice. However, for patients with late-stage tumor, maybe performing liver transplant has no advantages. Additionally, the shortages of organs and the higher expenses of transplant make it difficult to carry out in all patients.

- 4) Can the authors provide a proposed algorithm based on their findings?

Answer: Patients with different types had different surgical method. However, However, due to the small sample size and patient heterogeneity in the present study, this classification still needs to be investigated in more studies to evaluate the significance of IH classification in indicating surgical approach and disease prognosis.

- 5) Can the authors comment on the use of other methods such as Irreversible Electroporation (Nanoknife) for these patients in order to ablate next to the vessels?

Answer: These treatment methods do have curative effect in some patients losing chance to surgery. However, in our experience, R0 resection for patients with liver mass may be better than other treatments, though it need to be investigated in more studies.

2. For reviewer 00069988

How did the authors treat patients with hepatic failure?

Answer: For patients with liver failure, transfusion with blood plasma may be necessary. In addition, corticosteroid was needed in some situation. Sometimes artificial liver support system was utilized. If all the treatment methods were ineffective, then liver transplant should be carried out.