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Editorial: Transplant Oncology of Liver Malignancies

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Editorial on the Research Topic

Transplant Oncology of Liver Malignancies

The evolving field of transplant oncology targets at oncological issues related to potential transplant candidates or recipients. For the Research Topic: Transplant oncology of liver malignancies, we narrowed the field down to liver malignancies of which progress had been actively accumulating. Liver transplantation sits in the center of transplant oncology (1) because, compared to other solid organ transplants, it can achieve long-term survival in transplant candidates with malignancies, mainly hepatocellular carcinoma (HCC) (2). However, by definition, transplant oncology can expand to all transplant fields.

Novel risk factors and biomarkers of malignancies that specific and unique to patients in the transplant setting, such as cross-match (3) and graft size (Kim et al.), can be evaluated under this theme. Kim et al. suggested that positive graft weight change during organ solution perfusion indicates poor prognosis in live donor liver transplantation (LDLT) for HCC. These factors may not carry a weight as heavy as the traditional oncological risk factors but could potentially fine-tune the oncological outcomes in transplant setting. Therefore, evidence derived from non-transplant setting is of paramount importance in caring transplant candidates or recipients. For example, preoperative assessment or prediction of microvascular invasion is of significance in selecting a reasonable surgical strategy to prolong patient survival [Zhang et al., (4)].

As the expansion of eligible criteria to liver transplantation for HCC, the outcomes of liver transplantation for primary, recurrent, or down-staged HCCs might be different. Downstaging of HCC to reduce post liver transplant recurrence is another hotspot for investigation [Bhatti et al., (5)]. Bhatti et al. reported their data that LDLT without prior downstaging could reach comparable survival for T2-T4a HCC with lower AFP. Further refining the eligible criteria enable these transplant candidates with HCC (once "outsiders") to enjoy the benefit of liver transplantation.

Therapeutic role of liver transplantation in liver malignancies other than HCC (cholangiocarcinoma, sarcomas, metastases from neuroendocrine tumors, or colorectal cancer) remains to be precisely defined and requests more real-world data for validation (Finotti et al., Houben et al.).

Because almost all oncological treatments for transplant recipients are off-label use, investigator-initiated trials and real-world experiences are needed to provide solid evidence. Meanwhile, precisely harnessing immunotherapy in the setting of transplant oncology is a vital issue (6).

Looking forward, with the advance of oncology, organ transplantation could become a bridge to further oncological treatment for those who receive limited onco-therapeutic options due to the presence of organ failure. Inversely, development in transplant oncology may enhance precision immunological manipulation of oncological patients without transplant.

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REFERENCES

1. Sapisochin G, Hibi T, Ghobrial M, Man K. The ILTS Consensus Conference on transplant oncology: Setting the stage. *Transplantation.* (2020) 104:1119–20. doi: 10.1097/TP.0000000000003175
2. Mazzaferro V, Regalia E, Doci R, Andreola S, Pulvirenti A, Bozzetti F, et al. Liver transplantation for the treatment of small hepatocellular carcinomas in patients with cirrhosis. *N Engl J Med.* (1996) 334:693–9. doi: 10.1056/NEJM199603143341104
3. Ho CM, Hu RH, Wu YM, Ho MC, Lee PH. Cross-match as an immuno-oncological risk factor for hepatocellular carcinoma recurrence and inferior survival after living donor liver transplantation: a call for further investigation. *Clin Med Insights Oncol.* (2020) 14:1179554920968774. doi: 10.1177/1179554920968774
4. Ho CM, Wu CY, Lee PH, Lai HS, Ho MC, Wu YM, et al. Analysis of the risk factors of untransplantable recurrence after primary curative resection for patients with hepatocellular carcinoma. *Ann Surg Oncol.* (2013) 20:2526–33. doi: 10.1245/s10434-013-2940-7
5. Ho CM, Lee CH, Lee MC, Zhang JF, Chen CH, Wang JY, et al. Survival after treatable hepatocellular carcinoma recurrence in liver recipients: a nationwide cohort analysis. *Front Oncol.* (2021) 10:616094. doi: 10.3389/fonc.2020.616094
6. Ho CM, Chen HL, Hu RH, Lee PH. Harnessing immunotherapy for liver recipients with hepatocellular carcinoma: a review from a transplant oncology perspective. *Ther Adv Med Oncol.* (2019) 11:1758835919843463. doi: 10.1177/1758835919843463

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