LV IL 2

Tailored screening and management after liver transplantation for HCC

Kwang-Woong LEE

Surgery, Seoul National University College of Medicine, Korea

Lecture : The role of liver transplantation (LT) in patients with hepatocellular carcinoma (HCC) has evolved over the past two decades, and transplantation has become one of the significant curative treatment modalities for patients with HCC. However, there is a 10-30% recurrence after LT even with the development of selection criteria. In this presentation, I would like to update the progress in post-LT management.

1. Recurrence pattern and optimal screening protocol
The mechanism of HCC recurrence after LT is the metastasis of circulating cancer cells at the time of LT. Only one-third of recurrences are intrahepatic; the others are extrahepatic or combined sites. Most recurrences occur within 18 months. The high-risk recurrence group shows earlier recurrence than the lower risk group. However, there is no difference in terms of sites of recurrence. The decrement speed of tumor markers after LT can be a good predictor of recurrence rate and timing. Based on this information, a tailored screening program needs to be applied.
In the near future, ctDNA can be a useful and simple screening tool to detect recurrence.

2. The role of mTOR inhibitor in LT for HCC
Immunosuppression based on mTOR inhibitors, sirolimus, and everolimus, for HCC has been proposed in recent years. The mTOR inhibitors have antineoplastic properties because mTOR regulates cell growth and proliferation. Initial reports had suggested that sirolimus use is associated with a reduced risk of HCC recurrence after LT. A systematic review has demonstrated a significantly decreased rate of HCC recurrence with an mTOR inhibitor when compared to standard CNI-based immunosuppression (8% versus 14%), despite a higher proportion with HCC beyond Milan criteria and microvascular invasion in the mTOR inhibitor group.
There have been accumulating recent reports on the beneficial effects of mTORi to prolong the survival after LT for HCC. The post-hoc analysis of the SiLVER trial also showed the prolongation of survival. In a prospective randomized direct comparison study done by our group, we observed mTORi didn't decrease recurrence; however, it prolonged survival after LDLT for HCC.

3. Adjuvant therapy
Attempts to use tyrosine kinase inhibitors (such as sorafenib) after liver transplantation to reduce recurrence frequency, especially in patients with high risks, were found to be fruitless due to the multiple adverse effects of sorafenib and the lack of effectiveness of such therapies.
Immunotherapy is not routinely recommended due to the high risk of ACR-related mortality.

4. Treatment after recurrence
The use of sorafenib in recurrence treatment is also debatable due to inconclusive results and frequent complications forcing discontinuation of therapy.
Surgical resection or aggressive local treatment with incorporation of mTORi showed prolongation of

survival.

5. Characteristics of long-term survivor even with recurrence
Our group proposed SALT calculator based on pre-LT factors (sex, largest tumor size, PET positivity, AFP, PIVKAII, NLR) to predict HCC-related survival after LT. It showed that the low-risk group showed longer survival after recurrence. Also, recurrence more than 1 year after LT showed longer survival.