Treatment strategy for locally advanced liver cancer via novel tri-modality therapy

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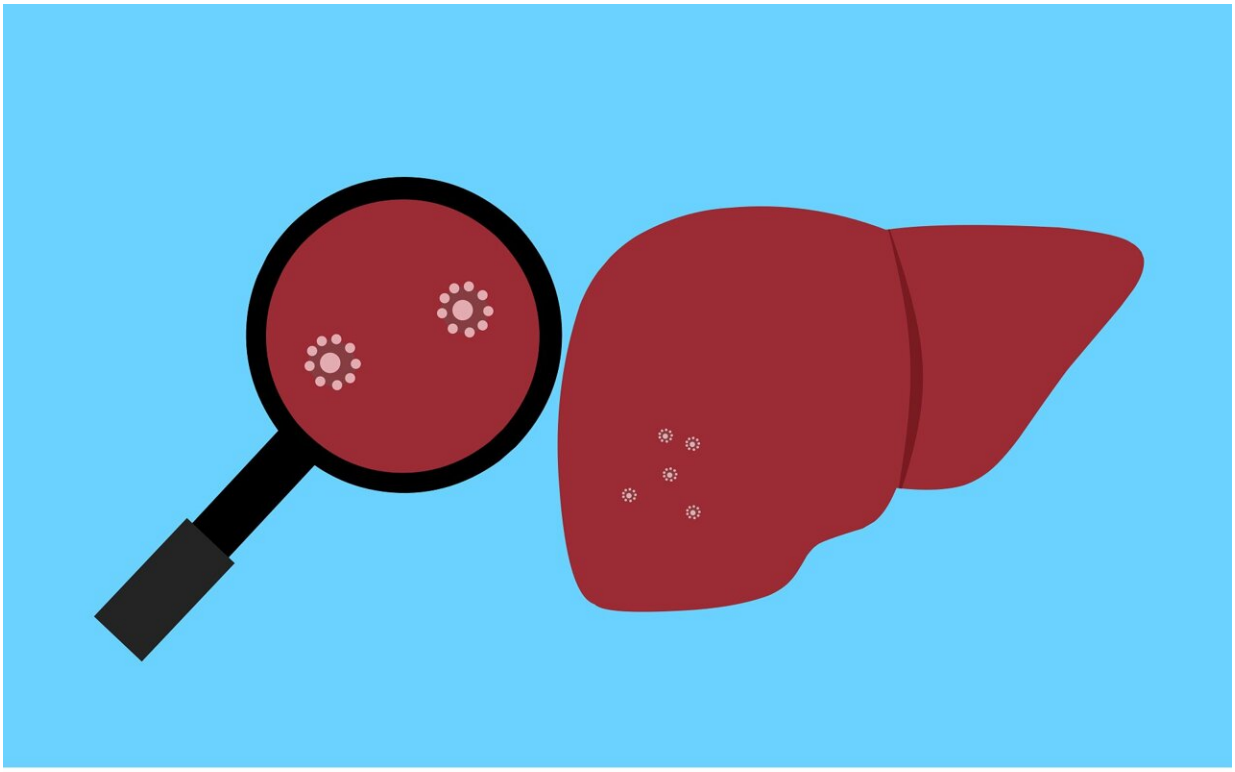

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A pioneering phase II clinical study on tri-modality therapy (START-FIT), conducted by the Department of Surgery and Department of Clinical Oncology, School of Clinical Medicine, LKS Faculty of

Medicine of the University of Hong Kong (HKUMed), has found that nearly 50% of patients with inoperable locally advanced liver cancer, can be cured through this innovative approach. This revolutionary result has been published in *The Lancet Gastroenterology and Hepatology*.

Liver cancer is the sixth most common cancer globally with more than 900,000 new cases every year and is the third leading cause of cancer-related mortality. According to Hong Kong Cancer Registry, there are about 1,800 new cases every year. However, only 30% is eligible for curative treatment, while the rest could solely be managed with non-curative option due to large tumor size, or vascular invasion etc. The research team focused on these 70% inoperable cases and developed a new treatment modality to improve their chance of cure.

A total of 33 patients were screened and enrolled in this treatment method from March 2019 to January 2021, for tumor diameter ranging from 5 to 17.5cm. 64% patients had tumors with major vascular invasion that precluded them from curative surgical procedure.

The research team developed a new approach termed "Reduce and Remove"—a tri-modality therapy (START-FIT) for these 33 patients. Patients would receive Transarterial Chemoembolisation (TACE) on day 1 for local tumor control, followed by Stereotactic Body Radiation Therapy (SBRT) on day 28, and then Immunotherapy administered 14 days following SBRT and every 2 weeks thereafter. In brief, this tri-modality approach is to downstage the tumor status to a level amenable to surgical intervention in order to achieve a cure for the liver cancer.

After this novel tri-modality therapy, 55% (18 patients) became suitable to receive curative surgery, of which 4 patients (12%) had undergone operation, and 14 patients (42%) had complete necrotic tumors who chose to keep close monitoring with regular scans. After up to 2.5 years of follow-up, two-year survival among these patients exceeded 90%,

with only mild side-effects experienced throughout the whole treatment process.

The advantages of this approach are that it is minimally invasive with short hospital stay and a relatively high safety profile. The most common side effects include temporary liver function derangement after TACE, and few patients may develop some mild immune-related reactions.

This innovative treatment strategy provides an opportunity for patients, who were initially not suitable, to eventually receive curative surgery with a promising long-term outcome. "This treatment strategy provides a definite treatment schedule. Most patients could have [a better] idea of the treatment effect within six months after the start of treatment and be able to have better planning for themselves and their family," said Professor Albert Chan Chi-yan, Clinical Professor, Department of Surgery, School of Clinical Medicine, HKUMed, who initiated this global first novel tri-modality therapy.

"Now the team is looking forward to expand the treatment coverage to more patients, especially those with poor liver function, to help downstaging the tumor status and hence, increase the chance of fitting into the criteria for liver transplantation in the future. We are also seeking ways to improve the efficacy of immunotherapy, from single agent to double agents, to deliver a more enhanced and solid treatment result."

More information: Chi Leung Chiang et al, Sequential transarterial chemoembolisation and stereotactic body radiotherapy followed by immunotherapy as conversion therapy for patients with locally advanced, unresectable hepatocellular carcinoma (START-FIT): a single-arm, phase 2 trial, *The Lancet Gastroenterology & Hepatology* (2022). DOI: 10.1016/S2468-1253(22)00339-9

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