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SABR technology for treating liver cancer

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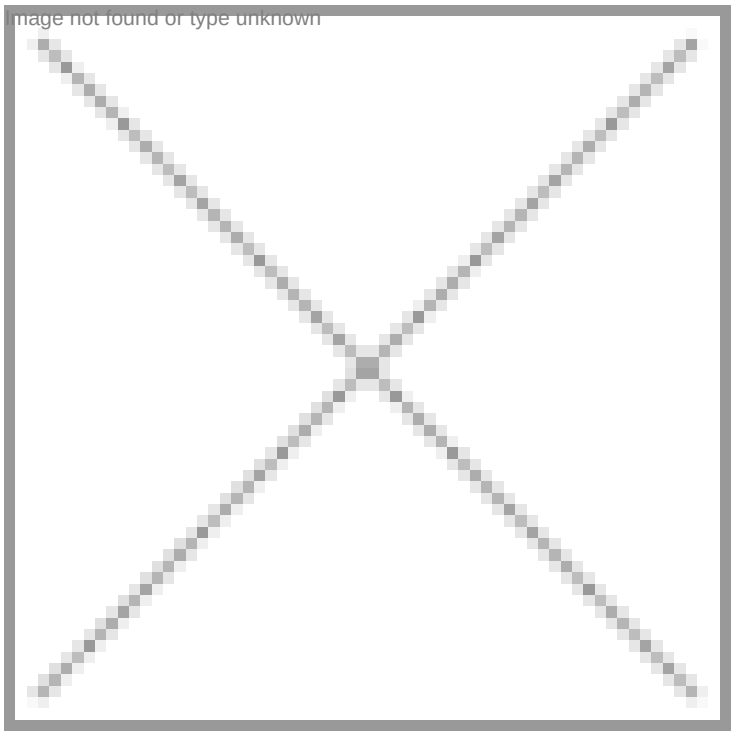

Singapore: Clinical experts outlined promising new approaches to treating liver cancer using radiosurgery with advanced imaging and motion management technology. Presentations on non-invasive radiosurgical approaches to treating hepatocellular carcinoma (HCC) were made by leading clinicians in Taipei City, Taiwan, at a meeting organized by the Taiwan Society for Therapeutic Radiology and Oncology and Taiwan Liver Cancer Association.

"Most patients with HCC are not eligible for surgery or liver transplant," said Dr Theodore Lawrence, professor and chairman of the Department of Radiation Oncology at the University of Michigan. "Historically we couldn't do much for them with radiotherapy because we lacked the ability to focus the dose on the tumor and minimize exposure of the rest of the liver. That has changed with advanced approaches like stereotactic ablative radiotherapy (SABR)."

Stereotactic ablative radiotherapy (SABR) is a type of radiosurgery that involves the careful use of modern technologies for 3D image guidance, motion management, and beam shaping. Dr Lawrence and his clinical team customize their use of SABR for each patient according to a predictive model they have developed based on treatment data from over 400 HCC cases. This model helps them determine the optimal radiation dose to use given the volume of liver to be treated. "High doses can be given safely if enough normal liver can be spared," he explained.

Dr Carlo Greco, professor and director of clinical research at the Champalimaud Foundation in Lisbon, Portugal, discussed advances in imaging and biological targeting that enable high precision single-dose image-guided radiotherapy (SD-IGRT) for treating metastatic lesions in the liver as well as elsewhere in the body. The TrueBeam platform from US-based Varian Medical Systems, with its high dose delivery rate, enables fast completion of these otherwise time-consuming treatments.

"Since we installed the TrueBeam machine in early 2012, we have treated over 400 metastatic lesions with high dose SD-IGRT," Dr Greco said. "Lung, bone, liver, adrenal gland and lymph node lesions have been the focus of our experience. Based on follow-up imaging studies, we're seeing outstanding early local control rates, with 95 percent of lesions free of relapse at twelve months following treatment," Dr Greco added.

Dr Po-Ming Wang, chief radiation oncologist at Cheng Ching General Hospital in Taichung, Taiwan, summarized his experience using Varian's TrueBeam STx system to deliver gated RapidArc radiosurgery in the treatment of liver cancer. RapidArc speeds up highly precise radiosurgery treatments by constantly shaping and reshaping the treatment beam to match the shape of the tumor while delivering dose continuously as the treatment machine rotates around the patient. Gated RapidArc makes it possible to monitor patient breathing and compensate for tumor motion during a RapidArc treatment.

"With the TrueBeam STx, we are able to image the tumor during the treatment and adapt the treatment delivery in 'real time' based on observable changes," said Dr Wang. "This helps us to better target the liver tumor and minimize the impact on surrounding critical organs like the duodenum or stomach. The gated RapidArc technique also helps to preserve more of the patient's normal liver volume," Dr Wang added.