MedicalXpress

Personalized treatment may help some liver cancer patients

October 22 2010

A more personalized treatment for people with a type of metastatic liver cancer --hepatocellular carcinoma -- may be possible by targeting the protein c-Met, according to Penn State College of Medicine researchers. Hepatocellular carcinoma (HCC) is the number three cause of cancer deaths in the world.

Hanning You, M.D., Ph.D., postdoctoral fellow, and C. Bart Rountree, M.D., assistant professor of pediatrics and pharmacology, targeted c-Met, a known receptor for hepatocyte growth factor, the substance that appears to drive liver cancer metastasis. In a pre-clinical translational study, they show that c-Met is overexpressed in metastatic liver cancer cells and is associated with a poor prognosis.

"In addition to finding that c-Met is a significant biomarker for liver cancer, we conducted an analysis of six published manuscripts and 1,051 patients," said You. "Through this analysis we demonstrated and confirmed that c-Met activation is strongly associated with poor prognosis and aggressive features in patients with liver cancer tumors."

Currently, physicians treat hepatocellular carcinoma with a "one size fits all" approach, so targeting c-Met may be an effective therapy for some patients.

"The five-year-survival of HCC is only 2 percent when diagnosed after metastasis," said Rountree. "Sorafenib, the most recently approved mediation for advanced HCC, benefits patients with an extra two months

survival."

By targeting c-Met, researchers suppressed tumor growth and proliferation in a mouse model. They believe that molecular profiling will allow better treatment for the 45 percent of HCC patients who have c-Met positive tumors.

The research team is now looking to apply their findings to HCC in humans. The lab has applied to the National Cancer Institute to join a phase I trial using a c-Met inhibitor for advanced HCC.

"We are also working to build a second trial where we will establish a molecular profile of HCC patients before we start treatment, and then only give the c-Met inhibitor to the patients with a c-Met positive tumor, in effect personalizing their therapy," Rountree said.

Provided by Pennsylvania State University