

New Biomarker Could Lead To The World's First Reliable Test For Liver Cancer

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(PhysOrg.com) -- Liver cancer is the fifth most common cancer in the world and one of the deadliest cancers since it is rarely diagnosed until late in its development.

The lack of reliable screening tests for liver cancer contributes to its high mortality rate since tumors seldom cause symptoms until the later stages when treatment options become limited and the prognosis is poorer. Death usually occurs not long after diagnosis.

But that might be about to change, according to Dr. Claus Fimmel, a hepatologist who is involved in an international study of a protein that is shaping up as a promising basis for the development of an effective liver-cancer screening test for high-risk patients.

"The protein pretty reliably shows up in the blood of patients with liver cancer in several studies from Europe, China and the United States," said Fimmel, who is division director of gastroenterology, [hepatology](#) and nutrition at Loyola University Medical Center in Maywood. "We're very excited about its prospects."

The current blood test used to screen for early tumors in people at high risk for liver cancer involves a protein called alpha-fetoprotein (AFP), Fimmel said. Patients who are at risk for liver cancer typically have [chronic liver disease](#) such as cirrhosis due to infection with the [hepatitis B](#) or C virus or alcoholism.

"Unfortunately, the AFP test is not good enough to detect liver cancer in time, and it often generates a false positive in patients who end up not having the cancer," Fimmel said.

The protein being studied is known as Golgi Protein-73 (GP73), which was first discovered in Dr. Fimmel's lab in 1998. Subsequent studies have shown that the blood levels of GP73 are consistently higher in patients with liver cancer than in healthy individuals. In addition, levels were not significantly higher in patients with diseases other than liver disease.

"If you stumble upon something that interesting from a basic science point of view but that has potential practical value for early diagnosis, it's very gratifying," Fimmel said. "We're on the verge of understanding what switches GP73 on and how we can use it for diagnostic purposes."

For far, the blood samples of more than 1,000 patients with various stages of liver and non-liver disease have been tested for the presence of GP73 in several studies around the world. Several medical diagnostic companies are in the process of developing automated serum tests for the protein that could be performed in routine hospital laboratories.

"GP73 is currently being test in clinical trials in a couple of places. The biggest study is being done in China where liver cancer is very common due to the large numbers of people infected with hepatitis B," Fimmel said.

With the large number of Americans infected with hepatitis C, the number of people developing cirrhosis in the United States is expected to rise during the next 20 years.

"If you have cirrhosis, each year you have a 1 to 2 percent higher chance of developing liver cancer. Each year it goes up a notch," Fimmel said.

"Consequently, a person has as much as a 20 percent risk for developing [liver cancer](#) after having cirrhosis for 20 years."

Provided by Loyola University

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