Plasma DNA level is a reliable marker of recurrent esophageal cancer, study finds

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New research published in the July issue of the *Journal of the American College of Surgeons* shows elevated plasma DNA is a reliable marker of recurrent esophageal cancer. The study also suggests that plasma DNA levels rise before clinical evidence of cancer recurrence in the majority of patients.

Esophageal cancer, one of the leading causes of cancer death worldwide, is usually diagnosed at a late stage. An accurate marker for detecting esophageal cancer that has spread (metastasized) beyond the esophagus may allow for better selection of patients for adjuvant therapy, prediction of response to therapy and early intervention when the disease does recur. Although carcinoembryonic antigen (CEA) and plasma DNA are known to be elevated in patients with esophageal cancer and are higher in patients with metastatic disease, the sensitivity and specificity of these markers in the diagnosis of recurrent cancer has not been compared.

"The diagnosis of metastatic esophageal cancer prior to surgery and recurrent disease after surgery remains challenging, as the clinical staging of esophageal cancer is difficult and current scanning technologies are limited," said Farzaneh Banki, MD, assistant professor of surgery, Department of Surgery, Keck School of Medicine at the University of California, Los Angeles. "The results of our study suggest that measuring DNA levels could improve the diagnosis of and prediction of recurrence of this disease."

The study analyzed the sensitivity and specificity of plasma DNA as a preoperative marker of metastasized disease and a postoperative marker in residual or recurrent esophageal cancer. Plasma DNA was measured in 45 patients with esophageal cancer and 44 healthy volunteers; serum CEA was measured in 31 patients.

Plasma DNA was found to be more sensitive than CEA for detecting cancer that cannot be removed through a surgical procedure (100 percent versus 40 percent) and was also more sensitive than CEA in detecting recurrent esophageal cancer (100 percent versus 33 percent). All patients with recurrent disease had elevated plasma DNA, and no patient with normal plasma DNA had recurrent disease (i.e., there were no false positives or false negatives for plasma DNA). Plasma DNA rose before there was clinical evidence of recurrence in 67 percent of patients, versus 17 percent of patients measured for CEA).

The researchers suggest the role of plasma DNA is of more value after surgical intervention in identifying patients with recurrent disease. In contrast, a normal CEA level should be interpreted cautiously, as it does not exclude recurrent disease. The researchers assert that greater numbers of patients and longer follow-up are necessary to confirm these findings.

Source: Weber Shandwick Worldwide