Commentary

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# Effect of *ADAM10* Gene Polymorphisms and Expression on Hepatocellular Carcinoma

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## About the Study

Hepatocellular Carcinoma (HCC) is the third leading cause of cancer mortality, HCC risk is higher in patients infected with HBV, HCV, diabetes mellitus, and in smokers. A Disintegrin and Metalloprotease (ADAMs) family proteins have shown a multiple functions in cell adhesion, migration, proteolysis and signalling, many researchers mention the role of ADAMs as novel markers for assessment of cancer and metastasis progression. And it is a major cause of death in patients with cirrhosis. Hepatocellular carcinomas progress with local expansion, intrahepatic spread, and distant metastases. HCC is increasing in occurrence and has a great mortality rate. One of the primary risk factor for HCC is cirrhosis due to chronic hepatitis B or hepatitis C, HCC risk is higher in patients infected with HBV, HCV, diabetes mellitus, and in smokers. Other risk factors include occupational exposure to pesticides, aflatoxins and obesity.

A disintegrin and metalloprotease contain central membrane and secreted glycoproteins. Some ADAM family members have zinc binding consensus sequence at their catalytic site and show a proteolytic activity. (ADAM) family proteins have shown a multiple functions in cell adhesion, migration, proteolysis and signalling. One of their best-established roles is the release of biologically important ligands, such as tumor necrosis factor-α, epidermal growth factor, and transforming growth factor-α7. Because these ligands have been implicated in the formation and progression of tumors, it might be expected that the specific ADAMs involved in their release would also be involved in malignancy. ADAMs may compromise in several diseases and inflammatory disorders, for example, cancer, inflammation, asthma and Alzheimer disease.

Many researchers illustrated the role of ADAMs as novel markers for assessment of cancer and metastasis progression, so, ADAMs become a potential target for management of cancer. In fact, non-selective blocking of ADAMs may have many risky adverse effects. Therefore, latest researches focused on selective inhibition of ADAM members (*ADAM-10 & ADAM-17*) which largely have promising results in inhibiting tumor cell growth. For instance, tyrosine kinase inhibitors are currently undergoing clinical trials against multiple cancer types. SNPs of ADAM-10 may be involved in HCC progress. ADAM-10 SNPs may be used as therapeutic goals to evaluate poor prognoses for HCC.

Hepatocellular carcinoma is the sixth most common cancer, and is the third leading cause of cancer mortality, Cirrhosis is an important risk factor for hepatocellular carcinoma, and other factors associated with increased incidence of HCC as chronic viral hepatitis, alcohol, old age, obesity, and smoking. The present study assessed presence of multiple factors associated with HCC. Data showed that HCC patients were found to have significantly higher age than patients with cirrhosis and healthy controls, history of smoking was significantly higher among patients with hepatocellular carcinoma, healthy participants had significantly lower BMI than cirrhotic and HCC patients.

In summary, liver cancer is one of the most common cancer worldwide, ADAM-10 is a protein which is over expressed in HCC, and its inhibitors may use in treatment of liver cancer. SNPs of ADAM-10 are overexpressed in HCC patients and may be involved in HCC progress. These findings highlights that ADAM inhibitor may be used as therapeutic goals in treatment of HCC.