Proteomics for the early diagnosis and treatment of hepatocellular carcinoma

VIJAY KUMAR[1]

The incidence of primary cancer has been increasing globally and now-a-days it constitutes the 5th most frequent cancer of humans representing around 5% of all cancers worldwide. Chronic HBV infection assumes greater significance because of its reported association with cirrhosis, and more ominously hepatocellular carcinoma or HCC. Hepatitis B infection constitutes a major global problem with nearly 400 million infected individuals. It contributes to a significant degree of morbidity on account of the associated chronicity that develops in 5-10% of infected adults and more than 90% of infected neonates. Globally, around one million people suffering from HBV-related chronic heptatitis and HCC die per year. Despite the availability of an effective prophylactic vaccine against hepatitis B for over 20 years, effective treatment of the chronic disease and associated HCC remains elusive. Therefore, identification of the cellular mediators and effectors of HCC is an important medical objective for developing new diagnostic tools and therapeutic strategies against it. Molecular biomarkers hold great promise for refining our ability to establish early diagnosis and prognosis for HCC, and to predict response to therapy. Proteomics is a rapidly expanding discipline that is expected to change the way in which disease can be diagnosed, treated and monitored in the near future. The proteomic analysis of serum and tumors should allow accurate prediction of what is happening at the protein level in a cancer cell or a body fluid proteome. It is the hope that, by deciphering the alterations in serum and liver proteome, biomarkers and patterns of biomarkers will be found that should be helpful in improving early detection, diagnosis and treatment monitoring of HCC. In the last few years, HCC has been extensively investigated using different proteomic approaches on HCC cell lines, animal models, and in human tumor tissues. Though a new generation of HCC markers awaits validation in properly controlled clinical studies, an overview of the recent development in this area will be presented.

REFERENCES

1. Feng JT, Shang S, Beretta L. (2006) Proteomics for the early detection and treatment of hepatocellular carcinoma. Oncogene 25, 3810-3817.

2. Lok AS. (2000) Hepatitis B infection: pathogenesis and management. J Hepatol. 32 (1 Suppl), 89-97.

3. Lopez JB. (2005) Recent developments in the first detection of hepatocellular carcinoma. Clin Biochem Rev 26, 65-79.

4. Parkin DM, Bray F, Ferlay J, Pisani P. (2005) Global cancer statistics, 2002. CA Cancer J Clin 55, 74-108.

5. Spangenberg HC, Thimme R, Blum HE. (2006) Serum markers of hepatocellular carcinoma. Semin Liver Dis 26, 385-390.

The Gambia hepatitis intervention study (GHIS)

PIERRE HAINAUT[2]

The Gambia Hepatitis Intervention Study (GHIS) is a collaborative undertaking by the International Agency for Research on Cancer, The Government of the Republic of The Gambia and the Medical Research Council of the United Kingdom. This programme was launched in 1986 with the objective of evaluating the efficacy of Hepatitis B (HB)

1. Scientist, Virology Group, International Centre for Genetic Engineering and Biotechnology. INDIA. vijay@icgeb.res.in
2. Director, Cluster of Molecular Carcinogenesis, International Agency for Research on Cancer (WHO), France. hainaut@iarc.fr