Molecularly targeted therapy for hepatocellular carcinoma from the basic and clinical aspects

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Although the diagnosis of and treatments for hepatocellular carcinoma (HCC) have advanced remarkably in recent years, HCC is still one of the most common malignancies, accounting for nearly 1 million deaths per year [1]. The incidence is now increasing worldwide as a result of the high prevalence of hepatitis virus infection.

To overcome HCC, many efforts, including primary prevention, have been made. However, we have encountered many patients who suffer from advanced HCC but are not indicated for hepatic resection, transarterial chemo-embolization, local ablation therapy, and liver transplantation. Furthermore, even if curative treatment is achieved, a major portion of HCC patients is afflicted with intrahepatic and extrahepatic recurrence. Although systemic and regional chemotherapy is indicated for those patients, the efficacy of the conventional chemotherapies is quite limited. Thus, it is urgently necessary to develop novel therapeutics that cover the systemic disease as well as local disease.

Recently, the molecular mechanisms behind carcinogenesis and tumor development have been clarified. Based on this evidence, therapeutics that target the key molecules

responsible for cancer progression have been developed. The most representative targets are Bcr-Abl for chronic myeloid leukemia and c-kit for GIST. However, the progression of HCC is assumed to originate from many genes, indicating that multiple targets are required to conquer HCC.

In this issue, we will invite two excellent experts to provide information about the basic and clinical aspects. I hope these review articles will lead to an understanding of the current status and provide perspectives concerning molecularly targeted therapy for HCC, and that they will facilitate researchers' investigations of molecularly targeted treatments and help clinicians provide medical treatment for HCC patients.

Reference

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