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Preface: An Update in the Management of Chronic Hepatitis B  ix
Tarik Asselah and Patrick Marcellin

HBV Infection and Hepatocellular Carcinoma  375
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The hepatitis B virus (HBV) plays a dominant role in the 749,000 new cases and 692,000 deaths related to hepatocellular carcinoma (HCC) that are estimated to occur each year worldwide. Chronic infection with HBV is responsible for 60% of HCCs in Asia and Africa and at least 20% of the tumors in Europe, Japan, and the United States. This article discusses the pathogenic role of HBV and the risk of HCC. Tumors almost invariably develop in the context of chronic hepatitis or cirrhosis, which makes early diagnosis the only practical approach to improve prognosis. The treatment options are also discussed.

HBsAg Quantification to Predict Natural History and Treatment Outcome in Chronic Hepatitis B Patients  399
Michelle Martinot-Peignoux, Tarik Asselah, and Patrick Marcellin

There is a growing interest in serum HBsAg quantification (qHbsAg). HBsAg titers are negatively correlated with liver fibrosis in HBeAg(+) patients. In HBeAg(–) HBsAg level <1000 IU/mL and HBV-DNA titer <2000 IU/mL accurately identify inactive carriers. During PEG-IFN treatment qHBsAg identifies patients with no benefit from therapy at week 12, allowing stopping or switched “week 12 stopping rule.” During nucleos(t)ide analogues the role of qHBsAg need to be clarified. In clinical practice qHBsAg is a simple and reproducible tool that may be used in association with HBV-DNA to classify patients during the natural history of HBV and to monitor therapy.

Impact of Therapy on the Long-Term Outcome of Chronic Hepatitis B  413
Yun-Fan Liaw

Chronic hepatitis B virus (HBV) infection is a dynamic state of interactions between HBV, the hepatocytes, and the patient’s immune system. HBV replication is the key driving force for the HBV-related immune clearance events that determine the outcomes. The extended immune clearance phase is associated with liver disease progression, including development of cirrhosis and hepatocellular carcinoma (HCC). Thus, the primary aim of therapy is to eliminate or permanently suppress HBV to reduce hepatitis activity and thereby reduce the risk or slow the progression of liver disease.

Results of Treatment of Chronic Hepatitis B with Pegylated Interferon  425
Mauro Viganò, Giampaolo Mangia, and Pietro Lampertico

Persistent viral eradication or suppression through a defined course of Pegylated-interferon (PegIFN) or the administration of a long-term potent
nucleot(s)ide analogues (NUCs) can impact positively the natural course of HBV infection by preventing disease progression. Despite the higher rates of off-therapy response achieved with PegIFN compared with NUC, its benefits are restricted to a subgroup of patients only. To increase the rates of patients who may benefit from PegIFN treatment, minimizing the adverse events, careful patient selections based on baseline features and on treatment HBsAg kinetics for individual treatment optimization are required.

Long-term Results of Treatment with Nucleoside and Nucleotide Analogues (Entecavir and Tenofovir) for Chronic Hepatitis B

Tarik Asselah and Patrick Marcellin

Chronic hepatitis B virus (HBV) infection, affecting approximately 350 to 400 million people worldwide, is associated with significant morbidity and mortality. Chronic hepatitis B remains a public health issue despite marked progress in public intervention programs. Individuals with chronic HBV infection have an increased risk for cirrhosis, decompensated liver disease, and hepatocellular carcinoma. The availability of safe and effective vaccines has reduced the burden of diseases. The choice of appropriate pharmacotherapy is critical in altering the course of the infection and reducing the costs associated with the management of chronic hepatitis B.

Treatment of Patients with HBV-related Decompensated Cirrhosis and Liver Transplanted Patients

Bruno Roche and Didier Samuel

Antiviral therapy using newer nucleos(t)ide analogs with lower resistance rates could suppress hepatitis B virus (HBV) replication, improve liver function in patients with compensated or decompensated cirrhosis, delay or obviate liver transplantation in some patients, and reduce the risk of HBV recurrence. Some form of HBV prophylaxis needs to be continued indefinitely posttransplant. However, in patients with a low-risk of HBV recurrence it is possible to discontinue hepatitis B immunoglobulins and maintain long-term nucleos(t)ide analog therapy. Currently, treatment of posttransplantation hepatitis B is a less important clinical problem than it was historically because effective antiviral therapies exist to rescue patients who failed initial prophylaxis.

Hepatitis Delta: The Rediscovery

Mario Rizzetto and Seyed Moayed Alavian

Hepatitis D is returning to western Europe through immigration. The clinical presentation recapitulates the typical features of a florid hepatitis D. Hepatitis D is also being rediscovered in the developing world and in the United States. Hepatitis D virus (HDV) remains endemic in many countries and efforts are underway to map the infection at local levels and improve the medical alert to hepatitis D. In the United States it is generally thought that HDV has gone and hepatitis D is no longer a problem. Awareness of hepatitis D in the country has recently been revived.
Hepatitis B in HIV-Infected Patients

Vincent Soriano, Eva Poveda, Eugenia Vispo, and Pablo Barreiro

Chronic hepatitis B virus (HBV) infection is common in HIV-positive individuals. Although HBV vaccination is mandatory for HIV-positive individuals with negative-HBV markers, lower rates of protection are achieved. HIV infection accelerates the course of liver disease caused by chronic HBV infection, leading to end-stage hepatic illness and increasing the risk of hepatocellular carcinoma. Anti-HBV active agents, especially tenofovir, improve outcomes. Lamivudine alone should be limited to patients with low serum HBV-DNA levels, since selection of drug resistance often compromises long-term benefits, leads to cross-resistance with other antivirals, and favors the potential emergence of HBV-vaccine escape mutants.