Enhanced immune response to hepatitis B vaccination through immunization with a Pre-S1/Pre-S2/S vaccine.

Abstract:

Efficacy and safety of recombinant yeast-derived hepatitis B vaccines for prevention of hepatitis B have been demonstrated unequivocally worldwide as reflected in reduction in HBsAg carrier rates and hepatocellular carcinoma. A new generation of recombinant HBV vaccines expressed in mammalian cells containing Pre-S/S epitopes has been developed in several countries. Such vaccines are useful in special risk groups, i.e., in non-responders to conventional HBV vaccines including older adults, obese people, health care workers, patients with renal failure and on dialysis, transplant patients, patients with HIV as well as travelers on short notice to HBV endemic regions. The future of such vaccines depends on their enhanced immunogenicity and cost profile. Sci-B-Vac(TM) is a mammalian cell-derived recombinant Pre-S1/Pre-S2/S hepatitis B vaccine which has been shown to be highly immunogenic, inducing faster and higher seroprotection rates against HBV with higher anti-HBs levels at lower HBsAg doses as compared to conventional yeast-derived vaccines. Recently, it has been suggested that such Pre-S/S vaccines against HBV might be efficacious not only for prevention but also for intervention in persistent HBV infection. Data obtained in a recent clinical trial conducted in Vietnam in patients with chronic hepatitis B suggest that repeated monthly i.m. injections of the
Sci-B-Vac(TM) co-administered with daily oral lamivudine treatment can suppress HBV replication and lead to anti-HBs seroconversion in ~50 % of treated patients. Optimization of protocols and efficacy of such an intervention, intended to bypass T cell exhaustion and immune tolerance to HBV remains to be explored.