Title: Immune Responses of Mice Immunized With HBsAg Formulated in Naloxone/Alum Mixture: Comparison to Fendrix Vaccine

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Abstract

Hepatitis B virus can cause cirrhosis of the liver and hepatocellular carcinoma. Due to the lack of sufficient immune response in whole population, several researches are being done to improve the efficacy of Alum based HBV vaccine. Here, Naloxone/Alum mixture as adjuvant was used for the HBsAg vaccine and immune parameters evaluated in immunized mice. In this study the effect of Naloxone/Alum mixture for the HBsAg vaccine has been investigated and compared to Fendrix vaccine.Female Balb/c mice were vaccinated at day 0, 14 and 28 with, Alum based vaccine or Naloxone/Alum mixture vaccine in different doses. Naloxone/Alum vaccine groups received the dose 3, 6 or 10 mg/kg of Naloxone in the vaccine formulation. One group received routine HBsAg Alum vaccine and a group received Fendrix vaccine. Some groups received Naloxone plus HBsAg without Alum and a group received HBsAg without adjuvant. PBS, Naloxone and Alum were also injected into the control groups separately. Finally, the Naloxone/Alum formulated vaccine compared with the Fendrix and routine Alum based vaccine regarding to the levels of total anti-HBS antibody, IFN-γ, IL-4, IgG1 and IgG2a and the level of lymphocyte proliferation.The level of total anti-HBS antibody in Naloxone formulated vaccine was comparable with Fendrix. Meanwhile, IFN-γ/IL-4 ratio level was significantly higher in

Naloxone formulated vaccine groups versus mere vaccine group. IgG2a was also higher in the Naloxone formulated vaccine groups. These data showed that Naloxone/Alum mixture has ability to shift the immune response toward Th1 pattern, which more potentiate the immunity against infections.

Key words: Adjuvant, Hepatitis B vaccine, Naloxone, Alum, Fendrix

Biography

Mohammad Hossein Yazdi got his PhD in the field of Pharmaceutical Biotechnology by 2014 from Tehran University of Medical Sciences, School of Pharmacy. His PhD work was about cancer treatment in particular by immunotherapy. He is now Assistant Professor at Biotechnology Research Center and Recombinant Vaccine Research Center of Tehran University of Medical Sciences and pursues his interest in both vaccine and immunotherapy of cancer and infectious diseases. He has published more than 30 papers in reputed journals and has been serving as senior lecturer of advanced immunology and immunotherapy at Tehran University of Medical Sciences.

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