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Antiviral activity of 1-methylascorbigen against bynaviral infections (in experimental).

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Prophylaxis of experimental arboviral infections in mice by 1-methylascorbigen which is a synthetic derivative of L-ascorbic acid is demonstrated. Mice infected by bunyaviruses (Rift valley fever, Issyk-Kul fever, snow shoe hare fever and Crimean hemorrhagic fever) were protected by 1-methylascorbigen. The drug was administered subcutaneously, per os and intramuscularly at the doses from 6,5 mg/kg to 50 mg/kg. Random-bred albino mice were used in experiment. Doses and schedules of the compound were found when protection reached 100%. The antiviral effect of 1-methylascorbigen was some better than L-ascorbic acid. The antiviral effect is in agreement with prophylactic action of 1-methylascorbigen at several bacterial infections. Prophylactic activity of 1-methylascorbigen is probably based on its immunomodulatory properties.

Effect of Ribavirin on SSPE Virus Infection in Hamsters

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Subacute sclerosing panencephalitis (SSPE) is a rare but progressive and fatal disorder of central nervous system. It results from a persistent measles (SSPE) virus infection. In our search for potential anti-SSPE drugs, we have examined a wide variety of antiviral compounds for their inhibitory effects on the replication of measles and SSPE virus strains in vitro, and found that several nucleoside analogues, including ribavirin, are inhibitory to the replication of various SSPE virus strains. In this study, we tested the antiviral efficacy of ribavirin in the treatment of hamsters infected with SSPE virus. Ribavirin did not improve the survival rate of infected hamsters when administered intraperitoneally at a dose of 50 mg/kg/day for ten days (maximum tolerated dose for hamsters). However, when administered intracranially, ribavirin improved the survival rate of infected hamsters in a dose dependent manner. The 50% effective dose (required to improve the survival rate of infected hamsters by 50%) was calculated to be 1.4 mg/kg/day. In particular, ribavirin showed marked activity at a dose of 10 mg/kg/day; completely improved the survival rate and totally inhibited the replication of SSPE virus in brains of infected hamsters. Ribavirin, therefore, should be pursued for its potential use in the treatment of patients with SSPE by intrathecal or intraventricular administration.