

Response to the vaccination against hepatitis B virus in children on hemodialysis

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Objectives:

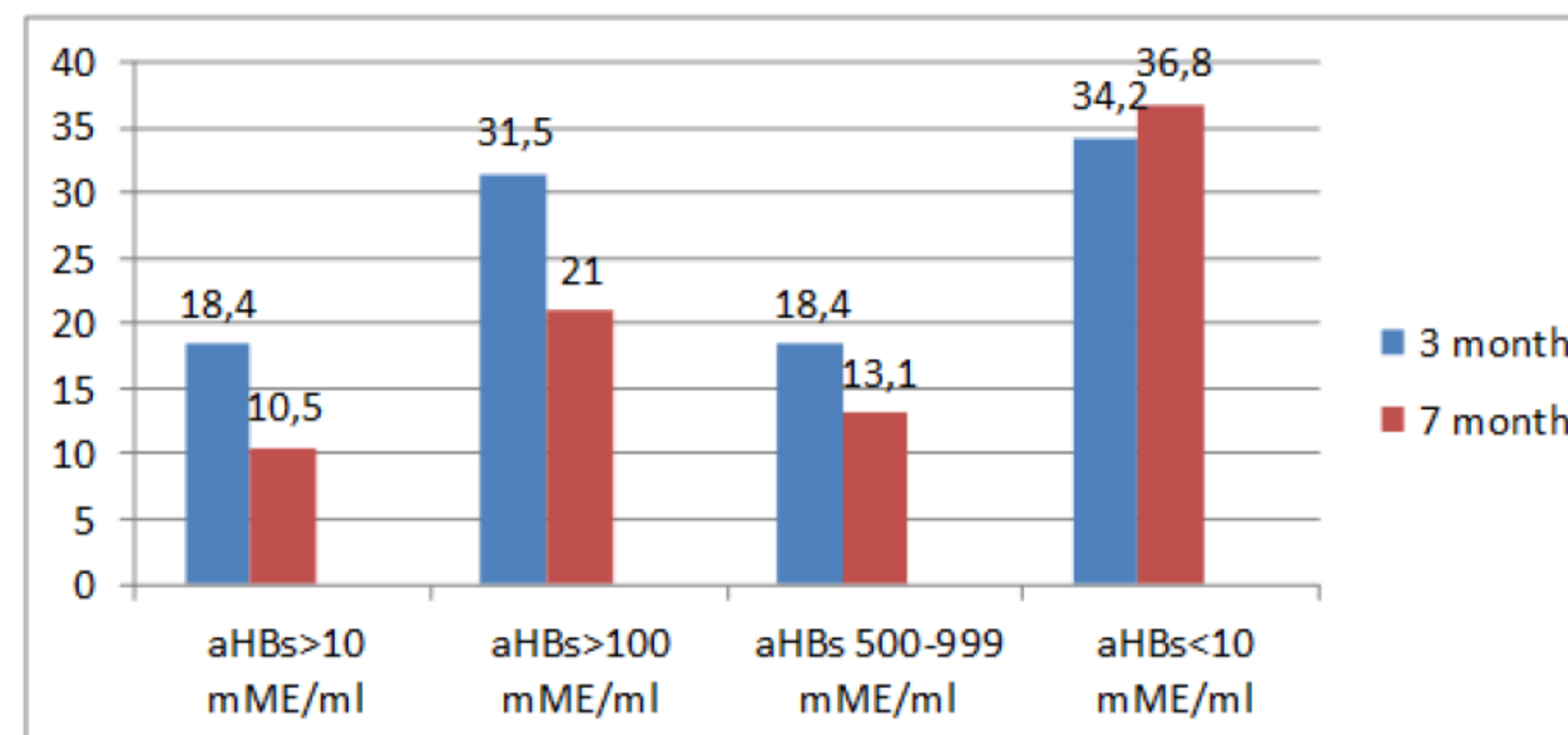
Hepatitis B remains a serious problem, particularly relevant for patients on hemodialysis (HD). Vaccination against hepatitis B virus (HBV) infection is recommended for all patients with renal insufficiency.

The purpose of this research was to assess the effectiveness of the vaccination against hepatitis B in patients on HD, conducted by the standard method.

Methods:

34 children aged from 2 to 18 years who were treated on HD were retrospectively examined. The patients analysed HbS Ag-, HbS Ab- and HCV Ab-negative at the beginning of the HD treatment received HBV-recombinant vaccine under the following scheme: 0-1-6 months in a single-dose intramuscularly in the deltoid muscle, with the establishment of seroconversion and seroprotection rate after 3 and 7 months after the beginning of the vaccination. The absence of response was determined by the insufficient seroconversion (> 10 mIU / L).

The level of positive response after 3 and 7 months of vaccination



Results:

We have found that the frequency of positive response after 3 and 7 months after the beginning of the vaccination was 18.4 and 10.5%, while with the seroprotective level of antibodies - respectively 31.5 and 21%. The number of patients with high titres of anti-HBs, equal to or exceeding 500 mIU / ml was only 18.4 and 13.1% respectively. While the frequency of negative titres of anti-HBs was 34.2 and 36.8%. An analysis of the dynamics of the production of antibodies revealed that an interim response after 3 months after the beginning of the vaccination largely determines the final results in the 7th month. Among patients (14) with a negative response to the vaccination after 3 months, the titre did not change by the end of the vaccination in 10 (71.4%). The seroconversion rate reached seroprotection only in 1 (7.1) and in 3 (21.4%) in the 7th month of the examination. In the group of patients (8) with a poor response to the vaccination in the 7th month, the titre of protective antibodies decreased in 5 (62.5%), the titre remained unchanged in 1 (12.5), and the titre of antibodies reached seroprotection in 2 (25%). Among children (12) with sufficient seroprotective level after the completion of the antibodies course, the titre of antibodies decreased in 7 (58.3%).

Conclusions:

The maintenance of a negative response in 71.4% of patients with CKD, as well as the decrease of the protective level are due to the lack of an adequate response to the vaccination in patients with uraemia, and to the vaccination against hepatitis B by the standard scheme 0-1-6 months in single dose used in Kazakhstan.