

Extended abstract

CLINICAL TRIAL: PERSPECTIVES IN THE USE OF ADSORBENT ENTEROSGEL IN NEWBORNS WITH HEMOLYTIC DISEASE

Arajev N.L., Vasilchenko L.V., Breděljeva N.K., Merikova N.L.

Odessa State Medical University, Odessa, Ukraine

Published in: Перинатология и педиатрия [Perinatology and pediatrics] no. (43) 2010, pp. 49-52

UDC: 616-085-053.2: 615246.2

Background

In the medical practice, we have already had quite an experience with treatment and prevention of hemolytic disease of the newborn (HDN). Among the treatment methods used blood transfusion and phototherapy occupies the leading position. However, given the widespread nature of infections transmitted by blood and blood preparations significantly increases the risk of contamination to child during the blood transfusion. Meanwhile the extended application of phototherapy has a negative impact on the body of the newborn, followed by the retinopathy, "bronze child" syndrome and photodermatitis. This was the reason for the research and development of new and safer treatment of HAN. A clinical research conducted by domestic and foreign scholars has determined the mechanisms of medicinal intestinal adsorbents effect in various diseases in adults and older children. However, the effect and methods of use of oral adsorbents in the early neonatal period has been explored insufficiently.

Objectives

To develop a methodology to explore the effectiveness of adsorption therapy in the complex treatment of hemolytic disease of the newborn.

Materials and Methods

The experimental group consisted of 92 neonates with HAN of varying severity, which were administered Enterosgel alongside with the usual basic therapy. In the case of 37 children in the experimental group, the disease was caused by Rh-incompatibility of mother and fetus blood, in 55 children - by ABO incompatibility system. All the children were divided into three groups according to the severity of the disease: 1st subgroup consisted of 18 infants with the mild disease course, 2nd subgroup included 56 children with moderate course, and 3rd subgroup consisted of 18 newborns with severe course of isoimmune hemolytic disease.

The control group consisted of 20 children with HDN who received only standard therapy.

Enterosgel was administered to the newborns with mild HDN course in a dose of 1 g / kg / day for 5 days. Children with moderate HDN course received Enterosgel three times daily in a dose of 1.5 g / kg / day for 7-8 days; in the cases of severe HDN, the dosage of Enterosgel was 2 g / kg / day for 9-10 days. The preparation was administered orally using the bottles. Daily doses of Enterosgel were pre-dissolved in 30 ml of saline. In children with missing or weak sucking reflex Enterosgel was administered through orogastric tube.

The criteria for determining the severity of a pathological process and efficiency of use of Enterosgel included clinical and laboratory parameters, the results of biochemical tests of liver function (bilirubin, hepatospecific enzymes - ALT, AST, LDH) and indicators of endogenous intoxication syndrome (medium-molecular peptides). Data processing was performed using statistical methods and quantification of the mean and squared deviations from the mean values, as well as Student's t-test.

Results

In the experimental group, the therapeutic effect of Enterosgel was evident within 5 days in all three subgroups. Clinically, this resulted in an increase in physical activity and sucking, reduce in the liver and spleen size, regeneration of neonatal reflexes. Reduction of endogenous intoxication and normalization of bilirubin metabolism has been shown by lower levels of medium-weight peptide fractions and indirect bilirubin in the blood. Compared with the control group, length of inpatient stay of the infants has reduced by an average by 1.0 day, while duration of jaundice has not exceeded 7 days.

Enteral sorption has allowed to substantially reduce the number of exchange transfusions and decrease the number of phototherapeutic sessions by 30%.

When performing adsorption treatment with Enterosgel in children in the early neonatal period, no case of adverse reactions or complications has been recorded.

Conclusions

Treatment method of intestinal adsorption with Enterosgel made in the early days in newborn infants with isoimmune hemolytic disease is pathogenetically substantiated, provides more favorable course of the pathological process, the positive dynamics laboratory markers leads to a lower number of exchange blood transfusions and phototherapy sessions, reduces the risk of infection in newborns and shortens the period of inpatient stay. The intake of Enterosgel is safe, its implementation is simple and affordable.

Keywords: adsorbent, hyperbilirubinemia, hemolytic disease of the newborn, enteral sorption, Enterosgel, the newborn.