Comparative efficiency and safety of application hydroxide polymaltose complex of iron (III) and sulfate of iron (II) for treatment of iron deficiency anemia in children

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The question of comparative efficacy and safety of preparations of iron remains the subject of discussions. 46 children aged 6 months to 17 year were included in our study: 24 children received ferrous sulfate II, 22 children received hydroxide-polymaltose complex (HPC) of iron III. These groups were comparable by severity of anemia, age and sex. In addition to efficacy, the degree of toxicity of iron preparations was determined (the number of adverse events, the level of carbonyl derivatives). After 3 months of ferrotherapy, the average Hb concentration in children received iron II sulfate was higher in comparison with children taking HPC III (13.16±0.284 g/dL in the iron II sulfate group against 12.1±0.394 g/dL in the group of HPC III (p=0.033). But increase Hb level more 1.0 g/dL in 1 month of ferrotherapy were observed in both groups. After 3 months of therapy, the average serum ferritin concentration was higher in the group of patients taking iron sulfate (24.0±2.95 μg/l vs. 13.47±1.6 μg/l, respectively) (p=0.003). The undesirable effect of oral ferrotherapy were detected in 11 (45.8%) of patients taking ferrous sulfate II and in 3 (13.6%) patients taking HPC III (p=0.014). For the first time, an assessment of the toxicity of preparations was carried out using the method of integrated evaluation of oxidative modification products of proteins products. We have shown that iron preparations lead to the development of oxidative stress, which is more pronounced when using ferrous sulfate II.

Biography
Lebedev Vyacheslav Vyacheslavovich has graduated from the Ryazan State Medical University in 2013. In 2014, he has completed his Internship in the specialty Pediatrics. Presently he is a full-time Postgraduate student of the Pediatrics Department with the course of Pediatric Surgery.

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