



COMPOSITION OF VARIOUS HEMATOGEN PREPARATIONS AND THE TOXIC EFFECTS OF THEIR COMPONENTS ON THE HUMAN BODY

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Relevance. One of the most common health issues observed among the population today is iron deficiency. According to the World Health Organization (WHO), in 2023, anemia was diagnosed in 2.24 billion people worldwide, and this number continues to increase daily. In Uzbekistan, anemia has been recorded in 17.5% of men and 31.2% of women. Iron deficiency raises the demand for iron-containing preparations, which necessitates their production. Currently, the pharmaceutical market offers various types of iron-containing medicines. These preparations are based on iron (Ferrum), but they differ in their main and excipient components, as well as in their dosage forms—such as tablets, syrups, injections, biologically active supplements, and food-like products such as bars known as hematogen. Hematogen lat. *Haematogenum* in greek αἷμα (blood) and γένος (generation). In medicine, it is used as a means of stabilizing blood formation. Its main component is purified albumin or iron salts. Albumin is derived from bovine blood, purified of impurities, and dried. To improve absorption of iron in the body, vitamins, as well as flavoring or coloring agents, may be added. Hematogen preparations were widely sold in pharmacies in Soviet Union and enjoyed high sales. However, during that time, the albumin used in production was often not purified and bovine blood was directly incorporated into the product, which reportedly led to numerous bacterial infections among the population. Based on this information, the task was set to improve the composition of the hematogen product.

Purpose of the study. To examine the composition of various hematogen preparations and investigate the toxic effects of their components on the human body, providing toxicological recommendations to prevent poisoning.

Research methods and techniques: Current data show that the consumption of iron-containing preparations among patients is significantly high. However, this has also led to certain problems, including cases of iron poisoning. Literature sources indicate that some patients particularly children may not digest iron, and in severe cases of anemia or gastrointestinal diseases, iron absorption may be impaired, resulting in unabsorbed iron accumulation and acute poisoning caused by iron preparations.

Results: Different types of iron-containing hematogen preparations available on the pharmaceutical market of Uzbekistan were studied. Imported hematogen products manufactured in Russia, Belarus, and Ukraine, as well as locally produced preparations by INVITRIS LLC, were analyzed for their composition. Additionally, data on appropriate measures to be taken in cases of poisoning were collected.

Conclusion: Iron-containing compounds should be administered strictly according to a physician's prescription, in the recommended dose and at the prescribed time, for patients with iron deficiency. Since acute poisoning has been more frequently observed in children, it is important to carefully monitor the dosage of iron-containing hematogen preparations.