

## **The impact of intravenous deferoxamine during the blood transfusion on reduction of serum ferritin in thalassemia patients**

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### **Abstract**

**Introduction:** A blood transfusion in patients with thalassemia major is an important treatment base. Iron overload resulted from long-term transfusion-related using iron chelators particularly by the deferoxamine can be reduced. Deferoxamine transfusion is currently conducted at evening (6 nights on a week) and by the pump. Deferral of deferoxamine consumption caused iron overload and its symptoms. Furthermore, applying the other method which is easy to handle and reduce monthly deferoxamine consumption rate is essential. One of these methods which has been mentioned in references is simultaneous blood transfusion and deferoxamine.

**Methods:** This was an experimental study that has been done on 34 thalassemic patients referred to Ardabil City hospital. In these patients, intravenous deferoxamine transfused with a three-way connection with blood transfusion. The study duration was 6 months and all patients checked in three and six months after treatment.

**Results:** 15 patients were men (45.7%) and 19% were women (54.3%). The mean age of patients was 20.1 with 5.7 standard deviation. Results showed that subcutaneous deferoxamine consumption rate and  $L_1$  three and six months after simultaneous blood transfusion and intravenous deferoxamine and also average rate of ferritin three months after studying proportion to pre-studying had been reduced significantly. But ferritin reduction was not significant statistically six months after due to the arbitrary reduction of subcutaneous deferoxamine consumption and  $L_1$ . Reduction rate of subcutaneous deferoxamine consumption in patients who had undergone splenectomy was more than other patients. Evaluating the impact of simultaneous intravenous deferoxamine and the blood transfusion in terms of age and gender was not meaningful statistically.

**Conclusion:** Simultaneous intravenous deferoxamine and the blood transfusion on thalassemia major cause significantly ferritin reduction and subcutaneous deferoxamine consumption and  $L_1$  that this method is applicable over patients who have undergone splenectomy. Therefore, it is recommended to use this method.

**Key words:** deferoxamine, thalassemia, ferritin.