

DRUG PROFILE**IRON CHELATION IN CHILDREN**

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Abstract: *Currently, the goal of iron chelation has shifted from treating iron overload to preventing iron accumulation and iron-induced end-organ complications, in order to achieve a complication-free survival and an improved quality of life of children with iron overload. New chelation options increase the likelihood of achieving these goals. Timely initiation, close monitoring and continuous adjustment are the cornerstones of optimal chelation therapy in children. Despite use of iron chelators for more than 60 years, grey areas still remain. The three available iron chelators have been reviewed.*

Keywords: *Iron overload, Iron chelators, Desferrioxamine, Deferiprone, Deferasirox.*

Points to Remember

- *Uncontrolled transfusional iron overload increases the risks of heart failure, endocrine damage, liver cirrhosis and hepatocellular carcinoma.*
- *Chelation therapy is an effective treatment modality (but not ideal as yet) in improving survival, decreasing the risk of heart failure and decreasing morbidities from transfusional iron overload and should be started at least within 2 years of starting regular blood transfusions.*
- *Response to chelation is dependent on the dose and the duration of exposure*
- *Changes in body iron in response to transfusion and chelation can usually but not always be estimated from the trend in serum ferritin - Liver iron concentration (LIC) is better indicator of total body iron, and serum ferritin is an approximate marker of LIC.*
- *Iron mediated tissue damage is often irreversible, and removal of iron deposited in tissues by chelation is slow - particularly after it has escaped the liver. Chelation of liver iron is faster than from the myocardium.*
- *Heart iron accumulates later than liver iron, and is rare before the age of 8 years.*
- *Over chelation increases side effects from chelation therapy, and doses should therefore be decreased as serum ferritin or liver iron levels fall (demonstrated most clearly with DFO)*
- *The chelation regime must be tailored for the individual child and will vary with the clinical situation.*
- *Chelation therapy will not be effective if it is not taken regularly - a key aspect of chelation management is to work with patients to ensure adherence.*

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