

## TITLE

Effect of Deferasirox on serum ferritin level in children with Thalassemia major: Impact of transfusional iron load

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## ABSTRACT

**Background:** Ongoing transfusional iron load (TIL) is an important determinant while deciding starting and subsequent dose adjustment of deferasirox during course of chelation therapy. So present study aims to find out effect of different dosing of deferasirox over the serum ferritin level in children with thalassemia major with impact of rate of transfusional iron load.

**Methods:** This one year observational study was carried out in 35 transfusion dependent  $\beta$ -thalassemic patients aged 2-18 years. Patients with baseline serum ferritin 1000-1500ng/ml and/or receiving TIL 0.2-0.3mg/kg/day were started 20mg/kg/day deferasirox and patients with ferritin>1500ng/ml and/or having TIL > 0.3mg/kg/day were started 30mg/kg/day deferasirox. Serum ferritin was repeated in every three months. Dose adjustments were performed on serum ferritin trends in steps of 5-10mg/kg /day to maximum 40mg/kg/day. Evaluation of relationship between dose adjustment, percentage of reduction in serum ferritin and TIL was done.

**Results:** Group-1 patients(42.8%) had TIL 0.2 to 0.3mg/kg/day whereas Group-2(37.1%) and Group-3(20%) children had TIL >0.3-0.4mg/kg/day and >0.4 mg/kg/day respectively. Starting dose of deferasirox in 25.7% patients was 20mg/kg/day and in rest were 30mg/kg/day. Average dose of deferasirox in group-1 was significantly lower as compared to group-2 and group-3 patients (  $p < 0.05$ ). Significant decline in mean serum ferritin was observed in all three groups (  $p < 0.05$ ). There was a significant positive correlation between TIL and average drug dose prescribed ( $r=0.5411$  and  $p=0.0007$ ) but negative insignificant correlation was observed with percentage of reduction in serum ferritin( $r=0.0027$  and  $p=0.98$ ).

**Conclusions:** Deferasirox 30mg/kg/day significantly reduces serum ferritin and is well tolerated in majority of patients having TIL 0.3-0.4mg/kg/day where as 20mg/kg/day is required in patients having low transfusional iron intake.

## BIOGRAPHY

Dr. Santosh Shukla has completed his MD Pediatrics from MLN Medical College Prayagraj UP INDIA and affiliated as Assistant Professor in department of Pediatrics MLN Medical college and also working as Nodal officer for Thalassemia Program

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