



SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

Patients with TDT are at risk of developing serious complications from iron overload. In patients with severe iron overload. Complications may manifest as liver cirrhosis, cardiomyopathies and endocrine disorders such as diabetes, hypothyroidism and delayed puberty. To reduce such complications, Iron Chelation Therapy (ICT) are used to reduce iron burden in the body. From observation in our unit, ICT was not adequately delivered to the patients due to several factors identified in this clinical audit.

PROCESS OF GATHERING INFORMATION

A prospective study was conducted in two phases with intervention in between. All TDT patients admitted for regular transfusion in paediatric ward (n=22) was included in the study. First phase of audit was conducted from August to September 2023, followed by a package of intervention from October 2023 to January 2024. Following that, second phase of audit was conducted from February to March 2024.

ANALYSIS AND INTERPRETATION

Table 1: Demographic and clinical characteristic of subjects (n=22)

Demographic and clinical characteristics	
Age group (at baseline audit), n (%)	
< 5 years old	5 (22.7)
5 to < 10 years old	4 (18.2)
10 to < 15 years old	10 (45.5)
15 to < 20 years old	3 (13.6)
Male, n (%)	15 (68.2)
Malay ethnicity, n (%)	22 (100.0)
Status of Chelation	
Adequate chelation	0 (0.0)
Inadequate chelation	22 (100)

Serum Ferritin Level at Baseline Audit

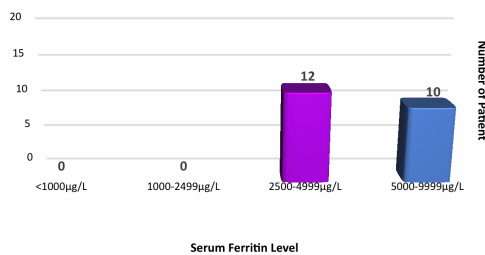


Figure 2: Serum Ferritin Level at Baseline Audit

EFFECTS OF CHANGE

Table 2: ICT dose adjustment during pre and post intervention (n=22)

ICT dose adjustment, n (%)	Pre intervention	Post intervention
Yes	8 (36.4%)	15 (68.2%)
No	14 (63.6%)	7 (31.8%)
No ICT adjustment due to;		
No action was taken by the prescriber	6 (42.9)	0
Serum ferritin was not traced during TCA	2 (14.2)	0
Serum ferritin was reducing in trend	4 (28.6)	5 (71.4)
Recently initiated ICT	1 (7.1)	0
Poor compliance to ICT	1 (7.1)	1 (14.3)
Laboratory error	0	1 (14.3)

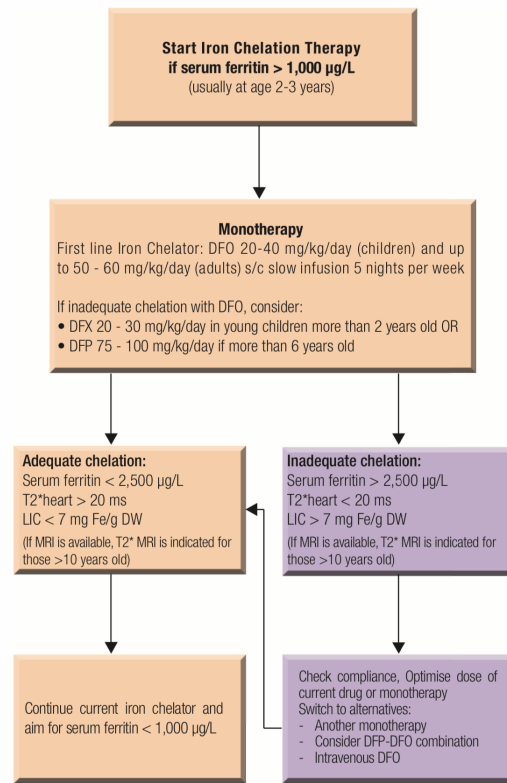
Table 3: Compliancy towards usage of the algorithm (n=22)

Compliancy to the use of algorithm, n(%)	Pre intervention	Post intervention
Yes	14 (63.6)	22 (100)
No	8 (36.4)	0

KEY MEASURES FOR IMPROVEMENT

Management of Transfusion Dependent Thalassaemia

ALGORITHM FOR IRON CHELATION IN TRANSFUSION DEPENDENT THALASSAEMIA



Abbreviations: DFO – Desferrioxamine DFP – Deferiprone DFX – Deferasirox LIC – Liver Iron Concentration

STRATEGY FOR CHANGE / INTERVENTION

1. Thalassaemia clerking sheet was updated with more concise information
2. Algorithm was displayed in every thalassaemia case notes for reference
3. SF level was traced 3 monthly followed by ICT dose adjustment following discussion between paediatric and pharmacist incharged
4. CME on management of iron overload in TDT patients to all staff
5. Orientation was given to the newly joined officer in paediatric ward

THE NEXT STEP

- 1- Re-audit will be done from time to time to ensure continuation of correct practices in the management of TDT patients in paediatric ward.
- 2- Next audit will also be focusing on observing reduction of SF level and looking out for possible side effects on ICT due to it's dose increment/adjustment.

REFERENCE

1- Clinical Practice Guidelines - Management of Transfusion Dependent