ELSEVIER

Blood 142 (2023) 2473–2474

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

112.THALASSEMIA AND GLOBIN GENE REGULATION

Efficacy of Low Dose Vs Standard Dose of Thalidomide in Patients with Transfusion-Dependent Thalassemia (TDT): A Non-Inferiority Trial

Shruti Kakkar[1], *Ratna Sharma*[2], *Amita Mahajan*[3], *Nita Radhakrishnan*[4], *Priyanka Dewan*[5], *Mamta Manglani*[2], *Amit Pandey*[6], *Manish Goel*[7], *Nupur Parakh*[8], *Varinder Singh*[8], *J S Arora*[9], *Jagdish Chandra*[10]

[1] Pediatrics, Dayanand Medical College and Hospital, Ludhiana, India
[2] MCGM, Comprehensive Thalassemia Care, Pediatric Hematology-Oncology and BMT centre, Mumbai, India
[3] Pediatrics, Indraprastha Apollo Hospital, New Delhi, India
[4] Pediatric Hematology Oncology, Post Graduate Instituite of Child Health, Noida, IND
[5] Pediatrics, Dayanand Medical College and Hospital, Ludhiana, India
[6] Pediatric Hematology Oncology, Post Graduate Institute of Child Health, Noida, India
[7] Department of Community Medicine, Lady Harding Medical College, New Delhi, India
[8] Department of Pediatrics, Kalawati Saran Children's Hospital and associated Lady Harding Medical College, New Delhi, India
[9] National Thalassemia Welfare Society, New Delhi, India
[10] Department of Pediatrics, ESIC Model Hospital and PGIMSR, Ludhiana, India

Background
Thalidomide has been demonstrated to induce global gene expression hereby increasing the proliferation of erythroid cells. Recent studies have revealed encouraging data regarding the efficacy and safety of thalidomide in both transfusion dependent (TDT) and non-transfusion dependent (NTDT) thalassemia. However, the optimal dose of thalidomide remains unclear. The study was designed to compare the efficacy and safety of thalidomide at low-dose (1 mg/kg/d) vs standard-dose (2 mg/kg/d).

Methods
Patients with TDT > 12 years of age with no recent (previous 6 months) intake of Hb enhancers were enrolled in a non-inferiority trial across 4 sites in India. Patients with hypersplenism, prior history of thromboembolism, HIV, active hepatitis B/C infection, or any other known systemic illness like neurological, renal, significant hepatopathy, and sexually-active females unwilling to use contraceptives/undergo medical termination of pregnancy in case of accidental pregnancy while on the drug were excluded. Patients were randomised to receive low-dose or standard-dose thalidomide for 6 months. Pre-transfusion Hb, transfusion frequency and volumes, and adverse effects were recorded at each visit. Response was graded based on reduction in transfusion requirement at 24 weeks: Good (> 50 %), moderate (25-50 %), or minimal (<25%).

Results:
A total of 188 patients with mean age of 18.1 ± 5.2 years and M:F ratio of 2.1:1 were enrolled. 85.6% (80 in low-dose and 81 in standard-dose) participants completed the study period. 14.4% discontinued thalidomide due to various reasons. The mean Hb and baseline transfusion requirement were 8.6 ± 0.98 g/dl and 35.91 ml/kg in the preceding 12 weeks. The overall response rate was 55.9%. There was no statistically significant difference in the response rates in 2 groups (63% in low-dose vs 48% in standard-dose) (p:0.135). Good, moderate, and minimal responses were seen in 19.3%, 36.6 %, and 44.1% of the participants respectively. Response rate was not affected by age, sex, transfusion requirement or serum ferritin at baseline. The commonest adverse events were somnolence (n=40), constipation (n=29), weight gain (n=25), reversible cytopenia's (n=22), and peripheral neuropathy (n=14). 3.7% participants experienced Grade 2/3 events. There were no grade 4 events.

Conclusions:
The low-dose thalidomide was as efficacious as the standard dose in reducing transfusion requirements. Thalidomide is well tolerated and can be considered as an adjunct to optimal transfusion-chelation regimen under close monitoring in a resource constrained setting.

Disclosures No relevant conflicts of interest to declare.

OffLabel Disclosure: Thalidomide To reduce transfusion requirement in patients with transfusion dependent thalassemia

https://doi.org/10.1182/blood-2023-190608