Eltrombopag Use in Children with Persistent and Chronic Primary Immune Thrombocytopenia in a Portuguese Pediatric Center

Uso de Eltrombopag em Crianças com Trombocitopenia Imune Primária Persistente e Crónica num Hospital Pediátrico Português

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Palavras-chave: Criança; Púrpura Trombocitopénica Idiopática/tratamento farmacológico; Receptores de Trombopoetina; Trombocitopenia/tratamento farmacológico

Chronic immune thrombocytopenia (ITP) is often associated with limited activity and fear of bleeding which affect the patient's quality of life.[1] Eltrombopag is the only oral thrombopoietin receptor agonist approved by the Food and Drug Administration (FDA) and the European Medicines Agency (EMA) for use in pediatric patients older than one year with chronic ITP refractory to other treatments.[2]

We conducted a single-center retrospective study between January 2018 and December 2022, with the aim of evaluating the efficacy of eltrombopag in patients with persistent and chronic ITP. Due to the retrospective nature of the study and the confidentiality of patient data, informed consent was not obtained, and the study was not submitted to an ethics committee.

The response criteria were defined as complete response (CR) if the platelet count was > 50 × 10^9/L for more than six weeks without rescue therapy and partial response (PR), if the response lasted less than six weeks or required rescue therapy. Remission was defined as a platelet count > 100 × 10^9/L for more than six weeks without the need for rescue therapy.

Baseline demographic and clinical data are shown in Table 1.

A total of 13 patients with ITP were included, with a median baseline platelet count prior to initiation of eltrombopag of 10 × 10^9/L (IQR 6.5 x 10^9/L – 25 x 10^9/L). During treatment, most patients (11; 84.6%) achieved a platelet count higher than 50 × 10^9/L, with ten (76.9%) of them reaching this milestone between weeks two and six of treatment. Six patients (66.7%) achieved CR, including one (16.7%) in remission after 73 months of therapy. Three patients (23.1%), had a partial response to eltrombopag and four patients (30.8%) had no response as they never achieved a platelet count of 50 × 10^9/L. Rescue therapy was required during eltrombopag treatment in four patients (30.8%) – Table 2.

Concomitant treatment with corticosteroids/immunoglobulin were discontinued in three patients (42.9%).

Table 1 – Demographic and baseline clinical data of the 13 patients

Demographics (n = 13)	
Gender, n (%)	
Female	7 (53.8)
Male	6 (46.2)
Age at diagnosis, years, mean (SD)	7.4 (5.5)
Age at the start eltrombopag, years, mean (SD)	11.9 (4.7)
Second-line therapies prior to eltrombopag, n (%)	
Mycophenolate mofetil + Azathioprine	1 (7.7)
Mycophenolate mofetil + Rituximab	1 (7.7)
Splenectomy	-
Clinical characteristics, n (%)	
Epistaxis	4 (30.7)
Cutaneous (petechiae, ecchymosis)	12 (92.3)
Gingivorrhagia	3 (23.1)
Metrorrhagia	1 (7.7)
Laboratory features, median (IQR range)	
Baseline platelet count, x 10^9/L	10 (6.5 - 25)
ITP phase, n (%)	
Chronic	11 (84.6)
Persistent	2 (15.4)
Concomitant ITP medication use, n (%)	8 (61.5)
Low-dose corticosteroids	6 (75)
Azathioprine + low-dose corticosteroids	1 (7.7)
Immunoglobulin course	1 (7.7)

IQR: interquartil range; ITP: immune thrombocytopenia; SD: standard deviation

Table 2 – Treatment response and rescue therapy

Treatment response, n (%)	
Complete	6 (46.1%)
- in remission	1 (16.7%)
Partial	3 (23.1%)
Non-response	4 (30.8%)
Rescue therapy, n (%)	4 (30.8%)
iv. Immunoglobulin alone	2 (50%)
iv. immunoglobulin + corticosteroids	2 (50%)

One patient discontinued eltrombopag due to cholestatic hepatitis associated with bacteremia, which resolved after discontinuation of eltrombopag.

The current study is, to the best of our knowledge, the first Portuguese pediatric study on the use of eltrombopag in children under real-life conditions. The study demonstrated efficacy, tolerability, and safety as a treatment for persistent and chronic immune thrombocytopenia in children. More than 80% of patients had at least one platelet count > 50 x 10^9/L, and nearly 70% had a partial response, which is consistent with other published studies.[3-5]

Notably, a significant proportion of patients experienced a reduction in the use of concomitant therapies and an improvement in quality of life, which decreases the side effects of long-term corticosteroid use and the risks associated with intravenous therapy. Based on these findings, we recommend that eltrombopag be considered as a first-line therapy for pediatric patients with chronic ITP and persistent clinical manifestations, with corticosteroids or immunoglobulin being reserved for occasional hemorrhagic episodes.

AUTHOR CONTRIBUTIONS

CL: Data collection and interpretation, literature search, writing and critical review of the manuscript.

AC: Data collection and interpretation, critical review of the manuscript.

RM, SB: Critical review of the manuscript.

PK: Study design, critical review of the manuscript.

All authors approved the final version to be published

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in 2013.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

COMPETING INTERESTS

The authors have declared that no competing interests exist.

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