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LOW DOSE INTRAVENOUS IMMUNOGLOBULIN FOR ACUTE IMMUNE THROMBOCYTOPENIC PURPURA IN CHILDREN

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INTRODUCTION

Immune thrombocytopenia (ITP) is a common disease in the pediatric age group. Acute ITP is diagnosed in children who present with a bleeding disorder with isolated thrombocytopenia in the absence of other causes.[1] It is a self-limiting autoimmune disorder against platelets leading to its destruction in the spleen.[2] Regardless of its self-limiting nature, platelet counts often are very low with the possibility of spontaneous bleeding making the treatment imperative. Most experts agree that the intervention is indicated if platelet count is less than 20,000/micl.[1] immunoglobulin is considered the most effective treatment in the management of acute. IVIG at 2 grams per kg body weight was shown to be more effective to high dose prednisolone and to no intervention.[2,3] ITP has a lot of possible adverse reactions as well as financial burdens. The purpose of this retrospective analysis is to find out the effectiveness of low dose IVIG in the context of acute ITP management.

METHODS

All patients who presented with acute ITP between 3 months and 14 years with sever ITP (platelet <20,000/micl) and not previously treated were included in study. All patients' parents consented before our management and were admitted to the pediatric ward at Prince Rashid ben Alhassan Hospital in the north of Jordan. IVIG at 1 gram per kilogram over six hours was the standard of treatment. Automated CBC before and daily after the beginning of treatment until the platelet count is over 50,000/micl from the patient's records was evaluated. Our analysis included review of patients' follow up records in the pediatric clinic for four weeks.

RESULTS

In the period from the 1st of March 2020 to the 1st of March 2021 only 34 patients (14 males and 20 females) met the inclusion criteria, and 4 patients were excluded due to prednisolone treatment.

The median age was 3 years and the median platelet count before treatment was 5,000/micl. At 24 hours follow up mark after the infusion of IVIG, the platelet count rose above 20,000/micl in the majority of cases (70%, 24 cases). The median time needed to raise the count above 50,000micl was 48 hours. Most of the cases needed four days to rise above 50,000micl (0.59%, 20 cases). We found that all our patients improved on IVIG at 1 gram per kilogram dose and none of them needed a second dose.

In the four-week clinic visit records the median platelet count in the second week was 157,000/micl. Most of the patient's platelet counts started to fall in the second and third week (9 patients, 26%, and 14 patients, 41%) whereas 11, 32% patients continued to have rising counts.

DISCUSSION

Childhood ITP usually is self-limiting. Intervention is only indicated when there is an evidence of bleeding tendency such as purpura[1] or there is sever ITP (platelet count less than 20,000/micl) to minimize the incidence of intracranial hemorrhage.[4,5] Oral prednisolone is the drug of choice for ITP in patients who are in need for treatment, yet its adverse effects ((excessive weight gain (up to 6% of original body weight), epigastric discomfort, behavioral change, transient glycosuria, hypertension, and transient suppression of the immune system) makes it a none likeable choice for the clinicians. Since 1981, IVIG has been used in the management of ITP.[7] Waiting for the autoimmune response to subside spontaneously, the use of IVIG is temporary. It was shown that IVIG is superior to oral prednisolone in many studies.[2,3] The patient with ITP can be safely followed up at home when the platelet count is above 50,000/micl.[1]

Most of the pediatric age group trials, a dose of 2 grams per kilogram over 48 hours[6,3], or 5 days.[7,2] In our retrospective study, patient records showed that all of them were treated with 1 gram per kilogram IVIG. The results above show that the low dose IVIG can raise the platelet counts to a safe level in the majority of cases. The median time needed to recover a safe platelet count in similar studies at a 2 gram per kilogram IVIG is

comparable to the median time needed in our study which is 2 days.[3] In Bussel et al. study the result were very similar who showed that on fourth of their patients didn't respond to 1 gram per kilogram IVIG.[8]

Platelet counts remained above 50,000/micl after 3-4 weeks in most of the studies.

CONCLUSION

We concluded that our study suggests that when IVIG is considered as the initial therapy for pediatric acute ITP, a starting dose of 1 gram per kilogram may be used as an effective modality of treatment in most cases.

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