

CLINICAL FEATURES AND TREATMENT RESPONSE OF IMMUNE THROMBOCYTOPENIC PURPURA IN INFANTS

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Abstract- Pediatric immune thrombocytopenic purpura (ITP) typically manifests as isolated thrombocytopenia and mucocutaneous bleeding. We performed this study to determine the clinical features and treatment outcomes of infant with ITP. Retrospective analysis of 96 infant ITP patients treated from 1995 to 2005. The data abstracted comprised age, gender, clinical features, and treatment outcomes. The 56 male and 40 female infants had a median age of 3 months. Eighty presented with purpura, sixteen with active mucosal bleeding. The median platelet count was 13000 / μ l. Seventy-seven infants received intravenous immunoglobulin (IVIG), eighteen steroids and one patient was observed. Ninety-six (96%) responds to a single course of treatment. Infant with ITP respond favorably to treatment.

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INTRODUCTION

Platelets are an important component in the first phase of hemostasis –platelet plug formation (1). Pediatric immune thrombocytopenic purpura (ITP) typically manifests as isolated thrombocytopenia and mucocutaneous bleeding. It is usually preceded by and antigenic challenge (viral illness, immunization), and by the time of ITP diagnosis most children have recovered from their viral symptoms. Although most common between 2 and 5 years of age, ITP occurs in all pediatric age groups (2). Nevertheless, there is a dearth of information on infant ITP.

To raise awareness of infant ITP, we describe the clinical features, laboratory data, and treatment outcomes of 96 infants so affected.

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MATERIALS AND METHODS

We retrospectively reviewed the chart of 202 consecutive pediatric patient's diagnosed and treated for ITP at Tehran Medical Center of Children from 1995 to 2005.

Ninety-Six infants (24 month of age or younger) were identified. The data abstracted included age, gender, immunization history, presenting clinical features and laboratory values, treatment outcomes. Bone marrow aspirates were performed at the discretion of the treating physician.

ITP was diagnosed based on the clinical findings of purpura and isolated thrombocytopenia without a family history of thrombocytopenia. Active mucosal bleeding was defined as epistaxis, gingival bleeding, gross hematuria, or gastrointestinal bleeding. Response to treatment was defined as a rise in the platelet count by 20000/ μ l or greater.

Data were analyzed by using SPSS and chi square test (3).

Table 1. Age distribution of 96 infants with ITP

Age range (month)	n(%)
2-6	61(63.5)
7-12	17(17.7)
13-18	8(8.3)
19-24	10(10.5)

RESULTS

Ninety-six infants (47.5%) were identified in this retrospective review. There were 56 male and 40 female with a median age of 3 months (0-24 months). The most common age range was less than six month (61 patients) and the mode age was 2 month (25 patients) (Table 1).

The most common presenting symptom was purpura, manifesting as a petechial rash and/ or ecchymoses (80 patients). Of these 96 infants, 16 (16.6%) presented with active mucosal bleeding compared to 42 (36.6%). In older ITP patients from our series 46 (48%) had history of upper respiratory infections 2 to 4 weeks prior to presentation. Nine (9.3%) infants had received vaccinations in the preceding 6 weeks. The median white cell count was 9150 (3600-28700) and the median platelet count was 13000 (1000-66000).

A total of 38 infants underwent bone marrow aspiration for the following reason: ill appearing with fever or prior to steroid therapy.

Treatment and outcomes

Eighty-six (96%) of 89 treated infant responded to a single course of treatment. One infant observed without treatment was hospitalized and discharged following morning. Six infants did not follow well and excluded from our study. A total of 74 infant received IVIG 1 gr/kg/day for 2 days. 15 infant received prednisolone of 2 mg/kg/day (Table 2). Table 3 shows comparison of treatment in infant and older children in our study.

Table 2. Treatment of ITP in 96 infants

Treatment	n	Positive response	no response	No follow up
IVIG	77	72	1	4
Corton	18	13	2	3
Observed	1			

Table 3. Comparison of treatment response between infants and older children

	Infants	Older children
IVIG	98%	65.3%
Prednisolon	86%	81%

DISCUSSION

This retrospective study of 96 infants with ITP points out some salient features. The severity of ITP (as measured by active mucosal bleeding) in infant is less than older children (16% versus 36%) and infant respond favorably to treatment. (chi square test, $P < 0.05$). A male predominance was observed in our study as observed on the study of claudio Sandoval *et al.* and Kühne *et al.* (4, 5). The incidence of active mucosal bleeding in infants was 16.6% which is less than 36.6% incidence in older children treated at our hospital. There was 2 case of gastrointestinal bleeding and one case of hematuria, one case had prolonged bleeding after circumcision, no case of intracranial hemorrhage. However it is possible that because of the retrospective nature of this study missing or incomplete data we may have underestimated the incidence of active mucosal bleeding – indeed, the incidence of major hemorrhage (6) and active mucosal bleeding (7) was reported as 17 and 27%, retrospectively, in series of infants and older children. The majority of infants in our study responded to a single course of treatment (96.6%).

Since features of infant ITP are similar to those of older children, infants should not be excluded from treatment strategies developed for older children with ITP. Vaccination may play an important role in the etiology of ITP in infants. MMR vaccination is causally linked with the development of ITP. According to an epidemiologic study by Miller *et al.* the relative incidence of an admission for ITP in the 6-week post-immunization risk period compared to the control period was significant (8).

Clinical features and treatment ...

In our study 9.3% of infants had received recent vaccines. The American committee of immunization practices does not absolutely contraindicate a second dose of MMR in children who develop ITP after the first dose (9). In conclusion, infants with ITP respond favorably to treatment and have severity of disease less than older patients with ITP. Thus the principles of management of ITP in infants should not differ from that of older children.

Conflict of interests

The authors declare that they have no competing interests.

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