

Self-Reported Initial Management of Childhood Idiopathic Thrombocytopenic Purpura: Results of a Survey of Members of the American Society of Pediatric Hematology/Oncology, 2001

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Abstract: The purpose of this study was to update physicians' self-reported initial management practices for childhood idiopathic thrombocytopenic purpura (ITP) from an initial survey in 1997. A questionnaire was sent by e-mail in October 2001 to 753 members of the American Society of Pediatric Hematology/Oncology (ASPH/O). The questionnaire had 14 questions, based on the clinical presentation of a 5-year-old boy with ITP, a platelet count of 7,000/μL, scattered petechiae, and no mucous membrane bleeding.

Two hundred eighteen (29%) surveys were returned. In response to questions regarding initial treatment, 33% of physicians said they would always administer drug therapy, 38% usually, 15% sometimes, and 14% rarely/never. When asked which agent would be used if drug treatment were prescribed, 45% reported anti-D, 33% IVIG, 20% prednisone, and 2% other regimens. Only 34% of physicians would always or usually hospitalize such a patient. Hospitalization was more likely if a physician responded that he or she would always or usually use drug therapy. Physicians who saw more ITP patients were more likely to self-report sometimes or rarely/never prescribing drug therapy. Self-reported initial management of ITP by ASPH/O members in 2001 is similar to 1997 regarding the percentage of pediatric hematologists who would not use drug therapy. Among physicians who would use drug treatment, there was an increased use of anti-D and decreased use of IVIG and prednisone. This information provides the basis for designing a randomized clinical trial to compare the effect of different management strategies on the outcomes of bleeding symptoms, side effects of therapy, costs, and quality of life.

Key Words: Anti-D—Idiopathic thrombocytopenic purpura—Intravenous gamma globulin—Pediatric hematology/oncology—Purpura—Questionnaire—Thrombocytopenia.

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The appropriate initial management of children with idiopathic thrombocytopenic purpura (ITP) remains controversial among experienced pediatric hematologists (1–3). An audit of practice in the United Kingdom in 2000 indicated that 63% of pediatric hematologists would manage children without drug therapy (4), consistent with recommendations of the British Society of Hematology (5,6) and with a recently reported case series from Germany (7). However, in the United States, a 1997 survey of the members of the American Society for Pediatric Hematology/Oncology (ASPH/O) documented that only 9% to 16% of physicians would not intervene with drug therapy in a child with ITP and minor purpura (8). This response is consistent with the opinion expressed in the 1996 ITP Practice Guideline of the American Society of Hematology (9).

The 1997 ASPH/O survey (8) was conducted at the time when a national shortage of IVIG was occurring and soon after anti-D was approved by the FDA for initial treatment of children with ITP. To reassess self-reported initial management practices for children with ITP, a new survey was distributed to ASPH/O members in October 2001.

PATIENTS AND METHODS

A 14-question, four-page survey was sent on October 22, 2001, to all ASPH/O members, including associate and international members, with listed e-mail addresses. A reminder e-mail message was sent on November 1. Members were asked to complete the survey and return it by fax or regular mail.

The survey instrument presented a single case scenario of a 5-year-old boy who presented with bruising and petechiae. He also had a small nosebleed lasting 5 minutes 24 hours previously. He has otherwise been well. The physical examination is normal except for scattered crops of petechiae and small bruises. There is no organomegaly or evidence of current mucous membrane hemorrhage. The hemoglobin is 12.0 g/dL, WBC 6000/μL with a normal differential, and platelet count 7000/μL. All data are consistent with the diagnosis of ITP.

Follow-up questions asked for practices regarding initial treatment, doses of initial medications, hospitalization, and bone marrow aspiration. Additional questions were based

on variations of the case scenario: if the child were 18 months of age rather than 5 years old, if the 5-year-old patient had a platelet count of 3000/μL rather than 7000/μL, and if the 5-year-old patient had resolution of cutaneous bleeding and no evidence of mucosal hemorrhage but continued thrombocytopenia (platelet count 12,000/μL) 2 weeks following presentation. Finally, respondents were asked how many new patients with ITP were seen in their institution each year, and whether they had responded to the 1997 ASPH/O survey.

The survey results were entered into Microsoft Access software and analyzed with SAS software. The chi-square test, Fisher exact test, and Bowker test of symmetry were used to assess significance.

RESULTS

Within 7 weeks 218 of the 753 (29%) surveys were returned. Fifty-one percent of respondents reported that they had also responded to the November 1997 survey; 21% had not responded to the previous survey, and the remainder reported that they were uncertain.

When asked how many new patients with ITP are seen in their institution each year, 135 of 216 (63%) reported that 10 to 30 new patients were seen; 53 (25%) reported that more than 30 patients were seen; 28 (13%) reported that fewer than 10 patients presented each year.

The decision about whether to administer drug treatment is described in Table 1. Seventy-one percent of respondents would always or usually administer some type of drug therapy. The choice of drug therapy is described in Table 2: anti-D was the most frequent choice, followed by IVIG, then prednisone. The choice to use prednisone as initial therapy was greater among physicians who reported that they only sometimes or rarely/never used initial drug treatment ($P = 0.046$). Table 3 describes the decision for drug treatment according to the number of new patients with ITP seen each year. Physicians who saw more ITP patients were more likely to prescribe drug therapy only sometimes, rarely, or never ($P = 0.032$).

Additional questions asked physicians what regimens they would use if they gave prednisone, IVIG, or anti-D to the patient described in the case scenario. For prednisone, most physicians selected a dose of 2 mg/kg per day (74%). Other doses (1 mg/kg per day, 4 mg/kg per day, or another regimen) were selected by 5% to 16% of physicians. When physicians were asked how long they would treat the patient with prednisone at the full dose before tapering or discontinuing, the most frequent choice was 14 days (40%); 25% of physicians selected 7 days, 14% selected 4 days, and 21% reported that they would continue the full dose of prednisone until the platelet count was above 20,000 or 50,000/μL.

TABLE 2. *Self-reported choice of initial treatment modality for a 5-year-old child with idiopathic thrombocytopenic purpura and only minor purpura*

	Prednisone	IVIG	Anti-D
All physicians (%)	21	34	46
Physicians according to their use of any drug therapy*			
Always or usually (%)	16	37	47
Sometimes or rarely/never (%)	31	26	43

Four respondents (2%) reported administering other drug therapy and were excluded from these analyses.
*$P = 0.046$.

When physicians were asked what regimen of IVIG would be used if they chose this treatment, most physicians chose 1.0 g/kg, repeated the next day if the platelet count was still less than 20,000 to 30,000/μL (32%), or simply 1.0 g/kg as a single dose (32%). Twenty-one percent of physicians reported that they would use 1.0 g/kg daily for 2 days.

When physicians were asked for the regimen they would use for anti-D if this were selected as treatment of this patient, 66% reported that they would use 50 μg/kg as a single dose; 29% reported that they would use 75 μg/kg as a single dose.

When physicians were asked to select their choice of initial treatment if the patient in the case scenario were 18 months of age rather than 5 years old, 38% of physicians reported that they would use IVIG, 34% reported that they would use anti-D, 14% reported that they would use prednisone, and 12% reported that they would order no drug therapy. If the 5-year-old patient in the case scenario had a platelet count of 3000/μL at presentation, the decision regarding no drug therapy (16%) was similar to the 14% who reported rarely/never administering drug treatment. The choice of prednisone, IVIG, or anti-D was also comparable.

If the 5-year-old patient described in the case scenario showed resolution of cutaneous bleeding and no evidence of

TABLE 1. *Self-reported initial treatment and hospitalization of a 5-year-old child with idiopathic thrombocytopenic purpura and only minor purpura*

	Always	Usually	Sometimes	Rarely/never
Treatment (%)*	33	38	15	14
Hospitalization (%)	9	25	25	41
Bone marrow aspiration if†				
Steriods prescribed (%)	41	19	12	29
Steroids not prescribed (%)	0	2	15	82

*Treatment with some type of drug therapy (corticosteroids, IVIG, or anti-D).
†$P < 0.0001$.

TABLE 3. *Self-reported decision for initial treatment according to the number of new patients with idiopathic thrombocytopenic purpura seen each year*

	Treatment with prednisone, IVIG, or anti-D*	
Number of new patients/year	Always or usually, %	Sometimes or rarely/never, %
<10	75	25
10–30	76	24
>30	57	43

*$P = 0.032$.

mucosal hemorrhage but continued to be thrombocytopenic (platelet count 12,000/μL) 2 weeks following presentation, 50% of physicians reported that they would use no further drug therapy, 36% of physicians would switch to an alternative drug, and 13% would repeat or continue the same treatment given at diagnosis at the same or increased dose.

Physicians were asked whether they would perform a bone marrow aspirate on the patient described in the case summary if steroids were prescribed. The results are described in Table 1. Most physicians would undertake aspiration if steroids were to be prescribed, but very few physicians would perform a marrow aspirate if steroids were not prescribed. The difference in the performance of a bone marrow aspiration according to treatment with steroids was significant ($P < 0.001$).

Table 4 describes the self-reported decision regarding hospitalization. Most physicians (66%) would sometimes or rarely/never hospitalize the 5-year-old boy described in the case scenario. Hospitalization was more likely if the physician responded that he or she would always or usually use drug therapy ($P < 0.0001$). Hospitalization was more frequently reported by physicians who used IVIG as initial treatment. This likely resulted in part from the need to give IVIG as a prolonged infusion.

DISCUSSION

Although the 29% response rate to this survey is substantially less than the 57% response rate for the 1997 survey (8), it demonstrates the feasibility of a rapid, efficient survey technique using e-mail correspondence. This survey was more concise than the initial survey, with the aim of determining changes in clinical practice as a result of a national shortage of IVIG and with the introduction of anti-D as a common treatment modality. In contrast to the 1997 survey (8), just one case scenario was used, describing a child with only cutaneous purpura; no questions were asked regarding patients with ongoing mucous membrane bleeding and anemia (so-called wet purpura).

TABLE 4. *Self-reported decision for hospitalization according to the decision for initial treatment*

	Hospitalization	
	Always or usually	Sometimes or rarely/never
All physicians (%)	34	66
Physicians who self-reported initial treatment with prednisone, IVIG, or anti-D		
Always or usually (%)*	46	54
Sometimes or rarely/never (%)	6	94
Physicians who reported initial treatment with		
Prednisone (%)	14	86
IVIG (%)†	57	43
Anti-D (%)	27	73

*$P < 0.0001$.
†$P < 0.0001$.

Comparing the 5-year-old child with only cutaneous purpura in 1997 with the similar scenario from 2001, the percentage of physicians reporting that they would use no drug therapy was similar in both surveys: 16% self-reported no drug treatment in 1997 (8) and 14% self-reported that they would rarely/never administer drug treatment in 2001.

A marked difference between the 1997 and 2001 surveys was the increased use of anti-D: 46% in the current survey compared with 10% in the previous survey (8). IVIG use declined from 45% in 1997 to 34% in the current survey. The use of prednisone was similar in both surveys: 22% in 2001 compared with 19% in 1997. The percent of respondents recommending hospitalization was similar in both surveys: 66% of physicians reported that they sometimes or rarely/never recommended hospitalization in 2001 compared with 60% for the similar case scenario in 1997 (8). The responses to questions regarding performance of bone marrow aspiration were also similar, although fewer respondents (41%) reported in 2001 that they would always perform a bone marrow aspirate if steroids were prescribed, compared with 57% in 1997.

The two ASPH/O surveys document consistent treatment decisions, although the most frequently self-reported treatment modality has shifted from IVIG to anti-D. The preference for drug treatment by the majority of ASPH/O members is consistent with the opinion expressed in the ITP Practice Guideline developed by the American Society of Hematology (9).

In the 2001 survey, only 29% of responding physicians self-reported that they would not usually or always use prednisone, IVIG, or anti-D in the patient described in the case scenario. These findings contrast with the data from the recent follow-up audit of United Kingdom pediatric hematologists (4), a majority of whom reported that they would manage a child who had only cutaneous purpura without specific drug treatment.

This study has several limitations. First, the response rate was rather low. However, compared with the 1997 survey, we believe that the responses were more likely submitted by individuals particularly interested and engaged in childhood ITP. Second, we did not request that responses be limited to one per institution. Therefore, it is possible that if all ASPH/O members from certain large institutions adhered to a common management philosophy and responded to the survey, the results could be biased. However, the largest of the pediatric hematology programs includes no more than

10 ASPH/O members. Even if all responded similarly, the impact on the overall results would be minimal. Finally, the responses reflect what the physician states he or she would do in managing a theoretical case, not what the physician actually did when encountering an actual patient (as in the recent U.K. audit (4)).

Differences in treatment practice support the need for a randomized clinical trial comparing different management strategies. Although data from case series suggest that the risk for major bleeding or death from bleeding is minimal even in the absence of drug treatment, the opinion persists that drug treatment may be the safer management strategy since severe thrombocytopenia can be corrected more rapidly (10). It would be interesting to compare the outcome of standard management as most often used in the United States (IVIG or anti-D) with initial management using minimal drug treatment (observation alone or a short course of prednisone), as in the United Kingdom. Such a clinical trial should include not only platelet count response but also the occurrence of clinically important bleeding following initiation of treatment, side effects of treatment, health-related quality of life using instruments validated in pediatric patients, and a cost analysis. In the 1997 ASPH/O series, 79% of respondents indicated their interest in participating in such a randomized clinical trial (8).

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