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POSTER ABSTRACTS

401.BLOOD TRANSFUSION

Post-Transfusion Purpura: A Literature Review

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Introduction: Post-transfusion purpura (PTP) is a rare and occasionally life-threatening transfusion reaction characterized by severe thrombocytopenia usually within two weeks of blood transfusion. It is associated with the development of alloantibodies to human platelet antigens (HPAs). Due to its rarity, our knowledge of PTP is mostly based on reported cases or small cohorts.
Methods:
This is a systematic literature review of English language articles published in 2 large medical databases (Embase and Pubmed) using the search terms "post-transfusion purpura", "posttransfusion purpura", and "post transfusion purpura" between the years 1985 and 2023. Only articles reporting on patients older than 18 years were included. 684 articles were identified, 590 of them were excluded since they represented a combination of case reports of other conditions, laboratory, and epidemiological reports. The 94 articles left, represented case reports and case series of PTP encompassing 149 patients. 21 patients were removed since they represented duplicate cases. 17 patients were excluded due to missing information. 11 patients were excluded due to the presence of confounding clinical conditions.
Results:
A total of 100 cases were included in the study. The mean age was 56.7 years. 85% were female, 14% were male, and 1 was missing gender data. 62% of cases reported a baseline platelet count, ranging between 78,000 - 600,000 cells/μL.
65% of cases presented after a procedure- or surgery-related transfusion, of these 22 were related to cardiovascular procedures, while 16, 10, and 9 cases were related to gynecological, abdominal, and orthopedic surgeries respectively. A history of prior transfusions was only documented in 24% of cases. A prior pregnancy was reported in 63% of the cases. Red blood cell, fresh frozen plasma, and platelet transfusions were associated to 64%, 11%, and 9% of cases, respectively. The most common HPA antibody detected was HPA-1a (81%). HPA-1b, HPA-5b, and HPA-3a were the next most common antibodies, identified in 7%, 5%, and 5% cases, respectively.
The median time from the first transfusion to the development of thrombocytopenia was 8 days, reaching a platelet nadir in 9 days. The platelet nadir ranged between 0 - 50,000 cells/ μL. Clinical presentation included post-transfusion fever (15%), petechial rash, epistaxis, and oral bleeding (65%, 17%, and 12, respectively), and bleeding from the genitourinary system, gastrointestinal tract, surgical incisions, lower respiratory tract, and central nervous system (38%, 28%, 6%, 6%, and 2% of cases, respectively). Death was reported in 9% of cases.
The median time from PTP diagnosis to initiation of first treatment was 1 day. 83% of cases achieved an adequate response, defined as a platelet count > 100,000 cells/μL, after a mean/median time of 14.2/11.5 days (available in 68% of cases). Corticosteroids, intravenous immunoglobulin, and plasmapheresis were administered in 68%, 63%, and 27%, of cases, respectively. 6 patients received HPA 1a negative platelet transfusions.
Conclusions: The majority of reported PTP cases were females with a history of pregnancy or blood transfusions consistent with existing literature. Over 60% of cases were linked to a surgical procedure, with cardiovascular cases constituting the largest portion. Anti-HPA-1a represented the most commonly detected antibody, followed by HPA-1b, HPA-5b, and HPA-3a. The most common sites of bleeding were the gastrointestinal and genitourinary tracts. 9% died from PTP. The majority of patients (83%) achieved an adequate response, with the most common treatment modalities being corticosteroids, IV immunoglobulins, and plasmapheresis.

Disclosures No relevant conflicts of interest to declare.

Table 1. Clinical characteristics

Clinical characteristics		Percentage of patients (N = 100)
Surgical indications for transfusion	Cardiovascular	22%
	Gynecological	16%
	Intra-abdominal	10%
	Orthopedic	9%
Medical indications for transfusion	Gastrointestinal	13%
	Hematological	5%
	Renal	4%
	Others	13%
HPA antibody	HPA-1a	81%
	HPA-1b	7%
	HPA-5b	5%
	HPA-3a	5%
Clinical presentation	Post-transfusion fever	15%
	Petechial rash	65%
	Epistaxis	17%
	Oral bleeding	12%
	GU bleeding	38%
	GI bleeding	28%
	Respiratory tract bleeding	6%
	Surgical incision bleeding	6%
	SNC bleeding	6%
	Death	9%

* HPA: Human platelet antigen

Figure 1

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