ACUTE PAIN TRANSFUSION REACTION (APTR) IN PATIENTS WITH THALASSAEMIA AND ONCOLOGICAL DISEASE

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Background/ Introduction

Acute pain transfusion reaction (APTR) is a rare reaction reported either as unclassified or “other” in haemovigilance. Its main characteristic is acute pain in the joints during or soon after transfusion of blood components, ceasing when transfusion is discontinued. Hypotension, low pulse rate and discomfort may accompany APTR. Given the limited literature on APTR and the complex pathophysiology of thalassaemia syndromes and some malignancies, APTR may be misinterpreted as residual clinical manifestations of the main disease. We examine here other haematological and quality parameters of processing and storage of transfused blood components as well as transfusion practices in thalassaemia, sickle cell disease and oncology.

Methods

We report seven APTR cases. None of the patients had history of serious adverse reactions, allergies or alloimmunisation.

Information regarding the patients' medical history as well as the characteristics of the transfused components are depicted in the following table.

CASE NUMBER	PATIENT SEX	AGE	DISEASE	TRANSFUSED COMPONENT	COMPONENT AGE	SYMPTOMS
1	Female	42	β-thalassaemia	complete-phenotype, prestorage leucoreduced, 42 d-RBC units	18 days	acute severe abdominal pain, pain in the lumbar back, discomfort
2	Female	46	β-thalassaemia	complete-phenotype, prestorage leucoreduced, 42 d-RBC units	20 days	acute severe abdominal pain, discomfort, bradycardia, hypotension, stool loss
3	Female	50	β-thalassaemia	complete-phenotype, prestorage leucoreduced, 42 d-RBC units	16 days	acute moderate pain in the neck and the lumbar back
4	Female	63	SCD/β-thalassaemia	complete-phenotype, prestorage leucoreduced, 42 d-RBC units	14 days	acute severe abdominal pain, pain in the lumbar back, discomfort, nausea
5	Female	65	Acute Myeloid Leukaemia	leucoreduced, pooled, whole blood derived platelets	4 days	acute chest pain, redness of the face, hypotension
6	Female	69	Multiple Myeloma	leucoreduced, pooled, whole blood derived platelets	5 days	acute chest pain, redness of the face, hypotension
7	Male	59	Pancreatic Ca	leucoreduced, pooled, whole blood derived platelets	2 days	Acute moderate abdominal pain

Results

- In all cases, transfusion was paused immediately, leading in pain cessation and psychological relief. Analgesic therapy was administered as well as hydration, corticosteroids and anti-histamines. One patient (case 2) stayed in the hospital for 24 hours for precautionary reasons. All incidents were followed by full recovery
- Clinical, immunological and microbiological investigations were negative for all common causes of classified adverse reactions in all seven patients
- All patients exhibited high haemoglobin increment following transfusion
- *Extended biological investigation of one case (case 3) indicated the implication of oxidative stress and increased osmotic/ mechanical haemolysis with a sharp increase in phosphatidylserine exposure*
- *RBC units transfused to the thalassaemic patients had median age 17 days, higher than some researchers’ recommendation of 10-12 days old for this group*

Conclusions

Further investigation of the causative factors of this rare transfusion associated adverse reaction and its pathophysiology at cellular and molecular levels is needed. Subclinical inflammation related to transfusion of RBCs and platelets with focus on storage lesion and other hazards should be examined.