Correspondence

Ceftriaxone induced acute multi-organ failure syndrome in a Saudi boy with sickle cell disease

To the Editor

I have 2 comments on the interesting case report by Al-Hawsawi et al[1] on the ceftriaxone induced acute multi-organ failure syndrome in a Saudi boy with sickle cell disease (SCD).

First, thrombotic thrombocytopenic purpura (TTP) is a life-threatening multi-system disorder that represents both diagnostic and management challenge to pediatricians. The studied patient with (SCD) in Al-Hawsawi et al's[1] case report disclosed various clinical and laboratory profiles of acute multi-organ failure. However, the possibility of TTP must not be overlooked while considering the following 3 points: 1. The microangiopathic hemolytic anemia with characteristic blood film involving abnormal red cell morphology of schistocytes, spherocytes, and helmet cells is a critical cornerstone in TPP. Al-Hawsawi et al[1] did not address the blood film morphology in their studied patient. 2. The dramatic response to therapy with plasma exchange, a treatment often effective in TTP, suggests a similarity in pathophysiology of micro-vascular occlusion and multi-organ failure between TTP and SCD.[2] 3. Ceftriaxone usage could be associated with catastrophic immune hemolysis in pediatric patients, particularly those with underlying diseases such as SCD and human immunodeficiency virus (HIV) infection. The prevalence of anti-ceftriaxone antibody is 12.5%.[3] Various serologic techniques could demonstrate immune complex-mediated ceftriaxone-dependent red cell antibodies. These findings were further supported by the results of flow cytometry, in which a change in basal red cell autofluorescence was found in the presence of the antibody and the drug.[4] In addition, Hawsawi et al[1] did not demonstrate any serological test revealing the immune complex-mediated ceftriaxone-dependent red cell antibodies.

Second, ceftriaxone is a potent third generation cephalosporin that is often reserved to treat serious bacterial infections in children. However, its potential unwanted effect of anaphylactic reaction is cumbersome. Extremely few non-immediate manifestations associated with cephalosporin therapy are actually hypersensitivity reactions, whereas most immediate reactions to cephalosporins are immunoglobulin E (IgE)-mediated. Cephalosporin skin testing and sepharose-radioimmunoassay are useful tools for evaluating these reactions. Cephalosporin IgE-mediated hypersensitivity might be a transient condition, therefore, allergologic exams should be repeated in patients with negative initial allergologic work-ups, including challenges.[5,6] This might explain why the studied patient in Al-Hawsawi et al's[1] study developed anaphylaxis after first exposure to ceftriaxone despite skin testing before administration.

Mahmood D. Al-Mendalawi
Department of Pediatrics
Al-Kindy College of Medicine
Baghdad University
Baghdad, Iraq

Reply from the Author

No reply was received from the Author.

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