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Acute transient myopericarditis with left ventricular dysfunction as a rare manifestation of differentiation syndrome (ATRA syndrome) in a case of pediatric acute promyelocytic leukemia

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The outcome of pediatric Acute promyelocytic leukemia (APL) has improved after the introduction of All-trans retinoic acid (ATRA) given with anthracycline-based regimen. Differentiation syndrome (DS) is a severe sometimes life-threatening complication of ATRA occurring during induction therapy. Cardiac manifestations in the form of myopericarditis associated with LV dysfunction have rarely been documented. Here we report a rare case of myopericarditis with LV dysfunction as a result of DS-related to ATRA administration during induction treatment of APL. A 5-year-old male child presented with bleeding diathesis characterized by bruises and bleeding gums. He was evaluated and diagnosed to have an Acute promyelocytic leukemia-high risk, FLT3-ITD mutation positive. As per the AIDA-2000 trial of the GIMEMA group he was initiated on induction with ATRA plus idarubicin. On the fourth day of induction, he developed fever, peripheral edema, hepatomegaly, tachycardia with gallop and dyspnea with a drop in saturation requiring oxygen. A chest X-ray revealed bilateral pulmonary infiltrates and an enlarged cardiac shadow. Electrocardiography showed non-specific ST elevations. Cardiac enzymes were elevated. 2D Echocardiography with Doppler showed global hypokinesia of the left ventricle with an ejection fraction of 40% and features were consistent with myocarditis. ATRA was temporarily withheld. Considering cardiac involvement due to differentiation syndrome, dexamethasone was started. A dramatic relief of symptoms and resolution of radiological signs were observed during the following days. Repeat 2D-ECHO was done which was normal. Pericardial effusion is a common cardiac manifestation of DS but myocarditis had been rarely documented. The differential diagnosis between DS and acute cardiac toxicity induced by anthracyclines might be challenging. In this case disappearance of myocardial dysfunction after treatment with a corticosteroid, confirmed the diagnosis of DS resulting in myopericarditis. In conclusion, a better knowledge of the spectrum of DS can be a useful tool for early decision-making in patients who develop this syndrome.

Biography

Rubiya Nadaf currently doing her fellowship in the branch of Pediatric Hematology Oncology with a special interest in Bone marrow transplant, in India. She worked very hard in order to secure MD with Gold Medal at one the most reputed institutes in India and she was also selected as a young scholar from the entire western part of India and represented west India at a young scholar meet. She works with dedication and honesty which enables her to acquire essential knowledge and skills for safe and expected practice in pediatrics and in the field of Oncology.

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