Cardiovascular Dysfunction and Pulmonary Edema in Children with Scorpion Envenomation: A Report of 5 Patients

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Introduction: Scorpion envenomation is a life-threatening emergency and a common public health problem in children. Severe scorpion envenoming is characterized by cardiocirculatory failure which may lead to pulmonary edema. Children are at greater risk of developing these complications. We aimed to evaluate clinical, laboratory, treatment, and outcome characteristics of children with scorpion envenomation and the need for intensive care unit admission.

Cases: Five patients aged between 4-7 years were admitted for scorpion envenomation. Of the five patients four were stung from feet while one was stung from the head. Three patients had respiratory distress, four had tachycardia and hypotension and three had somnolence. Arterial blood gas examination showed acidosis in one patient. Three had X-ray findings consistent with pulmonary edema. All patients had sinus tachycardia and ST-T changes on ECG. Troponin values were increased in four patients (5-11 (normal range 0.02-0.06 ng/ml)). Echocardiographic evaluation showed evidence of moderate to severe systolic dysfunction and reduced ejection fraction in four patients. Two patients had serious cardiomyopathy (EF:30%). Scorpion venom were given to all patients. Intensive inotropic treatment were given to patients with serious cardiomyopathy. Prazosin, diuretics and oxygen treatment were given to patients with pulmonary edema. The clinical course of all patients was satisfactory and the laboratory, electrocardiographic and echocardiographic changes returned to normal within 6 days (mean: 3.5 days).

Conclusion: Severe scorpion envenoming is characterized by cardiocirculatory failure which may lead to pulmonary oedema. Involvement of the heart has been attributed to the massive release of catecholamines and/or to a direct toxic effect of the venom on cardiac fibres, while pulmonary oedema has been considered to be of cardiogenic or non-cardiogenic origin. Based on the clinical course of our patients we think that patients with scorpion envenomations should be observed in the intensive care unit for the risk of developing serious cardiomyopathy and pulmonary edema.