Role of intravenous immunoglobulin in the treatment of acute myocarditis

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Background: Acute myocarditis is rare disease in infants and childhood, the role of immunosuppressive agents and Intravenous Immunoglobulin in the treatment of this disease was investigated by many researchers. The immunosuppressive agents found to be not effective. The potential benefits of Intravenous Immunoglobulin (IVIG) are promising in the treatment of patients with acute myocarditis and recent onset Dilated Cardiomyopathy (DCM).

The aim of this study: Is to investigate the benefit of IVIG in the patient with acute myocarditis and dilated cardiomyopathy as indicated by the analysis of the improvement in the ventricular contractility.

Patient and method: A nonrandomized controlled clinical trial conducted in the cardiology department at Tripoli Children`s Hospital from 2002-2005. Forty patients (40) were diagnosed with acute myocarditis and Dilated Cardiomyopathy based on clinical features, laboratory data and echocardiograph findings. Left Ventricular Ejection Fraction (LVEF) <55% were the main inclusion criteria. The Age at presentation, sex and the presenting symptoms, of the patient were recorded they were followed up at 3, 6, and 12 months after the treatment.

Results: The median for the age at presentation was 9 months, Male to female ratio is 1:1.5, and congestive heart failure was the common presenting symptom.

Thirteen patients (13) were treated with Intravenous Immunoglobulin (IVIG) (0.4 g/kg/day) for 5 days; all patients were followed to see the changes of left Ventricular Ejection Fraction (LVEF). In this group the LVEF determined by Echocardiogram improved from 0.44+- 0.025 (mean+- S.D) at base line to 0.59+- 0.36 at follow up over the course of one year (P <0.01). LVEF improved 15 EF units in those patients received IVIG compared with the other group who did not receive IVIG where the LVEF changed from 0.36+-0.029 at base line to 0.40+-0.06 at the end of one year follow up(P=0.08) and the LVEF improved just 9 EF units.

Conclusion and Recommendation: IVIG seems to be a promising agent in the treatment of acute myocarditis. The effectiveness of intravenous immunoglobulin therapy in acute myocarditis should be evaluated further in randomised multicenter trials.

Key words: Acute myocarditis, dilated cardiomyopathy, IVIG.

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