1. Assessment of Cardiac And Pulmonary Function In Children with Juvenile Idiopathic Arthritis. Accepted in EULAR (European League Against Rheumatism Conference), Rome, 2010

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Abstract:

Abstract Juvenile idiopathic arthritis (JIA) is the most common rheumatologic disorder of childhood. It is a group of diseases characterized by chronic synovitis and associated with many extra-articular manifestations including cardiac and pulmonary involvement. Cardiac involvement as pericarditis, myocarditis and valvular disease is common in JIA. There are, however, few descriptions concerning systolic and diastolic functions of the left ventricle (LV) and the development of lung disease in children with JIA. The study was carried out to detect the cardiac and pulmonary involvement and to study the systolic and diastolic function of the left ventricle in a group of children with juvenile idiopathic arthritis. Forty-six children with JIA without any cardiac or pulmonary symptoms and 30 age and sex-matched controls were included in the study. M-mode, two-dimensional and pulsed Doppler echocardiography (ECHO) was performed on 36 patients. Tissue Doppler ECHO examination was performed on 24 patients to assess systolic and diastolic functions of left ventricle. Pulmonary function tests: Forced vital capacity (FVC%), the predicted forced expiratory volume in the first second (FEV1%) and FEV1/FVC ratio and peak expiratory flow (PEF), total lung capacity (TLC) and residual volume (RV), carbon monoxide diffusing capacity of the lung (DLCO) and DLCO/alveolar volume (VA) were evaluated in 32 patients. Informed consent was obtained from all children's parents. The study protocol was approved by ethical committee of Faculty of Medicine, Assiut University. In this study, children with JIA had higher systolic and diastolic blood pressures, resting heart rate, left ventricle systolic size and volume (4.35 ± 0.68 vs. 3.92 ± 0.28, P value = 0.02). On Doppler and tissue Doppler analysis, the JIA group had lower peak early filling velocity (E, m/s), higher peak atrial filling velocity (A, m/s) and prolonged diastolic E and A waves deceleration times and isovolumic relaxation time (IRT) compared to control. Regarding pulmonary function tests, children with JIA showed significant decrease in FVC, PEF, Pimax, Pemax and DLCO compared to normal controls. This decrease was not related to age, height or weight of these patients. There was significant inverse correlation between lung function parameters and the rheumatoid factor titer, erythrosettimentation rate, disease duration and the duration of methotrexate use (P

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