# Study of echocardiographic changes and risk factors for cardiac functions in children with chronic renal failure under regular haemodialysis

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Chronic renal failure is a functional diagnosis that is present when sufficient nephrons have been destroyed, so that the glomerular filtration rate (GFR) is depressed with subsequent irreversible progression to end stage renal disease (Alfrey & chan, 1992).- A large number of pathological changes have been described in the heart of uremic patients, such as; hypertension, left ventricular hypertrophy, vascular heart disease (mitral & tricuspid regurge), heart failure, uremic pericarditis, pericardial effusion, uremic endocarditis, Arrhythmia and atherosclerosis.- The most common pathological condition of the heart in chronic renal failure is diastolic dysfunction, usually due to complication of fluid overload.- In this study we aimed to detect the cardiac functional abnormalities present in patients with chronic renal failure using echocardiography.- The study included 20 patients with different degrees of renal impairment. Their age varied between 9 and 18 year. 9 were males and 11 were females. It was carried out in the pediatric department. Benha university Hospital.They are subjected to:- Basic laboratory investigations including CBC, BUN, creatinine, albumin and electrolytes.- Estimation of GFR level.- Evaluation of systolic functions of the heart (EF, FS and LVMI). Only LVMI is significantly higher.- Evaluation of diastolic function of the heart (EWV, AWV and E/A ratio). On the LT side of the heart all parameters show significant lower values while on RT side of the heart only E wave velocity is significantly lower.- Evaluation of MPI which is significantly higher in studied patients.- Low GFR show significant correlation with LVMI, diastolic functions on the LT side of the heart and MPI.- Low Hb level show significant correlation with diastolic function on the LT side of heart.- High BP show significant correlation with LVMI, diastolic functions on the LT side of the heart, and MPI.