SUMMARY

Chronic kidney diseases cause large numbers of pathological changes in the heart such as; hypertension, atherosclerosis, heart failure, left ventricular hypertrophy, arrhythmia, pericarditis and uremia cardiomyopathy.

Diastolic dysfunction, in particular in end stage chronic renal failure, a very frequent finding.

Tissue Doppler imaging (TDI) has been proposed as a tool for the evaluation of diastolic dysfunction.

Preload reduction is the main mechanism that account for acute changes in Doppler diastolic indices observed during hemodialysis.

In this study we aimed to evaluate the effect of hemodialysis – related volume reduction on TDI diastolic velocities in an attempt to investigate their preload dependency.

The study included 22 patients (8males and 14 females), their ages varied between 6 and 17years.

The study performed in the pediatric dialysis unit Banha university hospital.

They are subjected to:

1- Complete medical history and clinical examination with stress on age, weight, height, systolic and diastolic blood pressure, and dialysis duration.

2- Laboratory investigation including HB, Bun and electrolytes.

3- Standard pulsed Doppler and tissue Doppler imaging before and after hemodialysis session to study left ventricular diastolic function.

Our results indicate that preload reduction significantly reduces early diastolic mitral annular velocities. These decreases were of lesser magnitude in lateral aspect of the mitral annulus.

The results of the present study suggest that left ventricular loading conditions may affect TDI diastolic velocities but with lesser magnitudes than standard pulsed Doppler mitral inflow diastolic velocities , so TDI become the most accurate and convenient investigation for assessment of left ventricular diastolic function In children with chronic renal failure pre and post-hemodialysis sessions.