

SUMMARY

The present study was designed to evaluate cardiac changes in the left ventricle of 30 patients with VSD. by MPI (Tei index). They were divided into (group 1) (20 patients with VSD only. and (group 2) 10 patients with VSD. and pulmonary hypertension). (group 3) 10 healthy children were taken as control group.

All patients were subjected to full history taking, full clinical examination, X-ray, Electrocardiogram, Echocardiography.

The children with VSD was investigated by echocardiography by M-Mode to obtain the best estimation of measurements of left ventricle chamber and have proven effective in assessing left ventricular mass. But only records a very small portion of the left ventricle. So the technique is only accurate when measuring left ventricles of symmetrical shape.

In our study the Doppler technique was done to measure myocardial performance index (MPI) or (Tei index).

Myocardial performance index (MPI) is a simple and accurate tool for quantitative assessment of right and left ventricular functions and because of easy application and reproducibility, it could be regarded as an important measurement in a comprehensive hemodynamic study, especially in those with abnormal ventricular geometry.

The myocardial performance index (MPI) is a simple, quantitative, nongeometric index of ventricular function that is readily applicable to the study of LV function as well as the assessment of distorted ventricular morphologies present in congenital heart disease. The Doppler- derived



index independent on the heart rate and is easily reproducible in children and adults because it measures relatively large time intervals.

There was statistical significant difference between the three groups as regarding weight, where G2 was less than G1 and G3. The weight in patients with VSD and pulmonary hypertension were failing to thrive.

There were statistical significant difference between the three groups as regarding length, where G2 was shorter than G1 and G3 as the growth retardation is already present in more than 80% of patients with of VSD and pulmonary hypertension.

The main clinical symptoms and signs namely shortness of breathing, excessive sweating, repeated chest infection, failing to thrive, Presence of thrill and pansystolic murmur. These were increased in G2 more than G1. This was expected as the function of left ventricle in patients of (G2) was more worse than (G1).

The mean Tei index was not affected by the age of patients in G1. The patients of G2 can't be evaluated regarding to age, because of small number of patients, however in this group the Tei index was not affected by age.

The control group (G3) can't be evaluated regarding to age, because of small number of (G3), however the Tei index showed a progressive reduction from birth up to the age of 2 years, then it showed no further changes in children older than 2 years.

There was no statistical significant difference between patients of G1 and G3 regarding to echo measurements.



There was statistical significant difference in patients of G2 when compared with G3 as regard echo measurements.

That there was significant difference between G1 and G2 as regard echo measurements.

There was statistical significant difference among the studied groups, which was more significant in G2 than G1 and G3, there reflect more complications of (G2).

There was negative correlation between Tei index and E.F. in G1. Tei index increase when the systolic function of left ventricle decrease in patients of V.S.D with out pulmonary hypertension, there was significant negative correlation between Tei index, E.F in G2

There was statistical significant difference between G1 and G3, regarding to a, b value.

There was statistical significant difference between patients of G2 when compared with G3 regarding to a, b value.

There was no statistical significant difference between G1 and G2 regarding to a,b value.

There was only significant positive correlation between Tei index when compared with (G1) related to LVEDD.

There was statistical significant difference between the Tei index and echo measurements in patients of G2.