SUMMARY

Before the use of echocardiography in clinical practice, patients with aortic stenosis were often the most difficult to assess non-invasively and cardiac catheterization was almost always required.

Estimation of the peak systolic pressure gradient across the stenotic aortic valve is important to determine line of treatment.

The presence of cardiac catheterization or an echo-doppler may not be avilable in all medical centeres, hence, there is a need for an easy simple non-invasive method for determing the transaortic peak systolic pressure gradient in patients with aortic stenosis.

Our study aims to evaluate the estimation of the left ventricular end-systolic pressure (LVESP) in mmHg through study of the 12-lead E.C.G-QRS amplitude in mm.

In this study, one hundred patients with isolated aortic stenosis were selected with no age or sex predilection. In all cases the transaortic peak systolic pressure gradient was known by cardiac catheterization and echo-doppler.

For each, clinical assessment was done by full history taking, clinical examination, surface electrocardiograph, chest X-ray, and data of cardiac catheterization and echo-doppler were revised.

The correlation between the 12-lead QRS amplitude score in mm and the left ventricular end systolic pressure in mmHg in all patients with no factor of predilection was moderate ($r = 0.4520$ $P < 0.01$). In the selected group of patients (with age above 15 years, and clinicaly severe valvular type of aortic stenosis), the correlation was better ($r = 0.8126$ $P < 0.001$).

Measurement of the total 12-lead QRS amplitude in mm appears to allow a resonable prediction of the left ventricular systolic pressure in mmHg and subtraction of the systemic arterial systolic pressure in mm from it appears to provide a reasonable noninvasive means of estimation of the transaortic systolic pressure gradient among patients with clinical severe valvular type of aortic stenosis and their age above 15 years.

The P.G. estimated by this study is well correlated with the P.G estimated by cardiac catheterization than the P.G. estimated by echo-doppler.

So, a properly conducted examination of the electrocardiogram provides additional information for selecting patients (especially above 15 years), for further assessment.