
Recently time activity curve (TAC) obtained by RNA is fitted to Fourier series. Then indices calculated from TAC or first derivative curve derived from TAC increased its accuracy.

We studied relationships of systolic indexes i.e. ejection fraction (EF), MNSER and MNSA by RNA. MNSER is the quotient normalized by end diastolic volume, which is obtained as stroke volume divided by ejection time. But it is equal to the EF divided by ET. MNSA is calculated by dividing the peak ejection rate (PER) by time to peak ejection.

50 patients with myocardial infarction were studied. Correlation between MNSER and PER showed r=0.93 (t=15.6, p<0.001), so these two are considered to be almost same indexes. EF and MNSA revealed r=0.59 (t=5.06, p<0.001), so considered they are somewhat different indexes in concept. MNSER showed r=0.84 (t=10.7, p<0.001) to EF and r=0.83 (t=10.3, p<0.001) to MNSA, so it is considered to be intermediate between EF and MNSA.


Left ventricular P-V loop was constructed to assess LV performance in response to atrial pacing in 11 patient. Gated blood pool scintigraphy was obtained with 25 mCi of Tc-99m labelled RBC and collected using list mode. Absolute LV volume was measured using gated blood pool study and cardiac output by thermodilution method, and pressure recording was simultaneously done by catheter-tipped micromanometer. Ventricular volume and pressure were digitalized and plotted from synchronized R wave into 32 points through cardiac cycle. P-V loops were shifted to leftward and slightly downward in response to increased heart rate, and then slightly upward at the maximal heart rate (160 ppm) in patients without ischemia change. However, in patients with pacing-induced angina, the loop were shifted to upward and rightward at the onset of ischemia. This study may be useful for evaluating LV performance under various conditions.