SUMMARY

Patients with acute anterior myocardial infarction, frequently have both left ventricular (LV) systolic and diastolic dysfunction, although both isolated systolic and diastolic LV dysfunction can be identified.

P wave dispersion because of its relation to the nonhomogenous and interrupted conduction of sinus impulses both Intra and interatrially is a non-invasive indicator that enables the calculation of Atrial fibrillation (AF) risk on the 12 –lead surface ECG and correlates to LV end diastolic pressure.

In the present study, the relationship between P wave dispersion and left ventricular function was investigated in patients presenting with acute anterior myocardial infarction.

In the present study, there is a trend toward an increase in the mean values of P wave maximum duration (119.63msc vs 112.52msc) and P wave dispersion (61.41 msc vs 56.09msc) in patients with systolic dysfunction compared to patients without LV systolic dysfunction (Table 7 and figure 13).

In addition, the present study shows that the P wave duration and P wave dispersion increase along with the increase in the degree of LV systolic dysfunction severity (Table 8 and figure 14).

Correlation studies in the current study have demonstrated significant positive correlation between LV ejection fraction and P wave dispersion ($r = 0.451$, $p = 0.001$) (Table 18 ,Figure 18).

Similarly, there is a significant positive correlation between systolic function determined by tissue Doppler (Sm) and P wave dispersion (r=0.720, p=0.005) (Table 18) .

In the current study, there is a non significant increase in P wave dispersion in patients with compared to patients without LV diastolic dysfunction (60.3 ± 15.5msc vs. 54.4 ± 16.6 msc, p =0.2) (Table 13, figure 16).

In the present work, the increase in P wave dispersion was unrelated to the stage of left ventricular diastolic dysfunction (Table 14 , Figure 17) .

However in the present study, there is a strong positive correlation of P wave dispersion and different parameters of left ventricular diastolic dysfunction namely: E/A ratio (r = -0.714, p=0.001), E/Em ratio (r = 0.317, p = 0.025) (table 18, figure 20,22).

As the ratio between E and Em has shown to be a reliable index of left ventricular filling pressure **(Kim et al., 2000)**, it can concluded from these results that the increase in left ventricular filling pressure may be reflected on the surface ECG as an increase in P wave dispersion.

Aging process is known to be associated with left atrial and left ventricular myocardial changes involving both structure and function that may be reflected clinically as diastolic dysfunction, increase P-wave dispersion and increased incidence of atrial fibrillation.

In the present study, there is no effect of different drugs used during coronary care unit admission (ACE. Inhibitor, streptokinase and beta-blockers) and P-wave dispersion.

To our knowledge, there are no previous studies in literature study the effects of drugs on P- wave dispersion.