P Wave Dispersion as a Risk of Atrial Fibrillation Development in Patient With Asthma

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Introduction: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia, and it often requires treatment in adults. P-wave dispersion is defined as the difference between the maximum and the minimum P-wave duration recorded from multiple different-surface ECG leads, which are well-known electrophysiologic characteristics in patients with atrial arrhythmias and especially paroxysmal atrial. There have not been many studies investigating the incidence of AF in asthma patients. The aim of this study is to investigate whether AF increases in asthmatic patients using P wave dispersion (PWD) or not.

Methods: In this retrospective study, we collected data from the medical records of patients with asthma who were hospitalized in the Moewardi Hospital from January to December, 2018 and 32 healthy volunteers. The lead ECG was recorded PWD and multivariat analysis test used to perform Data analysis.

Result: Of the 100 asthma patients 62 (62%) had asthma, 20 (20%) had asthma with hypertension, 16 (16%) had asthma with diabetes, and 32 others were in controlled. There were significant differences (p = 0.02) parameters of PWD from the group of patients with asthma, asthma with diabetes, asthma with hypertension and control. The highest PWD is in asthma patients with diabetes (PWD 58.711) followed by asthma with hypertension (PWD 51.577), the asthma group (PWD 42.375) and the control group (PWD 33.398). Haemoglobin, WBC, creatinin and potassium in patient with asthma are difference, but it doesn't indicate its impact on PWD. There were no significant (p>0.05) differences in BMI, heart rate, platelets, urea and sodium between groups.

Conclusion: PWD values increased in the asthma patients with diabetes compared to the controlled group. This result indicate that the risk of developing AF in asthma patients with diabetes is higher than the normal population.