The relation between neutrophil /lymphocyte ratio and atherosclerotic coronary artery disease detected by multislice computed tomography in type two diabetic patients

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Background: Coronary artery disease (CAD) is one of the most common causes of mortality worldwide. Recent evidence has demonstrated an important role of inflammation in atherosclerosis. Neutrophil- to- Lymphocyte ratio (NLR) is an emerging biomarker of inflammation. Objective: The aim of our study is to investigate the relation between NLR and atherosclerotic CAD in type 2 diabetes mellitus (T2DM) patients using multislice computed tomography (MSCT).

Patients and methods: Our study was conducted upon 60 T2DM patients presented to Ain Shams and Misr University hospitals and were referred to do MSCT for assessment of CAD. All segments of the coronary arteries were examined and were divided into 16 segments according to the modified American heart association classification. Patients were divided into groups according to presence of CAD as normal and ischemic heart disease and those with ischemic heart disease were subdivided according to the degree of luminal stenosis as non-obstructive (<50% luminal stenosis) and obstructive (≥50% luminal stenosis) CAD. Other coronary CT angiographic scores were also used as atheroma burden obstructive score (ABOS), segment involvement score (SIS) and segment stenosis score (SSS).

Results: It was found in our study that no statistical significance is present between NLR and presence of CAD. However, male gender, mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC) and red cell width (RDW) were found to be significantly associated with CAD. Also, upon studying the correlation between NLR and severity of CAD there was no statistical significance and only the MCV was associated with severity of CAD.

Conclusion: The present study concluded that there is no significant correlation between the NLR and presence and/or severity of ischemic heart disease in T2DM patients. Other CBC indices were found to be significantly related to ischemic heart disease as MCV, MCH and RDW.

The utility of ventricular premature burden detected by ambulatory ECG monitoring in patients with ischemic cardiomyopathy for risk assessment of lethal ventricular arrhythmias

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Background: The prevalence and complexity of ambulatory ventricular arrhythmias increase dramatically as LV function deteriorates. Approximately two thirds of fatal cardiovascular events in patients with a left ventricular ejection fraction (LVEF) ≤35% are caused by sudden cardiac death (SCD). Aim of the work: the objective of the present study was to evaluate the utility of ventricular premature burden detected by ambulatory electrocardiographic monitoring ( Holter Monitor) in patients with ICM for short term risk assessment of lethal ventricular arrhythmias and SCD.

Materials and Methods: this study included sixty patients with established ICM and impaired LV systolic function (ejection fraction (EF) ≤40 % ) at Ain Shams University hospitals. Thirty who did not receive any cardiac implanted electronic devices (CIEDs) as CRT-P, CRT-D or ICD (single-dual) (group A) and 30 who received cardiac devices group B (18 CRT (groupB1) & 12 ICD (groupB2)).They were followed up for six months, for the risk of sudden death, ventricular tachycardia (VT), syncope, DC shock (hemodynamically unstable VT) & the need for electrophysiological study (EPS) and ablation. 24 hour Holter was done to all patients in our study with special emphasis on Lown’s grading system.

Results: Patients who reached endpoints (EP group) were 7 patients, 1 patient was Lown’s grade IVa and 6 patients were in Lown’s grade IVb, while Patients who completed their 6 months follow up (FP group) were 53 patients, 16 patients were Lown’s grades I, 4 patients were Lown’s grades II, 19 patients were Lown’s grades IVa and 14 patients were Lown’s grades IVb. The sensitivity of the PVCs burden with the endpoints was 100% sensitive and 98.11 % Specific. Univariate analysis was done between patients who reached endpoints and those who completed their 6 months follow up: no statistically significant difference was there between both groups except for total Holter PVCs number with median: 20358 in EP group, 940 in FP group with P = 0.0001, PVCs burden with median: 21% in EP group and 1% in FP group with p = 0.0001, couplets no. with median: 184 in EP group and 15 in FP group with p = 0.0175, VT runs with median: 187 in EP group and 0 in FP group with p = 0.0008, Lown’s grade of EP group was much more advanced than FP group with 6 of 7 patients in IVb compared to 14 of 53 patients in FP group with P value of whole Lown’s grade = <0.04 and duration till endpoints median of EP group 3.2 months compared to 6 months in FP group with high significant difference between them P = <0.0001.

Conclusion: Significant diagnostic information was derived from 24 hours Holter monitoring in patients with ischemic cardiomyopathy. PVCs number/24 hours Holter is an independent risk factor for mortality and ventricular arrhythmias. Lown’s grading system is a useful tool for risk stratification of SCD in patients with ischemic cardiomyopathy.

Electrophysiological study and radiofrequency catheter ablation in children with supraventricular tachycardias

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Background: Supraventricular tachycardia (SVT) is the most common tachyarrhythmia in pediatric patients, and accounts for more than 90% of pediatric arrhythmias. The three most common SVT mechanisms are: atrioventricular re-entry tachycardia (AVRT), atrioventricular nodal re-entry tachycardia (AVNRT), and atrial ectopic tachycardia (AET). In this study we aimed to characterize the patterns of different types of SVT in different pediatric age groups, and to assess the efficacy of radiofrequency ablation (RFA) in termination of SVT episodes that had been subjected previously to unsuccessful medical management.