Conclusions: Post-CABG AF occurs in about one third. Some preoperative parameters that could predict post operative AF include hypertension, diabetes, history of heart failure and history of previous AF. Additionally, CHADS[2] score doesn't only predict thromboembolic risk in AF patients but also could predict AF occurrence as well. Moreover, high basal heart rate, increased P wave dispersion, increased left atrial dimensions and impaired left ventricular systolic function were associated with AF. Finally beta-blocker therapy was found to be protective against post-CABG AF.

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Paroxysmal atrial fibrillation and inflammatory markers

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Atrial fibrillation (AF) is considered one of the most common of cardiac arrhythmias and associated with atrial structural changes that may have an inflammatory basis. Recently it has been revealed that inflammation contributes to the pathogenesis of AF. The purpose of the study is to evaluate the relationship between structural parameters and some inflammatory markers in patients with different clinical forms of nonvalvular AF.

Methods: 141 patients with AF (mean age 59, 73 ± 6, 49, duration - average 14, 36 ± 12, and 7 months) were enrolled in this study. Echocardiography examination and 24-hour ambulatory Holter monitoring ECG were registered in each patient. Blood samples were tested on the serum concentration of CRP and IL-6 by ELISA-method. All patients were divided into three groups: paroxysmal AF - 49 patients, persistent and long persistent AF - 23 patients, permanent AF - 71 patients. Statistical analysis of the data was made using software SPSS 13.0 and EXCEL -2007. The informative significance of the parameters was revealed by Two Step Cluster analysis

Results: the obtained results showed that depending on the AF form different degrees of the structural changes of the heart were revealed. .The duration of AF plays a definite role in the increasing of the sizes of LA and EDD and in reducing EF for all clinical forms of AF. Moreover, in patients with paroxysmal AF there is a direct correlation between the age and the LA and LV sizes. According to the cluster analysis in patients with paroxysmal AF the reliable indicators of information content are as follows: the duration of AF, the size of LA, EDD, EF and the concentration of IL-6 and CRP. In patients with the persistent type of AF the reliable indicators of information content are: the duration of AF, the size of LA, EDD and EF. In patients with permanent AF the reliable indicators of information content are: the duration of AF, the size of LA and EF only.

Conclusion: the obtained results suggest that inflammatory markers play the important role in the pathogenesis of AF, particularly in paroxysmal form. They contribute to the structural remodeling of the heart in patient with different forms of AF

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Assessment of combination of elevated Gal-3 and NT-proBNP levels as an independent predictors of new-onset AF in patients with acute coronary syndrome

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BNP and NT-proBNP may be of use in excluding myocardial infarction and to assist in determining prognosis in ACS. BNP, NT-proBNP and Galectin-3 (Gal-3) is an integral proteins associates with severe course and progression of heart failure, and with the processes of inflammation and fibrosis.

Purpose: The current study assesses the ability of NT-proBNP and Gal-3 to predict short-term outcomes in diabetic patients with ACS and to determine utility of them as a predictors of new-onset AF.

Materials and methods: A total of 108 patients (age 54.6 ± 4.6 years; 52 of them women) after ACS with varying degrees of compensation of DM-2 were included. 28 patients with the level of glycosylated hemoglobin (HbA1c) < 7.0% constituted group 1; 46 patients with HbA1c level 7.0-9% - group 2; and 34 patients with HbA1c > 9% - group 3. Serum Gal-3 concentration was analyzed using a commercially available enzyme-linked immunosorbent assay kit, the NT-proBNP analysis was performed with a commercially available immunoassay at the baseline, at 3 and 6 months after ACS, also was studied the relationship between them concentrations and AF development.

Results: Galectin-3 levels in contradistinction to NT-proBNP were not significantly associated with EF (r = –0.003, p > 0.05). The concentrations of Gal-3 and NT-proBNP were greatest in patients of group 3 and significantly exceed the value of the 1st group (Gal-3 at the baseline, respectively, in 1, 2 and 3 groups: 28.20 ± 0.58 ng/ ml; 34.39 ± 0.72 ng / mL; 38.96 ± 1.16 ng / ml (p <0,05) and (NT-proBNP at the baseline, respectively, in 1, 2 and 3 groups: 228.60 ± 31.92 ng / ml; 388.67 ± 28.14 ng / mL; 648.91 ± 46.34 ng / ml (p <0,05)).

Repeated measurements at 3 and 6 months remained elevated levels of Gal-3 and NT-proBNP in the patients with insufficient glycemic control; significant difference of Gal-3 levels and NT-proBNP were observed between the 1st and 3rd groups. The incidence of new-onset AF during 6 months of observation significantly different between groups and amounted in patients 1, 2 and 3 groups of 7.7%, 19.6% and 35.3% respectively. NT-proBNP levels > 630 ng/ml and Gal-3 levels > 32 ng/ml were significantly associated with new-onset AF during observation. After analyzing the appearance of clinical events during hospitalization, except new-onset AF we also observed a higher rate of new diagnosis of HF and new-onset of diuretics treatment, but not ventricular arrhythmias in the patient with high concentration of Gal-3 and NT-proBNP.

Conclusions: Combination of elevated Gal-3 and NT-proBNP levels may be considered as an independent predictors of new-onset AF in patients with DM-2 after ACS. Measurement of Gal-3 and NT-proBNP levels can be used, in addition to established risk scores, to determine to an increased risk of the new-onset AF in diabetic patients with ACS.

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Predictors of relapse following Elective DC Cardioversion: single UK centre experience

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Introduction: Atrial Fibrillation (AF) and flutter carry an increased risk of mortality. Several risk factors are associated with AF and flutter occurrence. We assessed whether the same risk factors have an effect on the success of DC cardioversions and subsequent maintenance of sinus rhythm at follow-up.

Methods: Retrospective data from electronic records of 109 consecutive patients who underwent elective DC cardioversion was analysed to assess for any correlations between patient demographics, co-morbidities, anti-arrhythmic use and echocardiogram findings (Left atrial size/volume/area graded for the level of dilatation according to the British Society of Echocardiography guidelines) with success at cardioversion and subsequent maintenance of sinus rhythm.

Results: Overall, the mean age was 63 years (85% males, 15% females) with 97% successful conversion to sinus rhythm. Unsuccessful cardioversion was associated with > moderate dilated left atrium. Persistent sinus rhythm at follow up was 62%. Relapse into AF/flutter (38%), was associated with female sex (63% versus 33% for males), <65 years (42% versus 34% with >65 years), > moderate LA dilatation (88% versus 37% with mild dilatation) and use of two anti-arrhythmic medication (43% versus 38% on single agent). Comorbidities associated with higher relapse rate included thyroid disease (67%), sleep apnoea (50%), valvular heart disease (41%), previous MI (30%) and hypertension (23%). Relapse risk was higher with current alcohol intake (75% versus 40% with previous excessive alcohol intake) with 85% of current and previous drinkers in the <65 age group. The relapse rates for non-smokers, ex-smokers and current smokers were 43%, 25% and 17% respectively.

Discussion: Elective DC cardioversion is extremely effective at reverting patients to sinus rhythm with a high rate of persistent sinus rhythm at follow up. Predictors of relapse include female sex, age <65years, certain co-morbidities and echocardiographic left atrial dilatation. Important modifiable life-style risk factor include current alcohol use with a protective effect from smoking.

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Usefulness of neutrophil/lymphocyte ratio as predictor of new-onset atrial fibrillation in acute coronary syndrome

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Introduction: Neutrophil/lymphocyte ratio (NLR) has been proposed as a novel marker of systemic inflammation and oxidative stress. It is an emerging marker of prognosis in patients (pts) with cardiovascular disease and it has been reported an association between the NLR and the recurrence of atrial fibrillation (AF) after ablation. We investigated the relation between the NLR and new-onset AF in pts with acute coronary syndrome (ACS).

Methods: Retrospective study based on a sample of 1253 pts consecutively admitted in the coronary care unit with ACS. New-onset AF has been defined as AF first detected on admission or during hospitalization; the NLR was determined at admission.

Results: We observed new-onset AF in 79 pts (6.3%). These were significantly older ($p < 0.001$) and had higher valvular disease prevalence ($p < 0.001$). There were no differences in cardiovascular risk factors or previous coronary disease. ST elevation myocardial infarction was the most common form of presentation in pts with new-onset AF ($p = 0.007$).

In echocardiographic evaluation, these pts had a higher prevalence of mitral regurgitation (grade > II/IV) ($p < 0.001$) and left ventricular ejection fraction <40% ($p = 0.001$); the left atrium diameter was also higher ($p = 0.002$).
These pts had, at admission, higher levels of creatinine ($p = 0.004$) and NT-proBNP ($p < 0.001$) and lower levels of hemoglobin ($p < 0.001$). The NLR was higher (7.7 ± 5.3 vs 6.0 ± 7.2, $p = 0.03$), but no difference was found in the total white cell count. Receiver operating characteristic curves explored the relation between the preoperative NLR and new-onset AF; the area under the curve was 0.65 (95% CI 0.59 to 0.71, $p < 0.001$).Using a cut-off level of 4.6, NLR predicted new-onset AF with a sensitivity of 65% and specificity of 64%.