Aim: to comparatively assess echographic indicators of atrial dilatation and decremental intra and interatrial and conduction in patients (pts) presenting junctional reentrant tachycardias (JT) with or without paroxysmal atrial fibrillation (pAF).

Methods: 58 pts without structural heart disease, referred to electrophysiological study which underwent ablation for JT were studied; 26 pts aged 41 ± 10 years with pAF episodes/ inducible AF, were compared to 32 control-matched JT pts aged 39 ± 12 years. Parameters: left atrial dimensions (LAd=M-mode, parasternal, LAt and LAl are measurements of short and long-axis apical four chamber view), surface (LAs), volume (LAv using ellipse formula), right atrial surface (RAs), total atrial surface (TAs=LAs+RAs). Decremental index (DI) was calculated as maximum percent prolongation of interatrial conduction time (iaCT) during S2 and S3 delivery.

Results: there was no difference between the 2 groups concerning baseline iaCT (59 ± 21 ms vs 53 ± 18 ms p=0.08), LAd (p=0.08) and LAt (p=0.09) while the following parameters were significantly higher in pAF pts: LAl: 5.0 ± 0.5 vs 4.5 ± 0.3cm, (p=0.001); LAs: 19.6 ± 5.7 vs 16.3 ± 2.1cm2, (p=0.001); TAs: 35.6 ± 6.9 vs 27.6 ± 5.1 cm2 (p=0.0001); LAv: 46.6 ± 10.4 vs 37.2 ± 9.3 ml, (p= 0.0001); DI: $41\pm17\%$ vs $24\pm14\%$ (p= 0.001). In pAF group, atrial fragmentation and atrial double potentials were recorded in 23 pts. No control pts had this evidence.

Conclusions: this study supports the role of atrial stretch in the genesis of AF in pts with junctional tachycardias. Further studies need to investigate the relation between burden of tachycardia and atrial stretch in a larger population.

17.4 PROLONGED SIGNAL -AVERAGED P-WAVE DURATION AND THE LONG-TERM RISK OF PERMANENT ATRIAL FIBRILLATION

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Objectives: To assess the long term risk of development of permanent atrial fibrillation (AF) in relation to the signal-averaged P wave duration (SAPWD), clinical and echocardiographic characteristics.

Methods: We studied 131 consecutive patients (88 M; median age 67 (29-87) years) with an earlier successful cardioversion of long-lasting AF to sinus rhythm (SR) at a long-term control visit. Electrocardiographic, clinical, and echocardiographic parameters had all been assessed at the primary cardioversion. The patients were classified as having persistent or permanent AF; permanent AF defined as accepted arrhythmia. Four patients could not be classified due to death or unclear treatment strategy; their data were censored. At the follow-up time, 67 patients had developed permanent AF. The predictive value of age, gender, hypertension, duration of the AF episode before cardioversion longer than one year, total duration of AF disease longer than two years, a left atrium diameter above 50 mm on the echocardiogram, the duration of the follow-up period, and the SAPWD on the probability of development of permanent AF was assessed by use of a logistic regression model.

Results: The median duration of the follow-up period was 2.68 (0.22-4.61) years. Only prolonged SAPWD (odds ratio (OR) 1.32 with a 95% confidence interval (CI) 1.08-1.61, p=0.0067) and the duration of the follow-up period (OR 1.72 with a 95% CI 1.09-2.71, p=0.020) were significantly associated with an increased risk of established permanent AF.

Conclusions: Prolonged SAPWD is a risk factor for development of permanent AF. Patients with this indication of advanced electrophysiological remodelling should be monitored closely and in case of recurrent AF rate control strategy should be considered early in the course.

17.5 BNP LEVELS PREDICT ATRIAL FIBRILLATION AFTER CARDIAC SURGERY

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Background: Post-operative atrial fibrillation (AF) remains a frequent event after cardiac surgery. The present study is aimed to evaluate the potential association between plasma BNP levels and AF after cardiac surgery.

Methods: BNP levels were determined at the beginning of the rehabilitation program, 10 ± 5 days after cardiac surgery in 89 pts in sinus rhythm at admission.

Results: In 32 pts (36%) at least one episode of AF occurred in the cardiac surgery department. A trend towards higher BNP levels in these pts in comparison to those without arrhythmia was observed (p=0.07). BNP levels upper the 75th percentile were related to higher risk of AF (p=0.01). Among these 32 pts, 12 (37%) developed a recurrence of the arrhythmia during the rehabilitation period, in comparison with 4 of 57 pts (7%) without AF (p=0.001). At multivariate analysis, only age and plasma BNP levels had independent association with post-operative AF (p=0.01 and p=0.04 respectively).

Conclusions: These preliminary data show an association between plasma BNP levels and AF after cardiac surgery, suggesting a more aggressive approach during rehabilitation in older patients with elevated BNP levels.

17.6 EPIDEMIOLOGY AND COSTS OF ATRIAL TACHYARRHYTHMIAS

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Background: There are not Italian data on the epidemiology and hospital costs of Atrial Tachyarrhythmias (AT).

Methods: Prospective systematic evaluation of all Emergency Room admitted patients with a diagnosis of AT in the Alessandria, Novara, Tortona and Novi-Ligure Hospitals from 11th November 2004 to 31st January 2005.

Results: A total of 212 patients were enrolled (average age: 66.21 ± 15.4); 48.8 % was male. Most of the patients were admitted to the ER in the first 48 hours after the AT event (158/206, 76.7%). A total of 1029 diagnostic test and therapeutic procedures were performed (an average of 4,8 per patient). Out of the total patients, 156 were discharged from the ER, 31 were hospitalized in the short-term observation department (average length of stay: 1.28 days), 9 were hospitalized in the cardiology department (average length of stay: 6.6 days), 13 were hospitalized in other departments (average length of stay: 2.5 days) and only two patients had different destinations.

Conclusions: This study shows that AT, even if most patients are discharged directly from ER, absorb a relevant amount of hospital resources.

17.7 THE USE OF HOLTER MONITORING IN EPIDEMIOLOGICAL STUDIES

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Aim: To work out a set of biological parameters, including Holter data (HM) for prediction of individual health among the elderly. The sample of 201 individuals (aged 67-87) was randomly selected from the Moscow Lipid Research Clinics cohort. Protocol included a questionnaire, physical performance tests, and medical examination. Relationships between the health outcomes and biomarkers were estimated. Significant associations were found:

Self-Rated Health - with smoking status, BMI, grip strength, cortisol, presence of arrhythmia (HM), ST depression (HM), SDANN <110 ms; low difference between the day and night heart rate averages.

Physical Ability Score - with smoking status, grip strength, low difference between the day and night heart rate averages, ST depression (HM), SDNN < 135 ms;

Disease Score - with HDL, pain of possible myocardial infarction (Rose questionnaire), circadian presence of arrhythmia and low awake increase in heart rate (HM);

Mortality Score - with smoking status, grip strength, MEAN >1000 ms, episodes of supraventricular tachycardia (HM).

Heart rate parameters measured by HM are associated more closely with majority of health outcomes compared to other biomarkers and scores.

18. ATRIAL FIBRILLATION: ELECTRICAL CARDIOVERSION AND DRUG PROPHYLAXIS

18.1 THE EFFECT OF PHARMACOTHERAPY ON THE RESULTS OF EXTERNAL CARDIOVERSION

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Several studies had verified the data about the influence of angiotensin system on atrial remodulation, its relation with atrial fibrillation (AF) and frequency of early relapses after external cardioversion (ECV). Our aim was to analyse the effect of possible pharmacotherapy patterns on AF relapses after ECV.