

to save patients life in emergency and prevented further ventricular arrhythmia recurrence on the long-term.

P414 Evidence of increased cardiac sympathetic nerve innervation in patients with premature ventricular complex and structurally normal heart: assessment with 123-I-metiodobenzylguanidine imaging

D.H. Kim, D.G. Shin, J.S. Park. *Yeungnam Univ. Hospital, Cardiovascular Division and Nuclear medicine, Daegu, Korea, Republic of*

Background and Objectives: Premature ventricular complex(PVC) is one of the most common arrhythmia encountered in clinic and an important factor for the genesis of life threatening ventricular arrhythmia in cardiac diseases. However, the pathophysiology of PVC is not well understood. The object of this study is to evaluate relationship between cardiac sympathetic nerve activity by using MIBG and PVC in patients with structurally normal heart.

Methods and Results: Thirty-four patients(12 men, mean age 61.6 ± 12.8 years) with echocardiography proven structurally normal heart were studied and divided into 2 groups with Holter monitor documented PVC(group A; 22 patients) and without PVC(group B; 12 patients) Echocardiography, 24-hour Holter monitoring and 123 I-MIBG were performed in all patients. The early(15min) and delayed(3hours) uptake, heart to mediastinum uptake(H/M) ratio, global washout ratio (WOR: defined as [early H - delayed H]/early H × 100) were measured on 123 I-MIBG. Polar map of LV myocardium were divided into 5 segment(anterior, septum, lateral, inferior and apex) and calculated regional uptake and WOR. The clinical variables, echocardiographic parameters and 123-I-MIBG derived parameters were compared between the 2 groups.

Results: Average of PVC count was 5,198/day in group A patients. There were no significant difference in age, LVEF(60.4±8.6% vs 61.4 ±9.7%, p=NS), LVESD and LVEDD between the 2 groups. Group A patients had higher early(2.75±0.36 vs 2.62±0.61, p=0.349), delayed H/M ratio(2.64±0.47 vs 2.27±0.57, p=0.130) and lower average WOR than that of group B(0.24±0.11 vs 0.27±0.11, p=0.407), though the difference was not statistically significant. The delayed inferior wall H/M ratio increased significantly in group A (2.69±0.45 vs 2.26±0.54, p=0.044), and early inferior wall H/M ratio has a tendency to be higher in group A(2.81±0.37 vs 2.62±0.63, p=0.087).

Conclusion: The occurrence of PVC in structurally normal heart may be related to increased cardiac sympathetic nerve innervation, especially of inferior wall. These results might partially explain the role of sympathetic nervous system in the genesis of PVC.

P415 Effect of endurance exercise training on ischemically induced changes in the T-wave and susceptibility to ventricular fibrillation

G.E. Billman, M. Kukielka, C.A. Carnes. *The Ohio State University, Dept of Physiology, Columbus, United States of America*

Background: Myocardial ischemia provokes a dispersion of repolarization that can induce ventricular fibrillation. As the transmural dispersion of repolarization is associated with changes in the descending portion of the T wave (Tpeak-Tend), T wave changes may precede ventricular fibrillation onset. We previously demonstrated that endurance exercise training protected against ventricular fibrillation. We hypothesized that exercise training protected against ventricular fibrillation through the reversal of ischemic abnormalities in repolarization (i.e., smaller ischemic T wave changes after training).

Methods: To test this hypothesis, T wave changes were recorded when ischemia was induced by a 2 min occlusion of the left circumflex artery during the last min of an exercise test in dogs with healed myocardial infarctions: 20 had ventricular fibrillation (susceptible) and 13 did not (resistant). These dogs were then randomly assigned to either 10-wk exercise training (treadmill running - 1st wk 20 min at 4.8 kph/0% grade, 10th wk 90 min at 6.4 kph/14% grade; susceptible n = 9, resistant n = 8) or an equivalent sedentary period (susceptible n = 11, resistant n = 5). The exercise plus ischemia test was then repeated at the end of this 10-wk period.

Results: Before training, ischemia induced significantly (ANOVA, P<0.01) greater increases in Tpeak-Tend in the susceptible dogs (Pre-occlusion 41.5±3.7 ms, Occlusion 60.7±4.4 ms) compared to resistant dogs (Pre-occlusion 38.3±4.2 ms, Occlusion 45.1±3.0 ms). Post-training, ischemia failed to produce T wave changes in either group (Susceptible, Pre-occlusion 39.3±3.4 ms; Occlusion 40.4±3.1 ms versus Resistant, Pre-occlusion 39.9±5.0 ms; Occlusion 42.9±4.2 ms) and did not provoke ventricular fibrillation. In contrast, in the sedentary susceptible dogs ischemia still provoked ventricular fibrillation and T wave increases (Pre-occlusion 48.7 ±8.4 ms, Occlusion 62±9.2 ms).

Conclusion: These data suggest that endurance exercise training can reduce ischemically induced inhomogeneities in repolarization and thereby could protect against ventricular fibrillation.

P416 Prevalence of Brugada-type changes during health check-up ECG registration

D. Duplyakov¹, V.L. Gluckova², Z.I. Vozhdaeva², S.V. Maximova², I.V. Starostina², E.N. Vasilyeva², E.V. Sysuenskova², L.P. Svetlakova², S.V. Goleva², T.T. Sorokina². *¹Samara Region Cardiology Center Samara, Russian Federation, ²VAZ Medical Center, Cardiology Department Togliatti, Russian Federation*

Background: The Brugada syndrome has been associated with sudden death in subjects without structural heart disease. It is well known that the prevalence of Brugada-type ECG varies among populations. Nothing is known about its prevalence in Russia. The aim of this study was to evaluate the prevalence of Brugada-type ECG in Russian adult population.

Methods: Prevalence of Brugada-type ECG was studied among subjects who underwent ECG registration during annual health checkup.

Results: 42,779 subjects, aged 22-68 years, underwent rest ECG during annual health check-up (01/05/2005 - 01/05/2006). The Brugada-type ECG was observed in 20 of them (0.047%). The classical Brugada-type (type 1) was found in four subjects only, while others had type 2 of Brugada syndrome. The prevalence for male subjects was 90%. Three subjects had a family history of sudden death but all cases had occurred in males older than 45 years. Four subjects had a history of syncope but all were considered as neurocardiogenic in origin by clinical features. Nonsustained ventricular tachycardia was observed on Holter ECG during night hours in one subject. Both treadmill test and echocardiography were out of value. No death or syncope occurred during the study.

Conclusions: We can conclude that in our population the prevalence of Brugada-type ECG is rare. These findings are in line with previous studies performed in European population.

P417 Ventricular fibrillation and tachycardia during acute myocardial infarction: incidence, predictors, mortality and treatment

L. Lazarov¹, V. Kotevski², A. Georgievski¹, E. Lazarova¹, D. Projevska¹, H. Pejkov¹, S. Tosev¹, M. Boshchev¹, A. Veljanovska¹, S. Caeva¹. *¹Institute of Heart Diseases, Coronary Artery Disease Department, Skopje, Macedonia, The Former Yugoslav Republic of, ²Institute for Heart Diseases, CCU, Skopje, Macedonia, The Former Yugoslav Republic of*

Purpose: (1) To evaluate the in-hospital incidence and mortality of patients (pts) with acute myocardial infarction (AMI) complicated by rapid polymorphic ventricular tachycardia (VT) and/or primary/secondary ventricular fibrillation (VF). (2) to identify the independent predictors of in-hospital VT/PVF and (3) to verify the most appropriate treatment of AMI.

Methods: Total of 10,212 pts with AMI admitted in the CCU was included in the study. The study period was January 1994 to December 2006. We have analyzed separately the data of subgroup of pts with AMI+VF/VT treated in the period 1999-2006 (6781 pts with AMI, 393 with VF/VT) because of predominant use of PCI and Thrombolysis.

Results: In-hospital incidence of VF/VT in total group was 5.9% (605 pts) with total mortality of 41.0%. In the subgroup the incidence of VF/VT was 5.8% with mortality rate of 38.7%. VF occurred in 247/393 pts, with mortality rate of 38.5% in primary VF pts and 51% in secondary VF pts. VT occurred in 146/393 pts with mortality rate of 14.4%. The mortality rate in the first hour was 30.8% in the first 24 hours 57.7%, in the first 72 hours 80.8%.

Independent predictors of higher in-hospital VF/VT incidence were male gender (75% pts), anterior wall AMI (67% pts), higher ST-segment elevation on admission ECG, longer time to PCI/thrombolysis (~3 hours), acute heart failure (21% pts) and larger enzymatic infarct size. VT/VF was not associated with history of prior infarction, hypertension, smoking, diabetes mellitus and lower serum potassium. After initial cardioversion, thrombolytics (Streptokinase, rTPA) were used in 18.1% pts and PCI was performed in 24.7% pts. The 3rd group of pts was treated with LMWH + Amiodarone or beta blockers. The mortality rate in PCI group was 23.7%, in thrombolytic group 26.8% and in the 3rd group (no PCI/fibrinolysis) 43.5%. Patients admitted for AMI+VT/VF were less often submitted to revascularization procedures during hospital stay (42.9%) compared to non VT/VF pts (82%).

Conclusions: AMI complicated with VT/VF occurred mostly in men, with anterior wall AMI, higher ST-segment elevation, higher enzymes at admission and lower blood pressure. The in-hospital mortality rate was higher for patients with early (<24 hours after enrollment) versus late (>24 hours) ventricular arrhythmias. Primary PCI and thrombolysis have significant effect (p<0.05) on lowering the mortality rate of AMI+VT/VF. Despite the improvement in the treatment of AMI the onset of VT/VF is still associated with poor prognosis.

P418 Ventricular tachycardia substrate characteristics in relation to tachycardia cycle length: different location of middiastolic electrograms in scar

L. Atea¹, A. Arenal Maiz², T. Datino², E. Torrecilla², F. Atienza², J. Almendral², A. Esteve², L. Castilla², F. Fernandez Aviles². *¹HGU Gregorio Marañon, Cardiology, Madrid, Spain, ²Madrid, Spain*

Background: Definition of ventricular tachycardia (VT) substrate in relation to the