242

Cardiovascular rehabilitation after a first acute coronary syndrome and the risk of recurrence and death in patients from the French MONICA registries

Paul-Louis Vervuere (1), Vanina Bongard (1), Dominique Arveiler (2), Jean Dallongeville (3), Jean-Bernard Ruidavets (4), Aline Wagner (5), Philippe Amouyel (6), Annie Bingham (6), Meyer Elbaz (7), Jean Ferrières (8)

(1) CHU, University School of Medicine, epidemiology, Inserm U1027, Toulouse Cedex, France – (2) Strasbourg University School of Medicine, epidemiology and public health, Strasbourg, France – (3) Inserm U744, Unité d’épidémiologie et de santé publique, Lille Cedex, France – (4) Inserm U1027, d部p代理partement d’épidémiologie, Toulouse Cedex, France – (5) Faculté de médecine, Laboratoire d’épidémiologie et de santé publique, Strasbourg Cedex, France – (6) Inserm U909, Paul Brousse Hospital, Villejuif, France – (7) Toulouse University Hospital, Department of cardiology B, Toulouse Cedex 9, France – (8) CHU Rangueil, Service de cardiologie B, Toulouse Cedex 9, France

Purpose: Cardiovascular rehabilitation after an acute coronary syndrome (ACS) has become more prescribed; differences still remain in prescription rates. The aim of this work was to assess the prognostic influence of rehabilitation after ACS in the current medical practice.

Methods: Our study was based on 2006 data from the French MONICA population-based registry which collects all cases of ACS occurring in people aged 35-74 in 3 French areas. The population consisted of 1383 incident hospitalized ACS after exclusion of those who died in the first 28 days of follow-up. The relationship between prescription of rehabilitation and composite outcome (ACS-recurrence or death) was analyzed using Cox models adjusted for living area, age, number of diseased vessels, diabetes, cardiovascular treatments and delays between symptoms and the first medical care.

Results: There were 171 ACS-recurrences or deaths during a median follow-up of 18.1 months and 23.6% of women. The rate of rehabilitation was higher in men than in women (36 vs. 26%, p<0.0001) and decreased with age. After multivariate adjustment the risk of composite outcome occurrence was identical in men and women for STEMI but higher in women for UA/NSTEMI [adjusted HR 1.75, 95% confidence interval (1.10-2.77)]. Rehabilitation was associated with a decrease of composite outcome whatever the type of ACS [adjusted HR 0.48, (0.32-0.73)]. However a significant interaction between rehabilitation and gender has been found in UA/NSTEMI (p=0.04) but not in STEMI. A stratified analysis for gender in UA/NSTEMI showed a significant benefit of rehabilitation in women [adjusted HR 0.06, (0.01-0.44)] but not in men [adjusted HR 0.82, (0.39-1.72)].

Conclusions: Whatever the definition of ACS, rehabilitation was associated with a reduction of ACS-recurrence and death in both sexes. However it seems to be more beneficial in women presenting UA/NSTEMI in whom it is less prescribed and in whom the rate of recurrence and death is higher.

January 19th, Saturday 2013

243

Heart rate variability analysis could help to determine the ventilatory threshold in patients with heart failure

Michael Bulvestre (1), Pierre Marie Leprêtre (2), Mohamed Ghanem (1)

(1) Centre de réadaptation cardiologique, Tracy-Le-Mont, France – (2) Université de Picardie Jules Verne, Amiens, France, Laboratoire de recherches adaptations physiologiques à l’exercice et réadaptation, Amiens, France

Ventilatory threshold (VT) have been shown to assess exercise tolerance and prescribe exercise rehabilitation in patients with chronic heart failure (CHF). However, the VT cannot always be detected in CHF by classical methods. Previous investigations also revealed that the assessment from heart rate variability (HRV) analysis gives an accurate estimation of VT in trained subjects. Therefore, the purpose of this study was to examine whether HRV analysis could helped in the VT determination in CHF.

Methods and results: 18 patients with CHF (12 males and 6 females, age: 62±13-years, weight: 73±17-kg, left ventricular ejection fraction: 0.32±0.07, VO2peak: 17±5.5-ml.min-1.kg-1) performed on cycle ergometer an incremental exercise (CPX testing). Beat-to-beat RR interval, VO2, carbon production (VCO2) and minute ventilation (VE) were collected during the test. VT corresponded to the last point before a first non-linear increase in both VE and VO2/VO2. A time domain (RMSSD) and a time-frequency domain (HFp) indexes both extrapolated to the RR time series. A marked RMSSD and HFp deflection points were found in the region of VT, and were identified as heart rate threshold (HRVT and RSA, respectively). No significant difference was found between VT, HRVT and RSA (p=0.05) in term of VO2, heart rate values and exercise intensity. Correlations between the different measures ranged from 0.97 to 0.99 with a strong agreement between all methods.

Conclusion: These data reveal that HRV analysis using time-frequency indexes during CPX testing can provide useful help to VT determination in patients with CHF.

244

Significance of T-wave inversions in athletes

Frédéric Schnell (1), Erwan Donal (2), Pierre-Axel Lentz (3), Gaëlle Kervio (4), Guillaume Leurent (2), François Carré (5) (1) CHU Rennes, cardiology, Rennes, France – (2) CHU Pontchaillou Rennes, cardiology, Rennes, France – (3) CHU Pontchaillou Rennes, radiologie, Rennes, France – (4) CIC-IT 804, LITI Inserm UMR 1099, Rennes, France – (5) CHU Pontchaillou, service de physiologie, Rennes, France

Background: T-wave inversion beyond V1 is rarely observed on the ECG of healthy athletes (<4%), whereas it is a common finding in patients with cardiomyopathy. Thus recent ESC recommendations for interpretation of resting ECG in the athlete underlined that this ECG pattern is not due to physical training and request cardiovascular exams. Classical exam performed is resting echocardiography. In this prospective study the respective value of different non invasive exams performed in case of negative T waves in athletes was evaluated.

Method: We prospectively included 49 athletes with T-wave inversion beyond V1. They underwent intensive cardiac investigations (exercise test, 24h ECG Holter monitor, rest and exercise echocardiography, cardiac MRI) to identify a potential cause.

Results: In all cases ECG was realized for pre-participation screening. Only few subjects reported cardiovascular symptoms (n=10) or cardiac arrhythmias than non-trained people. The mechanisms remain unclear, several

January 19th, Saturday 2013

245

Are bradycardic endurance trained athletes more at risk of syncope and arrhythmias than non bradycardic ones?

David Matelot (1), Nina Endjiah (2), Frédéric Schnell (3), Gaëlle Kervio (3), Corinne Beaufort (2), Nathalie Thillaye-Du-Boullay (3), François Carré (3) (1) CIC-IT – Inserm 804, Rennes, France – (2) University Hospital of Rennes, Rennes, France – (3) LITI – Inserm 1099, Rennes, France

Purpose: Endurance trained athletes show more positive tilt tests and more arrhythmias than non-trained people. The mechanisms remain unclear, several