

Methods: the study population consisted of 90 asymptomatic diabetic normotensive patients (group 1) and 90 age- and sex-matched control subjects (group 2). All included subjects had no evidence of hypertension, valvular and ischemic heart diseases. Coronary heart disease was excluded in all diabetic patients by non-invasive testing. Conventional echocardiography and tissue Doppler imaging (TDI) analysis were performed in all patients and healthy controls.

Results: LV diastolic diameter, LV wall thickness and LV ejection fraction were similar in both groups. The mitral annulus systolic velocities measured by TDI were significantly decreased in diabetic patients compared to controls but remained within the normal range. However, mitral annulus early diastolic velocities (Em) measured by TDI were markedly reduced in diabetic patients (7.6 ± 1.3 cm/s vs. 11.9 ± 1.6 cm/s, $p<0.01$) with higher ratio of early diastolic transmitral pulsed Doppler E to Em (E/Em) velocities (15.2 ± 1.4 vs. 8.1 ± 1.8 , $p<0.01$) suggesting impaired LV diastolic function. Among diabetic patients, impaired diastolic LV function is significantly pronounced in the subgroup with increased duration of diabetes (≥ 10 years).

Conclusion: diastolic LV function may deteriorate in asymptomatic patients with isolated diabetes mellitus and worsens with longer disease duration.

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Right ventricular diastolic dysfunction in patients with previous pulmonary embolism

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Objectives: To assess right ventricular (RV) characteristics and function in asymptomatic patients with previous pulmonary embolism (PE).

Methods: We enrolled 30 asymptomatic patients with previous PE (group 1) and 30 age- and sex-matched healthy controls (group 2). Included subjects had no evidence of valvular or ischemic heart diseases, and no chronic pulmonary diseases. All included patients were recalled one year after the PE episode for echocardiographic assessment. We used standard echocardiography and tissue Doppler imaging.

Results: We observed no difference in left ventricular ejection fraction between the 2 groups ($64\pm 4\%$ vs. 65 ± 5 , NS). Also RV diastolic diameter, RV ejection fraction, the Tei index, the tricuspid annular plane systolic excursion and the tricuspid annulus systolic velocities were similar in both groups. In addition, there is no difference in pulmonary arterial pressures between the 2 groups. However, tricuspid annulus early diastolic velocities were markedly reduced in group 1 patients (-7.9 ± 1.6 cm/s vs. -12.3 ± 1.8 cm/s, $p<0.01$) with lower ratio of early to late diastolic velocities (0.78 ± 0.19 vs. 1.24 ± 0.25 , $p<0.01$) reflecting impaired RV diastolic function in patients with previous pulmonary embolism.

Conclusion: Despite the absence of pulmonary hypertension, our study shows the presence of a persistent subclinical RV diastolic dysfunction later after a pulmonary embolism episode.

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Medical hypothesis: heart rate on admission and CRP are correlated, in acute pericarditis: a link between heart rate and pericardial inflammation?

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Introduction: Rest is usually recommended in acute pericarditis, as it could help to lower heart rate (HR) and contribute to limit “mechanical

inflammation”. Whether HR on admission could be correlated and perhaps participate to inflammation has not been reported.

Methods: Between March 2007 and February 2010, we conducted a retrospective study on all patients admitted in our center for acute pericarditis. Diagnosis criteria included 2 among the following: typical chest pain, friction rub, pericardial effusion on cardiac echography, or typical ECG findings. Primary endpoint was biology: CRP on admission, on days 1, 2, 3, and especially peak. We evaluated also recurrences and clinical events during hospitalization and at one month.

Results: We included 73 patients. Median age was 38.0 y (CI 25-75% 28.0-51.0) and median hospitalization duration was 2.0 d (1.5-3.0). 27% of the patients presented pericardial effusion. Heart rate on admission was 88.0 bpm (CI 25-75%: 76.0-100.0) and on discharge 72.0 (65.0-80.0). Heart rate on admission was significantly correlated with CRP on admission ($r=0.34$, $n=69$; $p=0.004$), CRP peak ($r=0.54$; $n=61$; $p<0.0001$), CRP on discharge ($r=0.32$; $p=0.021$) and temperature on admission ($r=0.40$; $n=39$; $p=0.01$). Multivariate analysis showed that HR on admission is associated with an elevated CRP peak, independently of temperature on admission. Fever was scarcely observed (19.5%), and was neither correlated to HR nor CRP, after multivariate analysis.

Conclusion: In acute pericarditis, HR on admission is independently correlated with CRP levels. These observations could suggest a link between HR and pericardial inflammation.

Key words: Acute pericarditis, CRP, inflammation, heart rate, pericardium, cardiac frequency

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Aetiology of Pulmonary Hypertension in patients older than 70 years with preserved left ventricular function and no valvular heart disease

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Introduction: Pulmonary Hypertension (PH) is frequent among elderly patients and frequently due to severe valve diseases or heart failure with decreased left ventricular (LV) ejection fraction. The part of other causes is less known. The aim of this prospective study is to determine the aetiology of PH in older patients with preserved LV ejection fraction and no valve disease.

Methods: We included prospectively patients over 70 years of age with LV ejection fraction $>50\%$, no valve disease. PH was suspected during echocardiography and confirmed by pressure measurements during right heart catheterization. Each patient had complementary tests (blood tests, pulmonary function tests, ventilation perfusion lung scan, chest CT, abdominal ultrasound scan), conditioned by the haemodynamic characteristics of PH, in order to determine its cause.

Results: Between November 2010 and November 2011, we included 26 patients (17 women), 78+/-years old, with peak systolic pulmonary pressure of 68+/-15mmHg.

Nine patients (35%) had a precapillary PH. Among them, PH was the consequence of thromboembolism ($n=3$), idiopathic ($n=3$), due to a connective tissue disease ($n=1$) and to a chronic lung disease ($n=2$).

Six patients (23%), all with LV distolic dysfunction, had a post capillary PH. Two of them had previously undergone cardiac surgery for atrial septal defect and mitral valve replacement.

Eleven patients (42%) had a reactive post capillary PH. PH was idiopathic in 2 cases and drug induced for one patient. We found 2 connective tissue diseases, one thromboembolic disease, 2 chronic lung diseases. Four patients had a LV distolic dysfunction. One patient had two causes of PH. When LV diastolic dysfunction was the only cause of PH, it was always associated with persistent atrial fibrillation.

Conclusion: Reactive post capillary PH is predominant in elderly patients with preserved systolic LV function and no valve disease. The main cause of PH is diastolic dysfunction associated to atrial fibrillation.