Pulmonary embolism (PE) and chronic obstructive pulmonary disease (COPD): clinical presentation, paraclinical findings and prognosis

Salma Longo [Orateur] (1), Zied Frihka (2), Ma Berriche (3), Baha Alhabil (4), Ihsen Zairi (5), Sofien Kammoun (6), Sana Fennira (5), N Falfoul (3), Z Jerbi (3), Sondos Kraim (7)


Introduction: COPD is considered a risk factor for PE and PE presents a part of the classic differential diagnosis of exacerbation of COPD, thus, the true prevalence of PE in this situation is not known.

Objectives: To describe the clinical, paraclinical findings and prognosis of patients having COPD with PE.

Materials and methods: A retrospective, study covering 145 patients hospitalized in the emergency department over the period from January 2000 to December 2007 with a PE. We divided our patients into 2 groups: the first group with COPD (COPD+) and a second without (COPD-).

Result: The history of COPD was noted in 12 patients that is 8.3% of the general population. This group was older than (COPD-) (average age: 68 vs. 55.2, P=0.014). Clinical findings show that (COPD+) was significantly more coughing (p <0.0001) and more dyspnea (P=0.014) than (COPD-). More signs of right heart failure (25% vs. 12.8%, p=NS), less clinical signs of venous thrombosis (8.3% vs. 43.6%, p=NS) and more signs of congestive heart failure (16.7% vs 4.5%, p=0.07) were noted in (COPD+) . Respiratory rate and systolic blood pressure were significantly higher than the (COPD-). The ECG was abnormal in all patients of COPD+ showing signs of right ventricular systolic overload in 33%. Chest X ray results were abnormal in all patients of COPD+ compared to 44.4% in COPD- (p=0.01). Arterial blood gases were less hypocapnic (72.2% vs 41.7% p=0.013) in COPD+. The report PaO2/FiO2 was significantly lower in the (COPD+):270.8 ± 73 vs 360.2 ± 90.7. We had recourse to scintigraphy significantly lower among this population: 66.7% vs. 91% (p=0.02). COPD was significantly related to hospital mortality (P=0.02).

Conclusion: Our study shows that the clinical presentation and paraclinical findings in COPD is not specific. It illustrates the seriousness of this patients, with an greater impact on cardiac and respiratory function and significantly higher mortality.

Echocardiographic data of patients with pulmonary embolism and right heart thrombi

Thomas Hugues [Orateur] (1), Khelil Yaici (1), Mathieu Arnault (1), D Latcu (1), Nadir Saoudi (1), Pierre Gibelin (2)

(1) CH Princesse Grace, Cardiologie, Monaco – (2) CHU Pasteur, Nice, France

In patients with pulmonary embolism (PE), it is not uncommon to see right heart thrombi (RHT) at echocardiography. Whether RHT are an independent risk factor for mortality is unclear. In these patients, the treatment of choice is controversial.

Objective: the study was designed to describe RV morphology, RV diastolic and systolic function at baseline and at discharge in pts with PE and RHT vs pts with PE alone.

Method and patients: Echocardiography data and hospital outcome of patients admitted to intensive care unit with PE were analysed. After exclusion of 14 pts (3 pts with initial cardiac arrest, 5 pts with history of congestive heart failure or LV EF depressed, and 6 pts with poor image quality), the study included 37 pts.

Results: The initial TTE showed a mobile clot in the RH in 4 pts. All the RHT found in our study were located in right atrium, were mobile and prolapsing into the right ventricle. In one case the clot was trapped astride the foramen ovale prolapsing into both atria. Anticoagulation with unfractionated heparin was initiated without delay in patients with RHT. A comparison between PE pts with RHT and PE pts without (n=33) showed that age, body mass index and heart rate were not different. Right ventricular end diastolic diameter and RV/LV diameter ratio were higher at baseline and at discharge. There was no difference between RHT pts and pts with echocardiographic RV dysfunction (n=19) at baseline concerning diastolic and systolic RV function.

Conclusion: RHT at the time of diagnosis of acute PE was associated with persistent RV dilatation at discharge.
Introduction: In recent years, clinical assessment of pretest probability has become a crucial tool in the diagnostic approach of patients with suspected pulmonary embolism (PE). Study objective

Study and compare the predictive accuracy of clinical prediction scores: the Wells score (WS) with the Geneva score (GS) and revised Geneva score (RGS) in the assessment of pretest probability of PE

Methods: It is a monocentric, retrospective study concerning 150 patients having diagnosed with deep venous thrombosis (DVT) hospitalized in the emergency department during the period from January 1997 to December 2008.

Results: The study population consisted of 150 patients diagnosed with DVT confirmed by lower limb ultrasonographic examination. A total of 34 (23 %) patients were diagnosed with PE. The distribution of the patients according to the groups and the under groups in the three clinical prediction scores as well as the frequency of PE are summarized in this table below

<table>
<thead>
<tr>
<th>Frequency of PE (N=150)</th>
<th>N(%)</th>
<th>N(%)</th>
<th>N(%)</th>
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</thead>
<tbody>
<tr>
<td>low</td>
<td>0</td>
<td>122</td>
<td>18</td>
</tr>
<tr>
<td>moderate</td>
<td>129</td>
<td>26(17.3)</td>
<td>93(62)</td>
</tr>
<tr>
<td>high</td>
<td>2(14)</td>
<td>2(1.4)</td>
<td>55(36.6)</td>
</tr>
</tbody>
</table>

The comparison of the predictive accuracy of the SW and the SG showed an area under the ROC curve of 0.889 for the SW and 0.834 for the SG with a slight superiority of the score of wells. The concordance between these two scores was moderated (u = 0.58 ). The SGR had an inferior concordance compared to the SW (u = 0.4 ) and SG (u = 0.278 ).

Table – The distribution of the patients according to the groups and the under groups in the three clinical prediction scores

Conclusions: In our population the Wells score appeared to be more accurate than the Geneva score and the simplified revised Geneva score. The impact of this finding in terms of patient outcomes should be investigated in a prospective study.

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Intravenous aldosterone blockade at presentation improves myocardial perfusion after primary PCI for STEMI

Farzln Beygui [Orateur], Anne Bellemain-Appaix, Johanne Silvain, Olivier Barthélémy, Jean-Philippe Collet, Gilles Montalescot

AP-HP, CHU Pitié-Salpêtrière, Cardiologie, Paris, France

Purpose: High aldosterone levels are associated with vascular injury and poor outcome after STEMI. We hypothesized that early aldosterone receptor blockade at admission for primary PCI may improve myocardial perfusion.

Methods: 159 consecutive patients admitted for primary PCI for STEMI were treated by 200 mg IV potassium canrenoate at presentation. The patients were randomly matched to 318 patients based on the admission GRACE score’s deciles. Myocardial blush grade (MBG) was assessed in all patients by 2 operators blinded to the treatment. The outcome of the study was the rate of MBG 3 after primary PCI. A multivariable conditional logistic regression model adjusted on abciximab and thienopyridine pre-treatment, and the symptom to needle time was used to compare cases and controls.

Results: cases and controls were comparable regarding age (63±14 vs 62±14) gender (male 81 vs 79%), and baseline risk factors. Cases presented later (7.7±5 5 vs 5.6±5.4, p=NS) and were less often treated by abciximab (75 vs 84%, p=0.05).

TIMI flow grades prior and after primary PCI were comparable between cases and controls. Based on TIMI flow grade the success rate was comparable between cases and controls (87 vs 90%). MBG 3 rate was significantly higher in cases than in controls with an adjusted OR 2.23 (95%C 1.40-3.55). Figure depicts the distribution of post-PCI MBG among cases and controls.

Conclusions: Early aldosterone blockade on admission for primary PCI is associated with improved myocardial reperfusion as assessed by MBG. These findings underscore the vasculoprotective effects of aldosterone blockade early after STEMI.