Reviewer’s report

**Title:** Cardiac Asthma in Elderly Patients: Incidence, Clinical Presentation and Outcome.

**Version:** 1  **Date:** 2 April 2007

**Reviewer:** Claudio Tantucci

**Reviewer’s report:**

General
This is an observational work aimed to know the incidence of wheezing, though to reflect the occurrence of broncho-obstruction (so called “cardiac asthma”), during cardiogenic pulmonary edema in a population older than 65, admitted to the hospital because of acute left ventricular failure. Second aims were to compare the characteristics (clinical, functional) between elderly patients suffering from cardiogenic pulmonary edema with and without broncho-obstruction and their clinical outcomes.

The Authors found that “cardiac asthma” occurred in one third of elderly patients with cardiogenic pulmonary edema (which is a much higher prevalence than in younger patients), that at the admission they in average had less adequate alveolar ventilation (with more frequent ventilatory failure and respiratory acidemia) and that the main clinical outcomes (in hospital and one year mortality and re-admission rate) were similar.

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**Major Compulsory Revisions**

The study is interesting looking at a neglect aspect of acute ventricular failure in a quite large cohort of elderly patients (n=212) where 75% had Doppler-echocardiography and 50% had NT-proBNP levels measured. The above mentioned aims are fulfilled even though they should be more precisely stated in the Introduction section.

The methods (considering the context) are adequate and the results clearly presented (Tables and Figure). What does it mean past history of COPD? COPD is a functional syndrome and its diagnosis is made by spirometry showing chronic airflow obstruction not or scarcely reversible. Do they have the previous PFT of the patients to make diagnosis or they report just symptoms suggestive of chronic bronchitis and/or emphysema.

This point must be carefully addressed by the Authors.

Which were the criteria to perform or not perform PFT? Chance? Decision of the physician who took care of the patient? Symptoms? Previous history? The Authors should comment this point and convince the reader that there is no bias because of it.

Fortunately, the percentages of patients who had PFT are quite similar in those with (35%) and without (30%) broncho-obstruction at the admission and this helps.

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**Minor Essential Revisions**

The instruments used to obtain echocardiographic measurements and to perform pulmonary function tests and blood gas analysis should be declared.

What does it mean thoracic distension? Presence of radiographic signs of pulmonary hyperinflation, enlargement of costal spaces, horizontalization of the ribs, flat diaphragm?

Table 1 –
(first page)
The measure of smoking weight is wrong (pack-years is the right one!)
The number of patients with “cardiac asthma” who used inhaled bronchodilators is lacking.

Table 2 –
It almost unforgivable express FEV1 in L/s?? (also in the text!) FEV1/FVC ratio in L?? and FEF25-75% in L??
The numbers of PEF rate (L/min) seem wrong. It should be easier for the reader to have also the maximal expiratory flow-rates expressed as mean ± SD and not only as median and IC95%.
What are the predicted used for these parameters?
Based on the functional parameters reported in Table 2 it is not possible to conclude that a restrictive defect is present without measuring TLC. This can be only suggested by the normal FEV1/FVC % predicted with decrease in the FVC and FEV1 % predicted. This has been correctly underlined in the text (last paragraph in the Results section) by the Authors who, however, cited VC (?) that is not given in Table 2.
Moreover, it is really surprising that in a subgroup of patients (cardiac asthma) with a 45% of “past-history of COPD” the PFT performed in more than one third of them showed no obstructive ventilatory defect (i.e: FEV1/FVC% predicted less than lower 5th percentile of normal value).
In order to better understand the functional characteristics of these two subgroups of patients it would have been really useful to measure the Residual Volume (increased in the cardiac asthma patients? And reduced in the others?).
Have the Authors some clues on lung volumes in the patients who underwent PFT?

DISCUSSION
(Second page)
Line 3 - The sentence starting with “There is also a large….” and the following starting with “Furthermore, past or current….”must be omitted because irrelevant.

Line 13 – The right sentence should be: “Our study suggests that emergency physicians should focus on past diagnosis of COPD in patients with CHF and cardiac asthma, especially in those with hypercapnia”.

(third page)
Line 3 – The PFT performed show a greater peripheral airway obstruction in “cardiac asthma” patients and therefore do not support, on average, a prevalent “history” of COPD, as claimed by the Authors.

LIMITATIONS OF OUR STUDY
(second page)
Line 19 – The sentence should be: Although bronchodilators were given in only one third…

English needs to be carefully revised.
The possible merit of this observational study is to represent a rationale to plan a prospective study aiming to compare the C-PAP vs BI-PAP effectiveness in the treatment of these two subgroups of patients with (severe) cardiogenic pulmonary edema with the hypothesis (to reject or not) that BI-PAP can have better short-term outcomes in those with “cardiac asthma”.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions
Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

'I declare that I have no competing interests'