Author’s response to reviews

Title: Heart failure diagnosis in primary health care: clinical characteristics of problematic patients. A clinical judgement analysis study.

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PDF covering letter
Dear Editor,

We are now ready to submit the revised manuscript called “Heart failure diagnosis in primary health care: clinical characteristics of problematic patients. A Clinical Judgement Analysis study”.

We are grateful for the reviewers thorough reading of our manuscript. We have tried to respond to their questions and recommendations, and we hope that the article will have improved from this work. All the changes in the article and the responses to the reviewer’s questions are listed below.

Yours Sincerely

Ylva Skånér
List of changes in the manuscript

Content

Page 2: Correction of data
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Correction of data

Two patients had been misclassified regarding cardiac enlargement: a man with relative cardiac volume 470 (= no cardiac enlargement, since the reference value for men is ≥ 490) and a woman with rel volume 460 (= cardiac enlargement, since the reference value for women is ≥ 450). This led to a correction in all three tables (Table 1 in the original version has been expanded to three tables, se below, Rev 1 point 4). In new Table 1 the number of patents with cardiac enlargement in the groups of patients with and without heart failure was changed from 26 and 7, respectively, to 25 and 8, respectively. In new Table 2 the number of patients with cardiac enlargement in the group of patients with the least diverging assessments was changed from 5 to 6; In new Table 3 the number of patients with the combination of cardiac enlargement and dyspnoea in the groups of patients with heart failure was changed from 23 to 22.

Table 3: The number of patients with the combination of dyspnoea and leg oedema and rales in the group of patients with the least diverging assessments was corrected from 2 to 1.

Response to Reviewer 1 (FV)

1 IN BACKGROUND: Some words about the usefulness of brain natriuretic peptide for diagnosing left ventricular failure:

Brain type natriuretic peptide as a tool for diagnosing heart failure/LV systolic dysfunction was not used in routine clinical practice in Sweden when this study started, and still it is not. It was not included in our national guidelines (from 1997, se below, Rev 2 point 5), and we found little or no information about it in the patient records. In interviews with GPs before the study, they never mentioned it as important information for them when diagnosing heart failure. We have added a sentence in the Method section about or selection of cues, former page 6, line 8 (same in new version). We refer to this sentence in the Discussion section, former page 9, line 16, (now page 11, line 12), and give the reference to Smith 2000. See also below, Response to Rev 2, point 5 (about BNP not being included as an assessment to perform regularly in Swedish guidelines 1997.)
2
IN METHODS: Specify that low blood pressure was found in our group of patients (specifically):
We have added “in our group of patients” to the sentence about the low blood pressure. (In Methods: former page 6 line 16 (now page 6, line 20).

3
IN RESULTS: Other diagnoses in the group of non-heart failure patients:
A paragraph has been added with information about diagnoses/diseases of the patients diagnosed as non heart failure, including information about diastolic dysfunction (former end of page 7 (now page 8 line 5). No significant differences were found between the two groups regarding these diagnoses.
Information has also been added about the difference regarding systolic blood pressure between heart failure and non heart failure patients. Former page 7, line 17 (now page 8, first line).

4
IN RESULTS: Information about all the eight cues:
Former Table 1
In order to make it possible to expand Table 1 to include the information asked for (information about all cues), and at the same time make it easier for the reader, we have divided table 1 in 3 new tables. Statistical information has been included in the tables, and we added a sentence about statistical methods in Methods, former page 7, line 7 (now page 7, line 11):

Table 1 (new): This table contains information about all the cue values for the heart failure and the non-heart failure patients, including the value of ejection fraction, which was not given as a cue.

Table 2 (new): This table contains information about all the cue values for the patients giving rise to the least and the most divergent assessments, including the value of ejection fraction, which was not given as a cue.
A sentence referring to Table 2 has been inserted, together with a sentence with information about the difference between the two groups, former page 8, line 2 (now page 8, line 11).

Table 3 (new): This table contains information about cue combinations in the groups of case vignettes, both those with the least and the most diverging assessments, and those with and without heart failure. One more cue combination has been added: cardiac enlargement + history of myocardial infarction. It was added since it has been shown to have the best predictive value in a study on heart failure diagnostics in primary health care in a recent study (Reference: Davie AP, Francis L, Caruana GR, Sutherland GR, McMurray JJV. Assessing diagnosis in heart failure: which features are any use? Q J Med 1997; 90: 335-339).
A sentence referring to Table 3 has been inserted, former page 8, line 18 (now page 9, line 10), followed by a sentence about the added cue combination.
IN RESULTS: The possibility of diastolic heart failure in non heart failure patients with the cue combination dyspnoea + leg oedema + rales

Former Table 1, now Table 3

The issue of diastolic heart failure is problematic, as we have written on page 6, line 2 (same in new version), and we have tried to avoid to go too deep into this subject in our article. However, as the reviewer points out, for some of the patients, as they are presented in the case vignettes, diastolic heart failure or other conditions could have been considered. We have included information about how many patients that had been suspected by the cardiologists of having diastolic dysfunction (see above, “other diagnoses…”). None of the patients with the combination of dyspnoea, leg oedema, and rales were among the patients suspected of having diastolic failure.

Since we reduced the conclusions about “classic” findings (see below, point 6), and since it mainly concerns one single patient (which in real life suffered from pulmonary fibrosis and cor pulmonale), we have not further commented upon it in the article. Besides, having a normal systolic function on echocardiography is a criterion for diagnosing diastolic heart failure, and since information about this was not given in the case vignettes, the participants were not in the position to assess the presence of diastolic heart failure.

IN DISCUSSION: Unjustified conclusion about “classic” clinical findings (former page 9, line 5)

We agree that this conclusion may be weak, and we have tried to reformulate it in a more well-founded way. We have removed the sentence “We found that “classic” clinical findings…” referred to by the reiewer.

In two new paragraphs we discuss the diagnostic value of cues and cue combinations in more detail, former page 9, after line 11 (now page 10, line 9). The two sentences about treatment with diuretics which was before the last two sentences on page 9, were moved into the first of these paragraphs (now page 10, line 11). Consequently, the section CONCLUSION, both in the article and in the abstract, has been reformulated accordingly.

Response to Reviewer 2 (JK)

1 Little practical value of the study

More knowledge is needed both about the characteristics of patients in general practice who are suspected to have heart failure, and about the diagnostic process. Research results will not benefit patients unless digested by doctors and incorporated into their daily practice and routine decision-making. This study is supposed to be a contribution to our knowledge about the general practitioners’ diagnostic process.

2 The use of case vignettes is far from everyday life:

Judgement Analysis Studies based on case vignettes have been used in many fields, including medicine, dealing with for example rheumatoid arthritis (Kirwan) otitis media (Chaput de
Saintonge), and pulmonary embolism (Wighton). It is a fairly robust method for modelling judgement and decision processes, and it captures underlying decision policies, which often differ from the policies that the subjects themselves believe they are using. It allows for comparisons between subjects (using the same vignettes), between groups of subjects and between subjects over time. (Cooksey RW. Judgment Analysis. Theory, Methods, and Applications. San Diego, Academic Press, 1996.)

3 Doctors from different levels of care possess different cues – GPs symptoms and signs, cardiologists qualitative data concerning ECG and X-ray:
Both GPs and cardiologists (in Sweden) have access to both symptoms, signs, ECG and X-ray. However, different groups of doctors may put different emphasis on the same kind of information, and interpret it in different ways. One of the main points with this study (the previous publication, Skånér 2000) was to give GPs and cardiologists the same information, and compare their weighing of it. Admittedly, this could be a problem if the cues that are presented in the vignettes do not correspond to what an individual doctor consider to be relevant information, or if what is considered relevant information is left out. In our study, what might have been problematic is that information about echocardiography was not included (for reasons mentioned in the Discussion section), and this could be more of a problem for the cardiologists. However, it should be a reasonable task for both GPs, cardiologists and students to rate the probability for heart failure for patients before they have the result of echocardiography.

4 IN RESULT: Result section very condensed and might be difficult to interpret for GPs – suggestion to incorporate information and explanations from the previous study:
We agree that the Result section is very condensed, and we have tried to improve upon it. Suggestions from reviewer No 1 (see above, Rev 1, point 4) made us extend the data results, and distribute them in three tables instead of one, which will probably make the results easier to grasp.
We added two sentences about the assessment variations from the previous study (“For all of the vignettes….”), as an introduction to the paragraph about Figure 1, former page 8, line 2 (now page 8, line 14).
In the paragraph about cue combinations, starting at former page 8, line 18 (now page 9 line 11) we added a sentence about the cue combination we added (see above, rev 1, point 4, Table 3].
In the paragraph about the regression line plot, we extended the sentence so that it treated both the vignettes with the least and the most divergent assessments, former page 9, first line (now page 9, line 16).

5 IN DISCUSSION: Include lessons from ESCs guidelines and other sources concerning diagnostic criteria and sequence of diagnostic procedures:
Two paragraphs discussing cue combinations was added (see above, Rev 1, point 6). In the second of those paragraphs, after former page 9, line 11 (now page 11, line 17), we make comparisons with an epidemiological study in primary health care concerning the value of the cue combination cardiac enlargement + a history of myocardial infarction (we also added the reference: Davie 1997).
A paragraph about guidelines has been included, after former page 9, last line (now page 11, line 16) and a reference to ESC heart failure guidelines 2001 is given. The most recent version of Swedish guidelines regarding diagnosis and treatment of heart failure was published 1997 by the Swedish Medical Products Agency, and it was based on ESC version from 1995. It differs from the new guidelines in not including brain natriuretic test among the assessments supposed to be performed routinely to establish the presence of heart failure. In this paragraph, we try to demonstrate how well the recommended assessments in the guidelines could have helped doctors to diagnose heart failure, given the information presented in the case vignettes.

**Changes in the text not related to comments from the Reviewers**

Former page 2, last line (same in new version): “diagnosed as heart failure” changed to “with cardiac enlargement and atrial fibrillation”.

Former page 7, line 9 (now page 7, after line 15): The sentence about Pearsons correlation deleted, since it referred to an analysis included in an earlier draft.

Former page 8, line 9 (now page 8 after line 2): The sentence about outliers deleted, since we thought it might be difficult to understand it without further explanations.

Former page 7, line 7 (now page 7, line 11 and 13): The sentence “All calculations…” was moved to the end of the paragraph, and information about Fisher exact test added.

Acknowledgements, former page 11, bottom lines (now page 14, top lines): Support from Swedish Heart Lung Foundation added.