Reviewer's report

Title: Diagnosis of asthma/COPD related to drug prescribing: a register based cross-sectional study in Swedish primary health care

Version: 1 Date: 23 October 2013

Reviewer: Siebrig Schokker

Reviewer's report:

Comments to the authors

This manuscript deals with an interesting though complex topic related to underdiagnosis and undertreatment as well as overdiagnosis and overtreatment. The authors have to be complemented for their study sample. In my opinion the study results are more useful for researchers performing studies into this field than to clinicians. There seems to be discrepancy between prescribing and diagnostic labelling which indeed is very important for researchers in this field. In my opinion the conclusion that the adherence to recommendations in prescribing asthma/COPD medication appears poor can not directly be drawn from the results of this study. Can the authors elaborate on their main message, is it a clinical message or a message most important for researchers?

Furthermore, in the introduction the authors mention that in children and adolescents the gap between diagnosis and prescribed asthma medication has already been shown. This might be explained by the diagnostic problems in young children with asthma which the authors also describe. Did the authors consider to exclude (young) children from the analysis or performing subgroup analysis.

Moreover, data from an earlier study from the same research group, referenced as number 7, already showed a discrepancy. This might be included in the introduction more explicitly. In that study already the most common explanations were mentioned in the discussion like underdiagnosis, off-label use and use of medication as a diagnostic tool. The present manuscript might be improved for readability to focus more on the reasons for the discrepancies found earlier on.

Minor:

Introduction:

The introduction Last paragraph of the introduction: the sentence “.. since a diagnosis performed according to guidelines includes proper counselling, appropriate medication and hopefully thereby leads to reduced off-label prescribing and trial by medication.” needs to be clarified. What do the authors mean by this?

Methods

Study population:
Anticholinergics were not included, could the authors explain why this was done?

Could the authors clarify what they mean by clinical evaluation (Methods, part random sample, detailed analysis, first paragraph).

The authors mention that the random sample was checked against the data from the SPCD concerning variables in both data sets, and a close resemblance was found. Which variables were compared and what is meant by close resemblance?

The authors mention that they extracted the indication for the prescription, either ICD-code or written free text). The authors might consider to add that this does also include symptom- based diagnoses like cough and dyspnea, and bronchitis.

Could the authors comment on the power of the study?

Results:

Table 1.
Confusing, the numbers in the First row can be better presented in the first title row and then within brackets since these are only total group size numbers (and no percentages).

Minor: the numbers 5527 and 6807 do not sum up till 12328 (Group B).

Table 2.
Same as table 1, number (n) can be better depicted in the first title row since these are no percentages (confusing)

Table 3.
Same as table 1, number (n) can be better depicted in the first title row since these are no percentages (confusing)

Figure 1
It would be valuable to present the numbers on overlap (7537 out of the 18892)

Figure 3.
What is the main message of figure 3? An age related effect of the discrepancy found?, then it would be better to depict different bars (by example % diagnoses asthma with medication, % diagnoses asthma without medication, % COPD diagnoses with medication, % COPD diagnoses without medication, % diagnoses asthma and COPD with medication, % diagnoses asthma and COPD without medication and % medication without a diagnosis).

In my opinion figure 3 might misleading, it looks like the figure represents the gap between diagnosis and medication prescribing, that is underdiagnosis of asthma and COPD. However, only prevalences are depicted and when taking into consideration figure 2 it goes both ways, possible under and overdiagnosis and under/overtreatment. What does the percentage of 2.6 (as mentioned in the text) mean?
Discussion:

In the first paragraph the authors mention that individuals having asthma or COPD used less medication than recommended. Did the authors present results for drawing this conclusion?

A disadvantage of register-based data is lacking spirometry and data on clinical outcomes like symptoms, disease control, and exacerbation rate. Maybe the authors can speculate more on this limitation and possible consequences of this when interpreting their data.

Conclusion:

The conclusion with regard to inadequate treatment of asthma patients since one third is non-medicated is only based on the Venn diagram and not on detailed information. Could it be that this high percentage is because of a considerable amount of children in this group? Or maybe because these are the more severe asthma patients visiting a pulmonary physician?

In my opinion the results of this study are indeed very valuable for researchers in this field who should be aware of discrepancies when assessing prevalences in different manners. What would the authors recommend to use in future studies using register-based data?

The clinical implication of these findings, however, might be arbitrary. The authors state that adherence to recommendations in prescribing asthma/COPD medication appears poor and that there is room for improvement. Can the authors explain a little more how they are going to implement these study results in education and organising the care for patients with asthma and COPD.

According to the authors what should be the next step in improving care for these patients?

References:

Reference 15 is referenced as an article focusing on children, but to me this seems incorrect (second paragraph introduction).

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests