Reviewer's report

Title: Health-related quality of life varies in different respiratory disorders: a multi-case control population based study

Version: 0 Date: 12 Feb 2018

Reviewer: Steven Ronsmans

Reviewer's report:

Abstract:

In the Results section of the abstract p-values are given. I think it might be more useful to provide the effect estimates and confidence intervals (such as provided in the article).

Introduction:

Line 103: "Patients from CB HAVE impaired…". Same tense as the other statements

Line 114: I think this statement is not correct: 10-40% of patients with rhinitis also have asthma (but over 80% of asthmatics have rhinitis) [Allergy. 2008 Apr;63 Suppl 86:8-160]. So it is common but not "usually".

Line 114-5: I'm not sure if I agree with the reasoning that you will disentangle the effects of AR and CA. In fact you study the effect of CA (with or without AR) and the effect of AR (without CA). So in the end you know the effect of the AR symptoms of those without CA but you don't know anything about the effect of the AR symptoms (per se) of those cases with CA. It might be possible that in general the AR cases without CA are less invalidated by their AR symptoms than the AR cases with CA. Maybe it doesn't really matter but the statement you make suggests that you will really disentangle the effects of these 2 entities (CA and AR).

Methods:

Line 128: How was this new random sampling done?

Line 133: What was the response to the invitations? What percentage did come to the clinical evaluation for each category (asthma, COPD/CB, AR, others, controls)

Line 136: You state that allergologic tests were done. What were these tests exactly? What specific IgEs were tested? What skin prick tests were done? Can you provide these? The reference you provide (n° 29) does not provide more information on allergologic tests.
Line 166: Same remark: What skin prick tests were done? Were they adapted to the history of the patient? If not, you might have some misclassification: eg in patients having allergic rhinitis to specific plants not tested with the skin prick tests (they would be classified as 'non-allergic')

Line 179: What do you mean by 'ictus'?

Results:

Line 219: Percentage of females?

Line 221: 52.2 YEARS

Line 222-224: "Never smokers were mainly controls, AR, …". I think the phrasing should be changed a bit: "Controls, AR and PA were mainly never smokers…"

Line 232: The word 'other' should not be in this phrase

Line 242-248 and Table 3: As the multinomial logistic regression is not a common technique I think it would be useful to provide some 'narrative' clarification in the discussion on how to interpret these RRR. What does a RRR of 0.615 mean for example?

In the same paragraph and table 3: I think it is not necessary to report 3 digits as it can mislead the readers to think these effect estimates are very precise while they are base on relatively small groups (28-224 cases). I think 2 digits would be more appropriate.

Discussion

Line 279: I think it is correct if you say that patients with AR have a lower QoL than patients with asthma. I just think you cannot say that AR has 'less influence than asthma itself' based on your results because you don't know the isolated influence of asthma. The category 'asthma' you use includes cases with and without AR. I should try to rephrase this a little bit

Line 310-311: You say that AR negatively affects HRQL especially at older ages and BMI. I could not find results in your study underpinning this statement. Could you provide these in the results section?

Line 312: You state that "even at the level of severity that is common in the general population, COPD and asthma have a significant impact". Is the level of severity in your study population different from previous studied (hospital) populations? Was there a higher percentage of 'mild' cases (based on for example lung function testing)? To underpin these conclusions it can be interesting to provide an overview of the spirometries of the asthma and COPD cases.

Line 315-316: I think that I understand what you mean by 'minor', 'major', 'marginal' diseases but I think it should be good to clarify this point and say who exactly is saying that these diseases are
'minor'. CB and AR are not marginal in terms of prevalence. It is mainly the perception of physicians (not the perception of patients) that diseases that cannot be 'objectified' (e.g. by lung function or imaging) are 'minor' diseases. I think this is a very interesting point. It would be interesting if you want to make this point that you refer to some literature on the perception of physicians of AR and asthma, or of 'not-objectified diseases' in general. I'm not very familiar with this literature but in the 'pain'-literature (pain = subjective) there are similar studies.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

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