**Reviewer’s report**

**Title:** Circadian rhythm of COPD symptoms in clinically based phenotypes. Results from the STORICO Italian observational study.

**Version:** 0  **Date:** 18 Apr 2019

**Reviewer:** Ulrich Koehler

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This is a very interesting and well-done study in patients with clinically defined phenotypes of COPD. The circadian rhythm of respiratory symptoms is analyzed. As main results the authors find that the majority of early-morning and day-time symptoms are found in patients with chronic bronchitis (CB) and emphysema (EM). Nighttime symptoms were more prominent in patients with CB.

First, definition of clinical phenotypes of patients with COPD is very senseful, however it may be difficult sometimes. What is your experience?

The following questions are of interest:

1. Frequency of nocturnal symptoms is heightened in patients with CB. Your explanation for this is supine position, bronchial hypersecretion and accumulation of mucus.

How many of your patients with CB/EM and nocturnal symptoms did still smoke? Did you compare those patients with and without still existing nicotinism?

Productive cough being strongest during sleep and morning hours is highly suggestive of still smoking. It is very likely that continued tobacco exposure leads to more productive cough and respiratory symptoms by progressive airway Inflammation.

2. In the discussion I miss the opportunity of ambulant monitoring of respiratory symptoms like cough. Especially during night-time and the early-morning hours it would be possible to monitor cough and wheezing objectively because of less artifacts. Longterm recording offers a promising opportunity in the objective assessment of respiratory symptoms.
3. Definition of clinical phenotypes is of prognostic value. What does this mean? What are the consequences for you? Changing or intensifying medication?

**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.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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