Reviewer's report

Title: A multi-item Physician Global Assessment scale to assess psoriasis disease severity: validation based on four phase III tofacitinib studies

Version: 1 Date: 30 Jan 2019

Reviewer: Research Square

Reviewer's report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?

Yes - overall design, population, and control groups are appropriate

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?

Yes - methodologies are adequate and well implemented, assumptions are addressed, analysis is robust

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?

Yes - important reporting details are present, analyses are adequately communicated, figures and tables are well labeled and described

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?

Yes - interpretation accurately reflects analyses, limitations/bias are acknowledged, accurate descriptors are used
Could an appropriately REVISED version of this work represent a statistically sound contribution?

Yes - current version has sound statistics

STATISTICAL REVIEWER COMMENTS:

This is an interesting validation study to validate the PGA scale using data from four phase III studies of tofacitinib among patients with moderate to severe chronic plaque psoriasis. I will limit my review to the methodological aspects as well as the statistical analysis carried out and reported in this study.

This study aimed at achieving this by using Confirmatory Factor Analysis (CFA), assessment of reliability and internal consistency of PGA measurements; definition of the Clinically Important Difference (CID); evaluation of the ability of the PGA to discriminate between different degrees of disease severity; and correlation of the with other clinical outcome measures.

First of all, the data used from the four different studies seems homogeneous (particularly in terms of inclusion criteria of participants) enough to pool them together.

The confirmatory factor analysis is sufficiently reported in methods and results, and seems to have been done well. The same goes for the test-retest reliability and internal consistency reliability evaluations.

Analyses on PGA's ability to differentiate between severity levels of psoriasis and to detect a clinically important difference were also reported with sufficient detail and seem to have been conducted properly. The same also applies to convergent and divergent validity.

REQUESTED REVISIONS:

see comments above"
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 am able to assess the statistics

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

Needs some language corrections before being published

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