Reviewer's report

Title: Interest of the modified Medical Research Council scale for the assessment of dyspnea in daily living in obesity: a pilot study

Version: 3 Date: 28 May 2012

Reviewer: Amanda Piper

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The purpose of this study was to evaluate the mMRC scale in the assessment of dyspnea in obese subjects and determine its relationship with lung function and functional capacity. As previously found and confirmed by this study, breathlessness is common in obese individuals although no specific tool has been developed to assess dyspnea in this specific population. The authors found significant correlations between the mMRC scale and BMI, some lung function parameters and six-minute walking distance, suggesting that this scale could be used as a tool in assessing dyspnea in daily living in obese individuals.

The premise for the study is clinically relevant, the manuscript is generally well-written, with conclusions in keeping with the study findings. However, there are a few issues that could be clarified.

Major revisions/questions

1. Were the patients studied consecutive referrals, and was the respiratory evaluation part of their routine assessment, or was there a specific reason that these individuals were referred for respiratory assessment?

2. As highlighted by the authors, the most common abnormalities seen in obese individuals are a decrease in ERV and FRC and an increase in oxygen consumption. Other parameters such as TLC, MVV and inspiratory muscle performance although lower in obese individuals are usually still within the normal range (as stated in the references cited by the authors), unless the patient is morbidly obese. It would be better to shorten this section, addressing those lung function parameters that best characterize the abnormality seen obese subjects. This then frees up some word count to discuss point 3 below.

3. Biological parameters (such as Hb, fasting glucose and CRP) were measured with only one significant association with mMRC found. However, there is no information either in the introduction or the discussion as to why these particular parameters were chosen and why some association with the mMRC might have been expected. This aspect of the hypothesis has not been made clear.

4. Males are more likely to demonstrate central/upper body obesity, and therefore the results could be influenced by the make up of participants in this study. However, I found it unclear what proportion of subjects were male versus female. In Table 2 it states 17 male/28 female, but in Table 5 there are 29 males and 16 females reported. This needs to be clarified. There may be gender
differences in the perception of dyspnea, and this could be looked at in future studies.

5. While this is only pilot work, adding the BDI and comparing it to the mMRC in the same population would have been interesting and is a limitation of the study, as pointed out by the authors. While the mMRC may be able to be used to classify obese individuals with more severe breathlessness with activity, it remains to be seen whether it is sensitive to changes with intervention in this population and requires further investigation. Finally, adding a measure of health related quality of life and determining the degree this was related to mMRC in this obese population is also something that could be considered. These points might be seen as limitations and areas for future investigation.

Minor essential

Abstract, Background, 4th sentence – change “evaluate the interest” to “evaluate the use of the mMRC scale”

Methods, 3rd sentence – “monoxide”

Background, 1st paragraph, 1st sentence – change “actual” to “significant”

2nd paragraph, 3rd sentence – “series”

5th sentence – “Although the mechanisms of dyspnea in obesity remain unclear, it is moderately correlated with lung function.”

Switch the 6th and 7th sentences, replacing “Of note” with “However”

3rd paragraph, 1st sentence – change “interest” with “use”, and the 6-minute walk test with walk distance.

Methods

Patients, 2nd sentence – “>18 years”.

3rd sentence – “pulmonary function testing”

Pulmonary function tests, 3rd sentence – “in a sitting position”

Results and discussion, Demographics, 2nd paragraph, 4th sentence – “regarding smoking status”

6th Sentence – “Severe obstructive sleep apnea syndrome”

Relationships between mMRC scale etc, 1st paragraph – “Of note,”

2nd paragraph, 2nd sentence – could you clarify what you meant by “as demonstrated for the nMRC scale”.

3rd sentence – “between the Borg score” is better

Page 9, 2nd paragraph, 2nd sentence – “Regarding the mMRC scale, two versions of this scale have been used…. Other scales have been also been used to assess dyspnea. The Baseline Dyspnea Scale… that these other scale are much more time consuming …”

3rd paragraph, 1st sentence – delete “yet”
9th sentence – “the abdominal contents on diaphragm position”.

10th sentence – While the FEV1 may be slightly reduced in patients with severe obesity, the FEV1/VC ratio is preserved as seen in our study”.

12th sentence – “Two studies have shown”. Also in this sentence and elsewhere in the discussion, distinguish between the 6MWT (the actual test) and 6MWD (the result generated). In this sentence it should be 6MWD.

16th sentence – the information about the fasting glucose would be better included in the paragraph below (4th paragraph)

4th paragraph, 4th sentence – “Of note”

5th paragraph, last sentence – “mMRC scale might be of value in the assessment of dyspnea”.

Discretionary

1. It would be clearer for the reader if the normal values for the biological measures were added to Table 5 rather than being listed in the Methods section.

2. Do the authors have any information regarding fat distribution (eg Waist circumferences or waist/hip ratios) as fat distribution may have affected abdominal loads and lung volumes, contributing to dyspnea?

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare I have no competing interests