Reviewer's report

Title: Lung cancer symptoms and pulse oximetry in the prognostic assessment of patients with lung cancer

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Reviewer: victor chang

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General

The authors have addressed many of the comments from the first review, but this has led to other issues that should be addressed.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Background

1) The first paragraph is concerned with the role of QOL evaluations in lung cancer patients. The LCSS is not a QOL instrument: it is a symptom instrument. KPS is also considered important in prognosis and is not mentioned at all. This is ironic since the paper compares the prognostic contributions of the LCSS and the KPS, and not of any QOL instrument The first paragraph may be better on the role of symptoms and KPS in prognosis, and then lead to the question of whether symptom instruments such as the LCSS aid in estimating prognosis.

2) In the introduction of pulse oximetry, possible advantages of SpO2 monitoring are listed. Did these happen in this series of patients? Perhaps a sentence should be put in the results section.

3) The authors should rephrase their hypothesis. Perhaps “We hypothesized that a scores from a symptom instrument and SpO2 readings are predictive of survival in patients with advanced lung cancer.”

Method

Why were non-black skin and absence of nail abnormalities eligibility criteria?

Data Analysis

The way the data analysis is written, I assume that the initial Cox model included all the variables listed and dropped out the nonsignificant variables (reverse step wise procedure). Table 4 States “Variables not in the equation” This is confusing.

Later in the discussion, the authors state that the recommended sample should be five to ten patients per factor in the equation. The authors may have misunderstood the statistics. If this is true (which it is), then a minimum of 70 patients should have been accrued as their starting equation has 14 factors (14 factors x 5 events/factor), not the final equation. Instead the authors used 41 patients. These inconsistencies should be resolved. The authors can say that even in this very small underpowered sample, and with all the reservations about the validity of the SpO2, that the SpO2 and LCSS were statistically significant prognostic factors, and this justifies further larger scale studies.

What would happen if the authors did a forward stepwise procedure analysis?
What percentage of patients had died at the time the analysis was done?

Why was not the LCSS symptom burden studied as a possible prognostic factor? Perhaps it could include the information from both fatigue and loss of appetite.

Results

What do the authors mean when they state SpO2 captured a functional aspect not fully covered by intensity symptom scores, are they referring to the correlation with cough?

Discussion

Why is SpO2 prognostic? Perhaps it reflects severity of underlying COPD?

Loss of appetite was thought to be prognostic factor by Morita

“We noticed a lack of correlation between patient and observer fatigue subscales….“ This is also true for pain (see Grossman et al). Many papers have now appeared on the discrepancy between observer and patient rated assessments (see articles by Bruera and McMillan). The authors could make this a separate paragraph.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Background
Second paragraph – Although it lacks detail in many QoL domains, such as social spiritual and psychological parameters, the LCSS has demonstrated.... The LCSS is a symptom instrument and is not intended to be a quality of life instrument. The underlined phrase can be deleted.

Third paragraph - ..and its use has taken clinical anesthesia, respirology and critical care by storm over the past 20 years. Pulse oximetry is widely used to rapidly monitor arterial oxygen saturation.

Background – Non-invasive monitoring…. The paragraph might read better if it stated that lung cancer patients may be at increased risk for hemoglobin desaturation and that the physical exam may not detect desaturation. The availability of the pulse oximeter to noninvasively monitor oxygen saturation enables better measurement of this important variable.

Fifth paragraph In this study, we cast for a prognostic role to the LCSS and pulse oximetry in the care of ..... To cast for implies looking for in a disorganized way. Suggest In this study, we hypothesized baseline LCSS scores and pulse oximetry values contribute prognostic information in ambulatory outpatients with lung cancer.

Method
Design This was an observational cohort study on the prognostic value of baseline LCSS scores and pulse oximetry in advanced or metastatic lung cancer. Consecutive outpatients
Rewritten as
This was an observational cohort study where consecutive outpatients with advanced or metastatic lung cancer who attended the ….

Hypothension hypotension

Results Most patients had non-mall Most patients had non-small

Pulse oximetry but were not deemed candidates to. were not deemed candidates for

Survival analysis – Age, gender, and Karnofsky were not retained at the final prognostic model … were not retained in the final prognostic model

Discussion

SpO2 was independent to most LCSS data, and they offered independent prognostic information on overall survival - change to

SpO2 was independent of most LCSS data, and the combination of SpO2 and LCSS offered independent prognostic information on overall survival

Were associated to an increased …… were associated with an increased (this happens elsewhere in the text)

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions
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
Declaration of competing interests:

I declare that I have no competing interests