Reviewer’s report

Title: A prospective study to investigate the role of serial serum mesothelin in monitoring mesothelioma.

Version: 0 Date: 18 Sep 2017

Reviewer: Metintas Muzaffer

Reviewer’s report:

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I read the manuscript named 'A prospective study of serum mesothelin for monitoring malignant pleural mesothelioma'. The topic of manuscript is quite up-to-date, still a subject discussed in the literature.

Here are my thoughts on this study:

In this study authors aim to assess the ability of serum mesothelin to monitor disease in patients who have completed chemotherapy or those receiving best supportive care.

As in other studies, this study method was also designed to determine the decrease and increase in mesothelin level relative to the disease course during treatment. However, in this study, mesothelin levels were measured within 30 days of CT control and CT findings were compared with the serum level of mesothelin in patients treated with chemotherapy or best supportive care. So the patients do not have a regular mesothelin and CT scan. For example, there is no measurement of serum mesothelin levels just before treatment, when the chemotherapy response is measured, when chemotherapy is over, when there is recurrence. There is no regular mesothelin level measurement every 3 or 6 months to see the change of mesothelin according to the progression of the disease in the patients treated by best supportive care.

When the method was not so constructed, it was tried to interpret the obtained partially scattered data with some available statistical evaluations. I think that there is a discrepancy between the name and the conclusions of the study. For this reason, the title of the article and the aim should be rearranged according to the work done.

I also want to draw attention to these issues:
What are the comparisons between overall survival times (mean or median)?

Statistical analysis revealed a T-test comparing mesothelin levels. However, because the mesothelin level does not show a normal distribution, it is the Mann-Whitney U test which should be done statistically.

The results of a single group should be given or a statistical comparison of the results of two groups should be given in Table 1.

The title of Table 1 is insufficient. Saying only "baseline demographics" is insufficient, because survival values and baseline serum mesothelin values are given, too.

The baseline value of mesothelin is important, but it is not clear how. The suitability of the study group to distinguish two groups with 2 nmol/l should be explained more clearly.

It should be explained how the calculation of the change between the two mesothelin values was made according to the changes of 10%, 15% and 25%.

In the method section authors said that sensitivity, specificity and likelihood ratio values will be given, whereas sensitivities, specificities, predictive values and accuracies have been given in the tables. I think that they should be give all data which you stated in method section.

Although the study referred to multivariable analysis, however the results have not been given as a table. No information has been given on how to track in multivariate analysis model. The results of univariate analysis of modeled variables would also be appropriate.

The following points also need to be clarified:

* The histopathology as a variable how it is addressed to multivariate model?
* Is the sarcomatoid cell type taken alone in the model?
* For multivariate analysis, the data is fairly small. How they explain this limitation?
* How was the treatment variable involved in Cox regression analysis?

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

No

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

Unable to assess
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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I recommend additional statistical review

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

Not suitable for publication unless extensively edited

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