Peer Review File
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Reviewer A

In their paper the authors have conducted a population-based cohort study, collecting clinical characteristics from the Surveillance, Epidemiology, and End Results (SEER) database. 3130 cases were collected. Data were then divided into two cohort: the train cohort (from 2010 to 2016, 2208 patients) and the test cohort (from 2017 to 2019, 922 patients).

The results of the predicting model are already well established: the older, male, sarcomatoid mesothelioma, T4, N2 and M1 tended to have worse survival, although epithelioid mesothelioma, patients treated surgically, with radiotherapy and chemotherapy have better chance to survive.

I have several comments:

Comment 1:

• Line 214: “pleurectomy/exfoliation (P/D)” should be defined as pleurectomy/decortication; “extrapulmonary pneumonectomy (EPP)” should be defined as extrapleural pneumonectomy

Reply 1:

Thank you for your helpful and rigorous advice, we have modified the naming of surgical methods.

Changes in the text:

See Page 11, line 214-215, marker on yellow.

Comment 2:

• It is well known that patients who underwent EPP are less likely to complete chemotherapy regimen, due to the impact of surgery on patients’ status. If surgery has been considered a protective factor for survival, the surgical procedure should be defined.

Reply 2:

We gratefully appreciate for your valuable suggestion. SEER 17 Registries database (2000-2019) to used to study malignant pleural mesothelioma (MPM) this time, where surgical procedure of MPM was not recorded in detail. Given the potentially effects of different surgical methods, we completely agree with you that it’s better to define it. This is one of the limitations of our study ().

Considering the low incidence of MPM, there is no enough MPM samples for research in our hospital yet, which is one of the reasons why we choose SEER. We will continue to focus on it until we can optimize the model further using our own data, including defining and documenting the whole surgical strategy. Thank you for pointing out this problem in manuscript again.

Changes in the text:

see Page 16, line 323-326, marker on yellow.

Comment 3:

• A more detailed paragraph on the clinical implication of this predictive model should be inserted. In case of higher risk patients what do you expect us to do?

Reply 3:

Thank you for your suggestion and question. The purpose of this MPM prognosis model is that clinicians can conveniently use this windows desktop tool to predict MPM patients' survival. One the one hand, doctors and patients may concern about prognosis or survival time, and on the other hand, MPM patients with low survival rate may not need to accept additional treatment with large side effects but more supportive care. These may give some references so they could more easily implement tailored treatment.

Thank you for underlining this deficiency again. We do think your suggestion make our manuscript more academic, and have added and revised related content.

Changes in the text:

See Page 6, line 113-115 and Page 16, line 316-322, marker on yellow.

Reviewer B

Comment 1:

There are several important omissions/mistakes.

To start it is simply impossible to know the true incidence of mesothelioma worldwide given the poor reliability of diagnosis in the developing world. And even in the US/Europe it is estimated that about 13% of all diagnosis are wrong. Reviewed and discussed in:

DOI 10.3322/caac.21572

Reply 1:

Thanks for your kind and rigorous comment. Because of our carelessness, we failed to discover this phenomenon earlier, and have corrected and described this in the manuscript to remind readers.

Changes in the text:

See Page 4, line 69-71, marker on yellow.

Comment 2:

A critical factor that helps predict survival from mesothelioma, is the presence of germline mutations of BAP1 or other genes, these patients do significantly better and some have been cured. This has been well established in recent years, yet it is totally ignored in this manuscript:

See, for example:

DOI: 10.1200/JCO.2018.79.0352

DOI:https://doi.org/10.1016/j.jtho.2022.03.014

doi.org/10.1073/pnas.1821510116

DOI: 10.1200/JCO.2018.78.5204

The age, is also a confounding factor since most mesotheliomas in young individuals occur in

carriers of germline mutations of BAP1 or other tumor suppressor genes, so it is not so much the age the issue but the fact that these people carry germline mutations of BAP1 that makes them live longer and be more susceptible to therapy (see references above).

Reply 2:

Thanks for your informative advice again. We apologize for skipping over this significant result. However, after reading the pertinent material you provided again, we do discover that the presence of germline mutations of BAP1 or others may influence MPM and our study discussion. Relevant part has been supplemented in the discussion part.

At the same time, the SEER database also lacked biomarkers information (like gene mutation). This is one of our study's limitations. We have added it to related part.

Thanks for your suggestion again. It makes our manuscript more scientific and rigorous.

Changes in the text:

(BAP1) See Page 13, line 253-255 and see Page 15, line 304-309, marker on yellow.

(Limitation) See Page 16, line 323-326.

Comment 3:

The discussion about therapy is outdated, and does not keep into consideration different therapeutic options offered in different countries. See for example DOI 10.3322/caac.21572

In summary, this review requires a much more critical approach and a better knowledge of the literature.

Reply 3:

Thank you for your suggestion. After reading articles you recommend, we have broadened our perspectives on the treatment of MPM. We discover that there really isn't an exact way to completely cure patients in most cases. But the identification of new targets and therapeutic drugs for these targets are ongoingly developed. A number of clinical trials are continuously bringing hope, which is anticipated to be beneficial to some MPM patients. We briefly explained these in the manuscript.

Changes in the text:

See Page 15, line 304-309, marker on yellow.