Reviewer's report

Title: Development and validation of a prognostic model to predict the prognosis of patients who underwent chemotherapy and resection of pancreatic adenocarcinoma: A large international population-based cohort study

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Reviewer: Fabio Bagante

Reviewer's report:

The authors analyzed 11,837 patients who underwent surgery and chemotherapy for TNM stage I-II PaC to develop and validate a prognostic model for pancreatic ductal adenocarcinoma (PDAC). While the authors used five population-based health databases allowing for a large study (population-based) cohort of patients the results are quite disappointing with a low prediction ability of their nomogram (c-index 0.6) in both the training and test sets. Even though the use of five population-based databases is interesting and might allow comparison between countries (incidence of disease, comparison of clinic-pathological characteristics of patients), overall the results are well known (factors associated with prognosis) and the model does not help to predict patients prognosis better than the current models. Moreover, the paper needs language revision and major revision to improve introduction and discussion sections. In particular:

1) Prognostic factors and development and international validation of a benchmark population-based survival-predicting model in patients with resected stage I-II pancreatic adenocarcinoma receiving chemotherapy a large international population-based cohort study. Very confusing. Benchmark doesn't make any sense. International and population-based are repeated two times. The title should be something like "Development and validation of a prognostic model to predict the prognosis of patients who underwent chemotherapy and resection of pancreatic adenocarcinoma"

2) The introduction is poorly written. There are obvious concepts that might be better reported (i.e. "However, resection rates in PaC are low [3], and survival remains poor even after resection [4].") and obscure sentences not supported by evidence ("Studying survival-associated factors in patients with resected PaC receiving chemotherapy is difficult due to challenges in accruing adequate and sufficient numbers of operated patients with detailed information")
3) "While to date some studies have tried to identify prognostic factors, most of them reported single institution/hospital-based case series with <200 long-term survivors, revealing conflicting results [13-16]." It is not true. There is a robust and detailed literature on the prognostic factors for PDAC including clinical, pathological, genetic, and immunological variables that should be at least reported in the introduction/discussion.

4) Why in the "Patient characteristics" paragraph there are two numbers (i.e. "The proportion of women was 42%-51%, and the mean age was 61-65 years.")? In the methods paragraph you need to describe how you reported the results. I prefer continuous variables reported as medians with interquartile range (IQR) and discrete variables reported as totals and frequencies so include N and X% and median (IQR) where needed.

5) "Sensitivity analyses of the main models by incorporation of the further prognostic covariates did not change the association patterns or markedly alter the association strengths for the variables included in the main models (data not shown)." What does it mean? Report your results or don't mention other analysis.

6) Why did you use the "worse" class as reference level in the multivariable model? Please use the "better" class (i.e. N0 instead of N1) as done in the nomogram (N0 = 0 point)

8) The use of five population-based databases is the interesting part of the paper, you should add more results to describe and compare the databases (incidence, patients characteristics, short- and long-term outcomes).

**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.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
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No

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