Reviewer’s report

Title: Advantages of using reduced-volume intensity modulated radiation therapy for the treatment of nasopharyngeal carcinoma: a retrospective paired study

Version: 0 Date: 23 Dec 2018

Reviewer: Panagiotis Balermpas

Reviewer’s report:

The authors present a retrospective analysis of two different target volume definitions for radiotherapy of nasopharyngeal carcinoma:

One patient group treated with IMRT using conventional target definition and one with reduced-volume-IMRT.

The reduced volume IMRT resulted in similar oncological outcomes but reduced risk of toxicities like xerostomia and hearing loss.

The topic is very interesting and technically sound, the language used nearly flawless and the conclusions are supported by the results.

I only have some minor remarks:

- I wonder why wide accepted prognostic factors, such as N-stage and chemotherapy are not prognostic in your cohorts. You should at least discuss and try to explain this fact.

- Please compare your endpoints (OS, PFS, LCR, DMFS), especially metastases rate with those of Blanchard et al. (Lancet Oncol, 2015). Your recurrence/metastases rates are a bit lower.

- Background, first sentence: "..(NPC) is a malignancy shows high prevalence" Please edit "that" or "which"

- Background, second sentence: Add a reference for the leading role of radiotherapy in treating NPC (e.g. a guideline)

- Statistics: Which approach did you use for you multivariate analysis (enter, forward, backward?) and how did you select the parameters included? Why did you include parameters not significant in univariate analysis? Are there not too many factors included? See also "rule of ten".

-Results, Patient characteristics, line 191: "There were balanced between the CV-IMRT". Please rephrase, what do you mean with "There were"
-Page 13, line 247: "the old showed high risk.." Please rephrase: "Higher age was associated..

- Discussion. page 14, line 271: "It depended on a wide range of radiation in case of missing". I do not understand the meaning of this sentence, rephrase!

-276-277: You state that IMRT and chemotherapy have enhanced survival rates and lengthened survival. This is not completely true, at least not for IMRT. Chemotherapy improved survival compared to RT alone, but there exist no high level evidence for a survival benefit compared at least to 3D-RT (not of course compared to 2D-data, that is obvious). Please comment on that,

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

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?
If not, please explain in your comments to the authors.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
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