Reviewer's report

Title: Outcome after Intensity Modulated Radiotherapy for Anaplastic Thyroid Carcinoma

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Reviewer: Volker Rudat

Reviewer's report:

The authors report about the treatment outcome of 13 patients with anaplastic thyroid carcinoma (ATC). Five of 13 patients had distant metastasis at diagnosis. The treatment consisted of IMRT (median total dose of 60 Gy) and concomitant chemotherapy in 11 patients. The median survival was nine months. The authors concluded that IMRT for ATC might be beneficial to improve locoregional control.

Major Compulsory Revisions

The conclusion of the authors is not supported by the data.

It is very difficult to meaningfully compare the results of such a small patient group with data from the literature. In fact, other retrospective studies have reported similar outcomes with multimodality therapy using 3DCRT (e.g. Derbel et al., 2011).

However, why should IMRT improve the local control compared to 3DCRT with similar doses? If the authors belief that IMRT improves the local control because the dose distribution by 3DCRT is suboptimal and better with IMRT they should assess this hypothesis with a dosimetric plan comparison study. Another argument that IMRT may lead to a better local control compared to 3DCRT is the option of dose escalation with IMRT. Dose escalation was not performed in this study.

If we assume satisfactory dose distributions with 3DCRT, we would expect that IMRT may potentially lead to an improved toxicity at comparable doses but not to an improved local control.

The authors should reassess their conclusions from the study.

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests