Reviewer’s report

Title: Intensity-modulated radiotherapy with integrated-boost in patients with bone metastasis of the spine: study protocol for a randomized controlled trial

Version: 1 Date: 23 Oct 2017

Reviewer: Chia-Lin Tseng

Reviewer’s report:

I thank the authors for addressing the majority of my comments/concerns. The authors have made appropriate amendments to the inclusion/exclusion criteria and other changes to the manuscript have addressed most of my concerns. In addition, the volumes to be treated have now been clarified in more detail.

I have only a couple of remaining questions regarding the technical descriptions of the treatment volumes and follow-up:

1) As the spinal cord will be primary dose-limiting structure, how will the spinal cord be delineated if an MRI is not necessarily acquired for every participant? The spinal cord or the thecal sac cannot usually be adequately be visualized on CT alone. Is the spinal canal going to be used as a surrogate for the thecal sac?

2) The SIB arm defines the GTV as only the osteolytic (CT-visible) osseous metastasis. Therefore, presumably the authors recognize that potential osteoblastic metastases and/or marrow changes that are only visible on MRI will not be included in the GTV. This has implications in follow-up as local control will be difficult to define. Ideally, local control in follow-up should be defined by MRI as per SPINO recommendation (Lancet Oncol. 2015 Dec;16(16):e595-603).

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