**Reviewer’s report**

**Title:** MRS-guided HDR brachytherapy boost to the dominant intraprostatic lesion in high risk localised prostate cancer

**Version:** 1  **Date:** 8 January 2010

**Reviewer:** Juanita Crook

**Reviewer’s report:**

This manuscript is well written and provides useful information on an important and very current issue: dose escalation to the dominant intra-prostatic lesion where tumor bulk and potential radio-resistance demand a higher dose for cure than can be safely given to the entire prostate. I have some specific suggestions for clarification and additional information which should be incorporated to enhance the article and make it more useful for those beginning a similar program. I have no compulsory major revisions, only minor revisions.

Page 3, Materials and Methods, paragraph 2: Please add information on the prostate volume (this influences critical organ doses) and the number of diagnostic biopsies which were obtained. Often “sextant” biopsies consist of 12 cores with 2 per sextant which provides a more thorough sampling of the gland. It sounds like only 3 were obtained for this case. It is stated that the patient had “clinical T3a” disease. Was there suggestion on TRUS or MRI of extra-capsular extension or was this purely on the basis of DRE?

Page 4, paragraph 3: The voxel size is quite large (10x10x10 mm = 1 cc). This reviewer is accustomed to using voxels which are 7 mm per side for volume of 0.34 cc. Was there a reason that such a large voxel size had to be used?

Paragraph 4, last line: “MRS doesn’t have sufficient resolution”. This relates partially to the voxel size and a comment should be made to this effect to clarify for the reader.

Page 4, last line: If the prostate dose is 7.5 Gy and the SIB dose to the DIL is 7.5 Gy, why does this state that 20 Gy was given to the DIL? Also what was the margin on the MR-delineated DIL. 20 Gy to the GTV DIL and 15 Gy (7.5 + 7.5) to the PTV DIL would make sense but this should be clarified.

Page 5: please add a reference for the ratio of clonogens being 90:10 for the DIL compared to the prostate.

Page 6, Exteral Beam Plan: Please provide more details such as the beam arrangement, conformal vs. IMRT, prescription point or isodose, etc. It would be helpful to include a distribution for all 3 plans.

Page 7, Discussion: Please add a comment concerning the contribution of MRS to this treatment plan. It seems it only confirmed what was already known from biopsies and anatomic MRI. This related back to the importance of adequate
sampling of the gland at the time of biopsy to minimize the risk of missing a 2nd potentially important lesion which would preclude using this approach.

Table 3: Why is the V100 so low for an external beam plan?
Table 4: Misplaced decimal in the 1st column for the V125. Also, why are the SIB HDR D100 and D90 so high? This relates back to the question concerning page 4, plan C, intended dose 7.5 Gy + 7.5 Gy to DIL.

With these additions and clarifications, I think the reader will find this a very informative and interesting article.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I have no competing interests.