Reviewer's report

Title: Is there a role for anterior zone sampling as part of saturation trans-rectal ultrasound guided prostate biopsy?

Version: 2 Date: 1 January 2014

Reviewer: Wade Sexton

Reviewer's report:

The authors studied ultrasound guided anterior zone (AZ) prostate biopsies as part of a saturation biopsy technique in patients who had previously undergone prostate biopsies for cause (group 1) and in patients with the diagnosis of low-risk prostate cancer undergoing repeat surveillance prostate biopsies (group 2). Specifically, the purpose of the study was to determine whether AZ biopsies would lead to a greater diagnostic yield of cancer (group 1), or clinically significant cancer (group 2). The authors found that AZ biopsies offered little benefit in regards to cancer detection or clinically significant cancer detection compared to standard peripheral zone or transitional zone biopsies alone.

Major Compulsory Revisions:

1. Introduction, methods, discussion. Justify the inclusion of low-risk prostate cancer patients in this study.
   a. Based on data regarding low-risk patients, wouldn’t the risks of sampling the anterior zones (added discomfort, complications, etc.) outweigh potential benefits?
   b. Explain why AS patients underwent repeat biopsy, and more specifically saturation biopsies. Was this part of a protocol generally followed for AS patients? Furthermore, in the methods (second paragraph), it is possible that some of the patients on AS underwent an excessive number of biopsies (median number of biopsies for the entire cohort of patients was 26). Please justify this number of biopsies for AS patients especially if not on a prospective study.
   c. Introduction, last paragraph. Why do the authors believe that patients with low-risk prostate cancer would potentially benefit from AZ cancer detection (over patients in group 1) especially with an understanding of the favorable cancer biology based on the patients’ already established low-risk status? Were the AS patients originally diagnosed at the authors’ facility?

2. Methods section, first and last paragraph. Explain whether this study was performed in a prospective fashion. Were patients accrued to the study prospectively or was this a retrospective review of an institutional practice pattern and thus a review of existing data? If a prospective study, the authors should define whether a power calculation was performed to determine how many patients were needed to address their hypotheses. Furthermore, if this indeed was a prospective clinical study, please indicate whether patients signed an
informed consent document specifically for the study (not just for the biopsy procedure).

3. Table 2. The table should be revised. It is difficult to compare the two groups (with initial viewing, hard to find where group 2 begins and the order of the clinical factors analyzed differs between the groups). Furthermore, clarify whether “TRUS volume” and “prostate volume” are the same?

4. Discussion. Authors should address the probability of sampling error for AZ biopsies in patients with larger volume glands.

5. Discussion section, paragraph 5. Appropriately, the authors discuss the utility of saturation biopsies in the AS setting. Approximately ½ of group 2 patients were apparently taken off of AS based on the results of the repeat saturation biopsy technique reported by these authors.

a. The authors do not discuss the results very well in this group. Namely, what % of patients had higher volume tumors or what % had higher-grade tumors that led to their change from AS to apparently active treatment.

b. Although the authors suggest that the saturation technique is reasonable in AS patients, they should consider as a limitation that prostate cancer risk categories are largely based on standard biopsy techniques and not on saturation biopsies. Thus, although a larger volume of tumor might be identified based on the authors' technique, it might not necessarily translate into different risk given the different diagnostic techniques.

Minor Essential Revisions:

1. Methods section, first and second paragraphs. Define what local “freezing” means. Do the authors mean local “anesthesia”? Freezing should be changed to anesthesia.

Discretionary Revisions: none

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**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