Reviewer's report

**Title:** Relationship between CTX-II and patient characteristics, patient-reported outcome, muscle strength and rehabilitation in patients with a focal cartilage lesion of the knee A prospective exploratory cohort study of 48 patients

**Version:** 1

**Date:** 11 December 2013

**Reviewer:** Brian Pietrosimone

**Reviewer's report:**

I think the current study is interesting and timely. CTX-II is a relevant marker of cartilage breakdown and potentially progression to OA following acute injury. The current study evaluated associations between CTX-II and a variety of demographics and clinical impairments. Additionally, the authors attempted to evaluate differences in CTX-II compared to a small control group. I think that there are a few issues that should be addressed.

**Major / minor essentials**

**Abstract:** The results in the abstract are ambiguous. There are points in the manuscripts when authors state that age was the only relationship while here and in the table quadriceps strength is associated with CTX-II. Also, results of abstract say quad strength and CTX-II correlate and later in that sentence muscle strength is said not to correlate- please address.

**Results section of abstract** provides no correlations and that is the main outcome measure.

**Introduction:** Add Chmielewski et al. ACL article to the introduction when you talk about CTX-II and its ability to predict progression to OA. Also the introduction does not explain why any of these associations should be evaluated or would be important for future treatment of post-traumatic OA.

Provide the timeframes in which you evaluated associations in the purpose statement as well as change scores.

**Methods**

Did patients undergo traumatic injury? Were loose intra-articular bodies present in any patients? Did any patients have surgery in the past 3 months.

Were the 4 patients lost to follow – up have different demographics than the mean of the rest of the sample.

**How was lesion size measured?**

**When were Urine samples taken? Second Void?**

Cite correction methods of CTX-II concentrations.
Controls did not due follow up testing…… is there data to suggest that Urine CTXII is a stable biomarker over time in healthy patients.

Potentially term “CTX-II and baseline characteristics” as “CTX-II and baseline Demographics”

Why not make the history of previous knee surgery a dichotomous variable? Would this change if there is an association between CTX-II and this demographic.

Discussion: On page 10 there is no discussion about the relationship between CTX-II and quadriceps strength. Can you address this issue and explain what this association means at the initial presentation measure.

The first paragraph on page 11 may be a bit strong suggesting that exercise is the reason for the change over time in CTX-II. There is no data to suggest that exercise and not time or healing of the lesion could be the reasons for the decrease in CTX-II over time.

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

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I have no competing interests