Reviewer’s report

Title: Dietary garlic and hip osteoarthritis: evidence of a protective effect and putative mechanism of action

Version: 1 Date: 27 July 2010

Reviewer: Luis Vitetta

Reviewer’s report:

When assessing the work, please consider the following points:

1. Is the question posed by the authors well defined?

The research question posed by the authors is clinically relevant and is associated with a biological plausible mechanism of activity, namely, the possible re-regulation of an OA associated inflammatory process by a specific dietary food pattern that includes such items as the consumption of alliums.

2. Are the methods appropriate and well described?

The successful execution of this study requires the best possible case definition. In this reviewer’s opinion the authors have achieved this outcome as evidenced from the authors own words…

‘analysis of data from twins, through their inherent matching of age, lifestyle and genetic background, allows the direct influence of nutritional components to be distinguished from associated lifestyle factors in the shared environment.’

The in vitro studies have made use of standard available techniques [i.e., cell cultures and cytotoxicity and apoptotic assays; gene expression studies].

3. Are the data sound?

Data have been appropriately analysed.

The use of logistic regression analysis models to investigate food intake as related to a complex trait for this OA study is acceptable.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Data reporting and deposition is of a significant high standard for publication.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

The discussion provides a clear explanation of the data and supports the conclusions stated with a minor clarification amendment [see point 6 below].

6. Are limitations of the work clearly stated?
There is a limitation that the authors have cited and that is the use of a cross sectional design for this study. Nevertheless, using a FFQ assessing at several time points the dietary patterns of consumption has significantly reduced the error that such a design could be subject to. This is achieved by averaging the FFQs at different time points. In this reviewer's opinion, this is a tidy course of action that partially works and achieves a meaningful result. Also this study does further input nutritionally relevant data for the prevention of OA, certainly to at least attract the further attention of public health.

An additional point this reviewer would like to make is that whilst reading the introduction, I noticed that the authors alluded to the possible role of oxidative stress/oxidants as a risk factor for the development and progression of OA. The authors go on to discuss antioxidants in the introduction and although the role of antioxidants is widely postulated, this reviewer does not agree that the development and progression of OA is an oxidative stress/the unbridled action of oxidants problem.

Nowhere in the abstract or in the discussion, do the authors discuss or refer or attribute to an antioxidant effect the results presented in their study. Therefore if it is not an antioxidant effect, what is the specific mechanism that this study is postulating? Could the authors expand on this for further clarity? Given that bioactive compounds can modulate metabolic pathways and hence re-regulate inflammatory processes back to a ‘normal range’. I suggest that this important study paves the way for further studies that may lead to the rescuing of an unbalanced inflammatory process of the joints by compounds that are found in vegetables and fruits.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

The authors have acknowledged other published and unpublished works.

8. Do the title and abstract accurately convey what has been found?

Title and abstract relate directly to the work presented.

9. Is the writing acceptable?

The writing of the article is of a high standard and is indeed acceptable.

**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 declare that I have no competing interests.