Author's response to reviews

Title: Arachidonic acid and cancer risk: a systematic review of observational studies

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Author's response to reviews: see over
Dear Editor,

We appreciate the valuable comments on our manuscript (MS: 1457178702715181). We carefully considered the referee’s comments and prepared this re-revised manuscript. Our point-by-point responses to the comments of the referee 2 are presented below. We deeply appreciate the time and effort required to review our manuscript, and hope that the re-revised manuscript is now suitable for publication in BMC Cancer.

Sincerely yours,

Saki Kakutani
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Responses to referee 2:

MINOR ESSENTIAL REVISIONS

1. Methods, Quality assessment and data extraction, lines 150-153: I understand that studies were too heterogeneous to perform meta-analysis, however the minimal number of studies to perform a meta-analysis taking into account the study design (i.e. prospective cohort studies, case-control studies, etc.). In the 2007 WCRF Report, for instance, minimal numbers were 5 for case-control studies and 2 for prospective cohort studies. Did the authors mean that these numbers could not be reached, neither to perform a “high vs low” meta-analysis? Moreover, what did they mean when they asked that the meta-analytic approach could be misleading for the readers?

Thank you very much for your insightful comment. A meta-analysis was not performed because there were fewer studies with high methodological quality suitable for a meta-analysis than two cohort studies or five case-control studies in all cancer sites of present review. We consider that a meta-analysis contaminated by poor-quality studies may mislead the readers and should not be conducted as you pointed out. The description of methods was not enough and was changed as follows: [Lines 149-152] A meta-analysis was not conducted because of the heterogeneity among studies, particularly subject characteristics and exposure/outcome assessment, and the insufficient number of studies with high methodological quality suitable for a meta-analysis. Therefore, qualitative assessment of ARA intake and cancer risk is presented in this review.
2. Discussion, lines 298-304: now the link between low reporting quality and publication bias is clear, however the authors should be cautious in the assessment of publication bias because they did not perform any statistical test (i.e. Begg's or Egger's test) but only a qualitative evaluation. Please mention this in the text.

As your comment, it is necessary to show clearly how we estimated for publication bias. We changed the Discussion as follows:

[Lines 297-303] Fourth, publication bias based on findings of a significant association could exist, especially in breast and prostate cancers. We evaluated publication bias qualiatively, not using any statistical tests. Most of the significant results were found in the studies with low reporting quality. There is a possibility of publication bias. The results of the studies with low reporting quality may tend to be significant by chance, due to the lack of appropriate design. This suggests that publication bias may affect our review result on breast and prostate cancers, but the effect should be small, because we did not give importance to these studies with low reporting quality.