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The role of nutrition and genetics in thyroid cancer risk

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Letter to the Editor

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Dear Editor,

We read with great interest the recent article by Tao Thi Tran and colleagues, which addresses the association between dietary manganese (Mn) intake and IL1R1 rs3917225 genetic polymorphism with thyroid cancer (TC) risk in a Korean population[(1)]. The authors deserve appreciation for their prospective study, which provides new insights into the interplay between nutrition and genetics in TC aetiology. The findings offer an essential foundation for further nutrition and cancer prevention research.

However, there are some aspects that we think could be further considered to enrich the discussion. One is to focus on environmental influences that might modulate the relationship between dietary Mn intake and TC risk[(2)]. For example, exposure to ionising radiation and a history of benign thyroid nodules are known risk factors to contribute to the development of TC, but they were not measured in this study[(3)]. Including these factors in the analysis may provide a more comprehensive view.

In addition, although the validity of the semi-quantitative FFQ has been validated previously, data collection on Mn intake was conducted only once at the beginning of the study. This approach ignores dietary variations that may occur during the follow-up period[(4)]. Longitudinal studies that measure Mn intake at regular intervals may correct this shortcoming and provide more accurate estimates[(5)].

We were also interested in the specific role of the rs3917225 polymorphism. The finding that the minor G allele exerts a protective effect against TC opens up great potential for genetic-based interventions[(1)]. However, the mechanisms behind this interaction still require further exploration, especially given the role of IL1R1 in inflammatory pathways and its potential to influence broader signalling cascades[(6)].

Lastly, although this study highlights the potential benefits of Mn as a trace element, excessive Mn intake can have toxic effects. Further research is needed to assess the dose–response relationship between Mn intake and TC risk[(7)].

We hope this commentary can broaden the discussion and encourage further research in this exciting area. We congratulate the authors for their significant contributions to nutrition science and public health.

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R. S.: conceptualisation, formal analysis, data curation. Y. L.: conceptualisation, formal analysis, data curation, supervision, writing – original draft, writing – review and editing.

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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