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Letter to the editor: is HIF-1a a viable prognostic indicator in OSCC? A critical review of a meta-analysis study

Rama Jayaraj^{1*}, Chellan Kumarasamy³, Madhav Madurantakam Royam², Arikketh Devi³ and Siddharta Baxi⁴

Abstract

The study performed by Zhou et al. (World J Surg Oncol 15:104, 2017) titled "Clinical and prognostic significance of HIF-1 α overexpression in oral squamous cell carcinoma: a meta-analysis" attempts to highlight hypoxia-inducible factor-1 alpha as a possible prognostic marker in oral squamous cell carcinoma (OSCC). We would like to underline a few points which may affect such a conclusion. The correlations between HIF-1 α expression and tumour size as well as tumour stage are debatable. Further, the subgroup analysis incorporating Australia and Europe into a single subgroup limits the viability of the prognostic analysis of HIF-1 α . We also suggest future studies in the same research area to analyse head and neck squamous cell carcinoma instead of OSCC, to ameliorate the limitations encountered by Zhou et al., due to the scarcity of relevant clinical data and a low number of studies about OSCC.

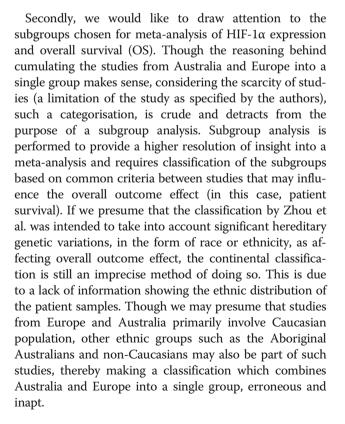
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Dear Editor,

It is well documented and understood that cancer disease progression is intricately linked to the tumour microenvironment [1]. This tumour microenvironment has long been established as a hypoxic environment [2]. Hypoxia-inducible factor-1 alpha (HIF-1 α) expression by cells is a standard physiological response to hypoxic environments and is often observed as a systemic response in high-altitude conditions [3]. Considering the hypoxic nature of the tumour microenvironment, overexpression of HIF-1 α is an established fact. As the hypoxic environment is found within the tumour mass, expression of HIF-1 α increases in proportion to the size and density of a tumour as well as the tumour stage. Zhou et al.'s study [4] establishes an association between tumour size, cancer stage and HIF-1 α expression, but with hypoxia as one of the hallmarks of cancer and HIF-1a expression as a physiological response to hypoxia, we would like to indicate that this attempt at association made by Zhou et al. is perhaps redundant.

* Correspondence: Rama.Jayaraj@cdu.edu.au

¹College of Health and Human Sciences, Charles Darwin University, Ellengowan Drive, Darwin, Northern Territory 0909, Australia Full list of author information is available at the end of the article



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In our opinion, the principal merit of the study is the association achieved between HIF-1 α expression and lymph node status and histological differentiation, which provides valuable clinically relevant information. However, we present our remarks not to highlight the limitations of this study but to merely communicate possible improvements in the concept and design to Zhou et al. and other prospective authors in the same discipline, in case of a planned update to this study in a few years, as well as the scientific community at large.

Abbreviations

HIF-1a: Hypoxia-inducible factor-1 alpha; HNSCC: Head and neck squamous cell carcinoma; OS: Overall survival; OSCC: Oral squamous cell carcinoma

Authors' contributions

RJ and CK conceived this critical review and led the development of the letter to the editor. CK wrote the first draft of the letter and coordinated and integrated the comments from co-authors, RJ, MRM, AD and SB. RJ and CK critically revised and edited the successive drafts of the manuscript. All authors read and approved the final version of the manuscript.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Author details

¹College of Health and Human Sciences, Charles Darwin University, Ellengowan Drive, Darwin, Northern Territory 0909, Australia. ²School of Bio-Sciences and Technology, Vellore Institute of Technology (VIT), Vellore, Tamil Nadu 632014, India. ³Department of Genetic Engineering, Kattankulathur Campus, SRM Institute of Science and Technology, Chennai, Tamil Nadu 603203, India. ⁴Genesis Cancer Care, Bunbury, Western Australia 6230, Australia.

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