



Conceptual, statistical and clinical interpretation of results from a systematic review and meta-analysis of prevalence of cervical HPV infection in women with SLE



ARTICLE INFO

Keywords:

Prevalence
Cervical HPV infection
HPV genotypes
Systemic lupus erythematosus
Publication bias
PROSPERO registration
Between-study heterogeneity
Risk factors
Meta-analysis
And systematic review

To the Editor,

Carrasco and colleagues have recently published a study in the journal, *Autoimmunity Reviews* that has garnered our interest [1]. The study is well conducted and aims to fill a gap in knowledge regarding the prevalence of cervical Human Papilloma Virus (HPV) infection in women suffering from Systemic Lupus Erythematosus (SLE). However, there are a few valid points regarding the study discussed in this letter, which we believe, need to be addressed by the authors.

1. Traditional and SLE-related risk factors

The authors mention that their secondary objective, in conducting the study, is the evaluation of the relationship between cervical HPV infection and traditional and SLE-related risk factors for cervical HPV infection in patients. However, even though SLE-related risk factors have been discussed, the “traditional” factors and their relation to risk of cervical HPV infection has not been addressed in this study.

2. Association between cervical HPV genotypes and SLE in women

Furthermore, we believe that not considering the different cervical HPV genotypes (Low risk, High risk and Possible/Probably high risk) in this study is a missed opportunity. Investigating the prevalence of infection in SLE patients based on the HPV genotype would have provided valuable data for informing clinical decision making as well as helping future research [2].

3. Publication bias of the included studies examining the prevalence of cervical HPV infection in SLE women

We also observed that the publication bias had not been adequately

assessed in Carrasco et al.'s study. The authors have assessed publication bias using the rank correlation test for funnel plot asymmetry, but they have not adjusted for possible missing or small studies. We recommend the use of ‘Orwin’s Fail-safe N test’ and ‘Duval and Tweedie’s Trim and Fill calculation’. These tests adjust for missing and small studies that may contribute to the publications bias, by the process of the imputation of missing studies, thereby ameliorating issues that may arise due to publication bias [3,4].

4. Assessment of between-study heterogeneity

We also suggest the use of the Tau^2 parameter for assessing between-study heterogeneity. The I^2 parameter for assessment of between-study heterogeneity, used in this study, does not take into account the threshold effect. Whereas, the Tau^2 parameter, which is the estimated variation between the effects for test accuracy observed in different studies, does consider the threshold effect [5,6].

5. Registration of systematic review and meta-analysis protocol

Furthermore, the use of the PROSPERO database for registering of systematic reviews and meta-analysis protocols, before conducting the study, is also highly recommended. Registering of study protocols on the PROSPERO database allows for easy replication of the study under similar parameters, and also helps expedite future research [6].

We believe that these points and suggestions will only serve to benefit the study conducted by Carrasco and colleagues. We hope that this letter will also serve to ameliorate the common issues faced when systematic reviews and meta-analysis studies are conducted.

DOI of original article: <https://doi.org/10.1016/j.autrev.2018.09.001>

<https://doi.org/10.1016/j.autrev.2018.12.003>

Received 21 December 2018; Accepted 27 December 2018

Available online 11 February 2019

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Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Competing interests

None has been declared by the authors.

Funding

No funding support received to conduct and prepare this study.

Authors' contributions

RJ is principally conceived of this review and led the growth of the letter to the editor. Both RJ and CK wrote the first draft of the letter, and critically revised and edited sequential drafts of the manuscript. RJ and CK read and approved the final version of the manuscript.

Acknowledgements

Not applicable.

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