

AB004. All-cause mortality of seasonal influenza vaccination among the elderly: a systematic review and meta-analysis

Hon Ting Terence Tsang, Chiu Hang Mok

Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong, China

Correspondence to: Chiu Hang Mok, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong, China. Email: mokch@hku.hk.

Background: Despite the recommendation of seasonal influenza vaccination (SIV) for the elderly, vaccine effectiveness (VE) remains doubtful among this age group. Evidence regarding VE is needed for justification and evaluation. We sought to develop pooled VE estimates using all-cause mortality as an outcome measure to provide better insights for VE evaluation.

Methods: A systematic review was performed to identify observational studies reporting all-cause mortality as an outcome measure for the VE of SIV. We searched MEDLINE (Ovid) and EMBASE from inception to June 2020. Meta-analysis with random effects model for all-cause mortality was conducted. Heterogeneity and publication bias were assessed.

Results: We identified 8 observational studies for systematic review and meta-analysis from a total of 1,782 studies in the initial search. The pooled VE estimate of SIV among the elderly considering all-cause mortality as the outcome was 22% [95% confidence interval (CI): 12% to 31%, $P < 0.05$]. Significant heterogeneity ($I^2 = 95.7\%$) was demonstrated. A large P value (0.969) in Egger's test and symmetrical funnel plot were observed.

Conclusions: Pooled VE estimate of SIV considering all-cause mortality as the outcome was derived. The heterogeneity of our study could be due to differences

among study characteristics and designs, vaccine strain match, underlying conditions and previous vaccination status. The funnel plot suggests no significant publication biases, while this study may still be prone to other possible biases such as reporting bias. Overall, a review of current evidence demonstrated significant VE of SIV among the elderly by reducing all-cause mortality, which could be utilised in the encouragement of SIV uptake by public health officials in the future.

Keywords: Influenza; vaccination; systematic review; meta-analysis

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: Both authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

doi: 10.21037/jphe-21-ab004

Cite this abstract as: Tsang HTT, Mok CH. All-cause mortality of seasonal influenza vaccination among the elderly: a systematic review and meta-analysis. J Public Health Emerg 2021;5:AB004.