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LETTER TO THE EDITOR

Authors' Reply to Comment on "Cost-Effectiveness Analysis of Herpes Zoster Vaccination in 50- to 85-Year-Old Immunocompetent Belgian Cohorts: A Comparison Between No Vaccination, the Adjuvanted Subunit Vaccine, and Live-Attenuated Vaccine"

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Dear Editor,

We thank Giannelos et al. [1] for thoroughly reading our manuscript [2]. We address their two comments in the following paragraphs.

Firstly, Giannelos et al. [1] comment that our calculation of the HZ incidence rate in the immunocompetent population is 'simplistic and biased'. Instead, they propose an alternative way of calculating the incidence of HZ in the immunocompetent older Belgian population. Note however that in our model we use two separate rates matching data availability at the time of the study: (i) the HZ hospital admission rate and (ii) the rate at which individuals visit a GP at least once for an HZ episode. We do not use the overall HZ incidence rate on which Giannelos et al. base their comment on. We note that Giannelos et al. do not provide or refer to the data necessary to perform the calculation they propose, that is, data describing the 'true' age-specific proportion of immunocompetent individuals in the population and the risks of HZ in the immunocompromised and in the immunocompetent population, respectively. We are not aware of such data for Belgium. However, we had access to a dataset on HZ patients, describing in detail any comorbidities occurring in both hospitalized and ambulatory elderly patients in Belgium. This allowed us to obtain the conditional probability of immunocompetence given a HZ hospitalization or HZ ambulatory episode. Note that this probability implicitly incorporates a different risk of being hospitalized for HZ in immunocompromised compared with immunocompetent individuals. Indeed, if immunocompromised individuals experience a higher risk of being hospitalized for HZ than immunocompetent individuals, this will be reflected in a higher ratio of HZ hospitalizations occurring in immunocompromised versus immunocompetent individuals, as compared with the ratio of immunocompromised versus immunocompetent individuals in the total population. We acknowledged in our paper that our calculation method has limitations, however we do not agree with Giannelos et al. that it is biased. Also, the straightforward method proposed by Giannelos et al. does not offer a valid alternative given the lack of data to do the actual calculation.

Secondly, the authors object to the fact that, along with a head-to-head comparison between both vaccines (RZV and ZVL), we estimated the cost effectiveness of RZV versus no vaccination in immunocompetent people, using data pertaining to immunocompetent people. Indeed, this was explicitly stated in the title, abstract and main text of our paper. As such, our results do not underestimate the impact of RZV on the immunocompetent target group. Clearly, as RZV (in contrast to ZVL) is safe and effective in immunocompromised persons, it may very well be more cost effective in immunocompromised than in immunocompetent persons, ceteris paribus. Our paper does not claim to provide any policy advice about this, other than indirectly suggesting that RZV's deployment in immunocompromised people requires the programme's reach and target group to be well defined, as it would not be cost effective at current prices in the immunocompetent persons it may spill over to. A cost-effectiveness analysis of an inclusive programme for both

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immunocompetent and immunocompromised adults aged over 50 years would be informative to advise policy on RZV. Such an analysis would need to compare relatively narrow age groups over 50 years of age, because the proportion of immunocompromised persons is age specific, as is the associated preventable burden of disease.

Declarations

Funding This work was supported in part by Research Foundation-Flanders (JB), the Methusalem financing program of the Flemish government (ZP). The funding agreements ensured the authors' independence in designing the study, interpreting the data, and writing and publishing the report.

Conflict of interest In 2019, P.B. participated in four half-day meetings organized by Pfizer Belgium. These meetings led to the development of a summary paper that was published in 2020 (Annemans et al., Value in Health 2020). For his participation, the University of Antwerp received compensation. P.B. received no personal fee for his participation. The University of Antwerp received grant money from the European Commission's IMI programme (RESCEU; 2017–2021) to fund research on RSV conducted in The Centre for Health Economics Research & Modelling Infectious Diseases (CHERMID), which P.B. heads. The IMI programme involves many pharmaceutical companies in a public–private partnership. CHERMID also collaborated with the Centre for the Evaluation of Vaccination on a study on pneumococcal carriage in children (2015–2019), and that study was supported by a grant from Pfizer. In the period 2009–2019, the University of Antwerp received for its part-time "chair in evidence-based vaccinology" unrestricted grants from Pfizer and GSK. P.B. is promotor of the chair, but not the chair holder. By definition, the research agenda supported by the chair holder is determined and executed completely independent from the sponsors. The chair is no longer supported by private sponsors since January 2020.

Ethics approval Not applicable.

Consent to participate Not applicable.

Consent for publication Not applicable.

Availability of data and material Not applicable.

Code availability Not applicable.

Author contributions PB and JB prepared and approved the final version of the letter.

References

1. Giannelos N, Libérée Nishimwe M, Lecrenier N. Comment on Cost-effectiveness analysis of herpes zoster vaccination in 50- to 85-year-old immunocompetent Belgian cohorts: a comparison between no vaccination, the adjuvanted subunit vaccine, and live-attenuated vaccine. Pharmacoeconomics. 2022. https://doi.org/10.1007/s40273-022-01184-0.
2. Pieters Z, Ogunjimi B, Beutels P, Bilcke J. Cost-effectiveness analysis of herpes zoster vaccination in 50- to 85-year-old immunocompetent Belgian cohorts: a comparison between no vaccination, the adjuvanted subunit vaccine, and live-attenuated vaccine. Pharmacoeconomics. 2022;40(4):461–76.