



Letter to the Editor

Response to Morimoto and Takeishi 2018



Dear Editor,

We read with interest the recent article by Morimoto and Takeishi titled “Change in the efficacy of influenza vaccination after repeated inoculation under antigenic mismatch: A systematic review and meta-analysis” [1], and we would like to note some additional findings of relevance to the methods and discussion. First, for the two live-attenuated influenza vaccine (LAIV) studies contributing most to the authors’ observation of lower LAIV efficacy against mismatched strains with revaccination versus primary vaccination, we assume that the authors estimated the number of illnesses due to mismatched strains by subtracting the number of illnesses due to matched strains from the total number of influenza illnesses. The estimates derived by this calculation would include both mismatched strains as well as strains for which determination of match could not be made, and specific conclusions regarding efficacy for mismatched strains upon revaccination should be viewed with caution as a result. Second, in the discussion, the authors state that this lower efficacy for mismatched strains with repeat vaccination might help explain observations of reduced effectiveness of LAIV for H1N1pdm09 strains during recent flu seasons. The H1N1pdm09 strains that circulated during these seasons, however, were considered matched to the vaccine strain and, as the authors show, the relative risk of infection with matched influenza strains is lower following a second season revaccination with LAIV. Rather than being attributable to the effects of revaccination, new evidence suggests that the reduced effectiveness of LAIV against H1N1pdm09 strains seen in recent influenza seasons was due to the reduced replicative fitness of LAIV H1N1pdm09 vaccine strains [2]. Third, a large, randomized study of children conducted in 2004–2005 demonstrated superior efficacy for LAIV compared to inactivated influenza vaccine (IIV),

and the efficacy findings were similar among children previously vaccinated with IIV and those not previously vaccinated [3].

1. Disclosures

Raburn Mallory is an employee of MedImmune/AstraZeneca and receives grants of stock in the company; Chris Ambrose is an employee of AstraZeneca and receives grants of stock in the company.

References

- [1] Morimoto N, Takeishi K. Change in the efficacy of influenza vaccination after repeated inoculation under antigenic mismatch: a systematic review and meta-analysis. *Vaccine* 2018;36(7):949–57. <https://doi.org/10.1016/j.vaccine.2018.01.023>.
- [2] Mallory RM. Results of randomized trial of a new H1N1 LAIV Strain in US Children. In: Presented at: Advisory Committee on Immunization Practices meeting, February 21; 2018; Atlanta, GA. Available at: <https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2018-02/flu-05-Mallory-508.pdf> [accessed May 22, 2018].
- [3] Belshe RB, Toback SL, Yi T, Ambrose CS. Efficacy of live attenuated influenza vaccine in children 6 months to 17 years of age. *Influenza Other Respir Viruses* 2010;4(3):141–5. <https://doi.org/10.1111/j.1750-2659.2009.00124.x>.

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