CORRESPONDENCE

Targeted Vaccine Selection in Influenza Vaccination

Prof. Dr. med. habil. Peter Wutzler, Prof. Dr. med. Roland Hardt,
Prof. Dr. med. Klaus Wahle, Prof. Dr. med. Markus Knuf in volume 47/2013

Dr. med. Martin Blohm
Neonatalogie und Pädiatrische Intensivmedizin

Dr. med. Dennis Klinkenberg
Pädiatrische Hämatologie und Onkologie
Universitätskinderklinik Hamburg-Eppendorf
m.blohm@uke.de

Conflict of interest statement
The authors declare that no conflict of interest exists.

High Vaccination Rate Is Crucial

The article by Wutzler et al. (1) on targeted vaccine selection in influenza vaccination is of major importance in view of the imminent flu season. During the 2012/2013 flu season, the pediatric hospital at Hamburg-Eppendorf's University Medical Center saw three deaths in children who had not been vaccinated in accordance with the recommendations from the Standing Committee on Vaccination Recommendations (STIKO), although they had severe underlying disorders. Wutzler et al say that the influenza rate can be lowered to 8.2% when using the conventional influenza vaccine and to 4.2% when using the attenuated live vaccine, which in theory corresponds to a 92% protective effect for the conventional vaccine compared with 96% for the newer, attenuated live vaccine. Regarding children up to age 4 living in Germany, the following theoretical calculation could be made with regard to mortality resulting from omitting the flu vaccination: number of children in the age group (about 2.6 million, according to Germany's Federal Statistical Office) $\times$ excess hospital admission rate during the flu season 2012/2013 of 140/100 000 (2) $\times$ mortality in children with influenza admitted to hospital of 1.0–1.1% (3) $\times$ protective effect conferred by vaccination (conventional vaccine 92%, attenuated live vaccine 96%) (1) = 2.6 million $\times$ 140/100 000 $\times$ 0.01 $\times$ 0.92 or 0.96 = about 33.5 or 35 children. Although this simplified calculation does not consider several epidemiologically relevant factors—such as contagiousness, virulence, the fact that STIKO recommends vaccination only for children with chronic disorders, and the fact that the attenuated live vaccine has license approval only for children older than 2 years—it still highlights that, in order to minimize the risk, the aim of a vaccination rate that is as high as possible is crucial for pediatric risk groups too, whereas the age-appropriate optimized vaccine yields additional benefit only by degrees. Parents should not be prompted to refuse the vaccination on the basis of insecurities caused by discussions of which might be the better vaccine.

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In Reply:

We thank Drs Klinkenberg and Blohm for their contribution, which points out the high risk for cases of influenza with lethal outcomes in children with chronic comorbidities and which rightly underlines the need of annual flu vaccination in children. In order to achieve the high vaccination rate that is required to protect pediatric risk groups, we also make the case for a general recommendation for vaccinating children. However, we think that our colleagues' explanations of the protective effect of the flu vaccines are based on a misinterpretation. The morbidity rates of 4.2% (attenuated live vaccine) and 8.1% (conventional vaccine) relate to the respective total cohort of vaccinated persons, of whom 10–30% contract influenza every year. Morbidity rates of unvaccinated comparator cohorts were not included in the studies analyzed in the meta-analysis (1). In our study, we did not go into detail about the effectiveness of the attenuated live vaccine compared with placebo, for reasons of space. Depending on the degree of match between the vaccine viruses and circulating wild viruses, this is 78–83% (1). Unfortunately, this vaccine cannot be used in children younger than 2 years because of its side effect profile. As conventional vaccines are at best of moderate effectiveness in this age group, in order to protect these children high immunization rates among contacts should be aimed for, which may result in herd immunity (2).

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Prof. Dr. med. Peter Wutzler
Universitätsklinikum Jena
Institut für Virologie und
Antivirale Therapie
peter.wutzler@med.uni-jena.de

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