Published in : Vaccine (2004), vol. 22, iss. 25-26, pp. 3225-3226
Status : Postprint (Author's version)

Letter to the Editor

Rentier B [1] , Gershon A A [2]

[1] *Virology and Immunology, B23, University of Liege 4000 Sart Tilman, Liege, Belgium*

[2] *Columbia Presbyterian University college of Physicians and Surgeons, New York, NY, USA*

The Oka varicella vaccines are more equal than different

Dear Sir,
We would like to react to a recent publication of Lau et al. [1] that reports a comparative study of the reactogenicity and immunogenicity of Oka/Merck's and GSK's Varilrix™ varicella vaccines.
The study confirmed that both Oka-derived vaccines were well tolerated with a similar rate of local and systemic adverse events during the follow-up period, however, immuno-genicity of the vaccines was found to be different.
The authors postulate that this difference is due to attenuation processes and/or genetic variations between the vaccine strains caused by differences in the passage history of the seed viruses.
First of all, the Oka/RIT passage history for the new refrigerator-temperature stable formulation (commercially available since 1996) is no longer the one described in the 1985 paper the authors made reference to [2]. In the actual process, the strain does no longer undergo limiting dilution clonings (GSK, personal communications). Any consideration on differences in vaccine efficacy based on the difference in passage history appears thus irrelevant.
Secondly, the serological method, GpELISA, used in this study to compare the antibody response to the Oka strains, is not a universally accepted test but a proprietary undisclosed method owned by the manufacturer of one of the two vaccines used in the comparative trial. Antibody titers measured by GpELISA have been shown to correlate with subsequent risk of breakthrough varicella for the Oka/Merck vaccine and not with the Oka/RIT vaccine, hence any differences in the immune response measured with GpELISA should not be translated into differences in vaccine efficacy.
Thirdly, the observation that the Oka/Merck and Oka/RIT strains differ in a locus of the gene 62 must be interpreted with caution as there is, to our knowledge, no proven correlation between any genetic variation and the immunogenecity or efficacy of the corresponding Oka vaccine.
Finally, since Oka/RIT vaccine's immunogenicity and efficacy have been demonstrated in protective clinical studies and is comparable to that of Oka/Merck, putative genetic variation is likely to be of little clinical relevance.
Indeed, with respect to the difference in seroconversion rates between the vaccines, as observed by Lau et al., we would like to refer to extensive clinical data of the Oka/RIT vaccine as mentioned in the prescribing information. In all clinical trials where the Oka/RIT vaccine has been administered to subjects aged from 9 months to 12 years, the overall seroconversion rate was >98%, and antibody persistence was shown for at least 7 years post-vaccination [3]. In addition, efficacy was demonstrated in a study by Vesikari et al., [4] in 10–30 month-old-children during a follow-up of an average of 29.3 months. In this study, the protective efficacy was 100% against severe cases of varicella (>30 vesicles). Against varicella of any severity (mild case with at least one vesicle or papule) protective efficacy of the Oka/RIT vaccine was 88%. Protective efficacy remained 97% against typical varicella and 85% against any varicella and the follow-up confirmed the mild nature of breakthrough cases of varicella in young vaccinees [5] . These figures are very similar to those obtained with the Oka/Merck vaccine in the USA. Serological correlates of protection are very useful, however, a single comparative study of seroconversion rates, as described by Lau et al., can not overrule the preceding results of real efficacy trials.
Based on the above public health point of view, the vaccines can be considered more equal than different and the minor differences reported by Lau et al. should not impair the uptake of Oka-derived varicella vaccines or compromise the implementation of universal vaccination campaigns.
Today, varicella is more and more considered a justifiable target for prevention through vaccination. Strong health and socio-economic data have been produced supporting the need to introduce universal varicella vaccination for children. The promising data on vaccine effectiveness and the impact on the epidemiology of varicella, generated after extensive use of varicella vaccine in USA, has prompted a renewed interest of the scientific community for varicella vaccination, possibly leading to a reassessment of the vaccination policies in Europe and other countries.
In this context, we question the practical relevance of the hypothesis by Laus et al. of a difference in

seroconversion rates between the Oka vaccines, when applied to routine vaccination.

References

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