

Measles vaccines: WHO position paper - 28 August 2009

Grading of scientific evidence in support of key recommendations

Table III: Safety and immunogenicity in HIV-infected children

Question: Are measles containing vaccines (MCVs) safe and immunogenic when administered to HIV-infected children up to the age of 15 years?

Settings: Global

Conclusion: Measles immunization is not associated with an increased risk of serious adverse events, but may be less immunogenic in HIV- positive as compared to children not infected with HIV (Very low level of scientific evidence).

Quality assessment						Summary of Findings	Importance
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Quality	
Evidence that MCVs are safe in HIV- positive children							
19	Observational	Serious ¹	No serious	No serious	No serious	Very low	Critical
Evidence that MCVs are immunogenic in HIV- positive children							
26	Observational	Serious ²	No serious	Serious ³	No serious	Very low	Critical

¹ There a relatively short follow-up period in the prospective studies.

² No study reported on all quality variables examined.

³Very little data on a direct comparison between vaccinated and unvaccinated HIV infected children.

This table is based on the systematic review and meta-analysis of the safety and immunogenicity of measles vaccine in HIV-infected children that was recently conducted by Scott P et al, 2009. For assessment of immunogenicity, 25 studies with comparison groups (involving 4519 vaccinated children) and 1 case report were found eligible for inclusion. For adverse event data. 13 studies without comparison groups (involving 690 vaccinated children) were also examined.

Most studies providing data on safety reported no serious or severe adverse events. In prospective studies that allowed comparisons between HIV-infected and HIV-exposed, but uninfected or HIV-unexposed children, there did not appear to be an increased risk of serious adverse events in HIV-infected children.

Assessments of measles antibody levels suggested that measles vaccination at six months of age resulted in similar levels of protection in HIV-infected and HIV-unexposed (combined RR 1.05, 95% CI 0.83-1.34, heterogeneity I² 65.7%, P=0.06) or HIV-exposed but uninfected children

(combined RR 0.91, 95% CI 0.80-1.04, heterogeneity I^2 0.0%, $P=0.46$). By nine months of age, fewer HIV-infected children responded to measles vaccine than HIV-unexposed (combined RR 0.79, 95% CI 0.61-1.02, heterogeneity I^2 81.5%, $P=0.005$) or HIV-exposed but uninfected children (combined RR 0.70 (95% CI 0.56-0.88) heterogeneity I^2 79.6%, $P<0.001$). Two studies suggested that the antibody response in HIV-infected children waned faster than in HIV-uninfected children.

There were scant data about the effects of highly active antiretroviral therapy (HAART) on responses to measles vaccination. Data relating to clinical efficacy were also scarce.

References

Scott P, Moss JW, Gilani Z, Low N. Safety and immunogenicity of measles vaccine in HIV-infected children: a systematic review and meta-analysis. Report presented to the Global Advisory Committee on Vaccine Safety (GACVS), World health Organization, June 2009. (<http://www.who.int/wer/2009/wer8432.pdf>).