Evidence for breakdown of varicella vaccine

- A total of 52 relevant publications were identified (48 in original search and abstract), with 4 articles published in the February 2010 issue. Of these, 19 publications included results from vaccines which had received two doses of vaccine.

Incidence of breakdown varicella

- Nineteen publications (16 in abstract) did not show any drop in protection according to the expected time frame.

Evidence for PVF after one dose of varicella vaccine in children

- Differentiation between PVF and SVF in outbreak studies.

Evidence for SVF

- Two publications (1 abstract) showed breakdown varicella rates of 0.4% in 23 outbreak settings, with no consistent trend between breakdown varicella rate and coverage according to publications Table 1

Evidence for PVF

- Vaccine effectiveness (VE) estimates varied from 20–100% in these publications, with no consistent trend between rates of breakthrough varicella and time since vaccination.

Differentiation between PVF and SVF in outbreak studies.

- Nine publications indicated an increased risk of breakthrough varicella with time (Table 3), where an increased risk of breakthrough varicella is an indicator of PVF, and the choice of assay may affect the result.

PVF is the failure to mount a protective immune response after vaccination.

- SVF is the gradual loss of immunity after an initial immune response over a period of 6–8 weeks, and then remains stable.

PVF, and the choice of assay may affect the result.

- SVF is the failure to mount a protective immune response after vaccination.

REFERENCES


CONCLUSION

- The assays and thresholds used to assess varicella vaccine responses are not necessarily predictive of vaccine failure.

- Among recipients of one dose of varicella vaccine, the literature indicates a relatively high rates of PVF and limited continuing evidence of SVF. Furthermore, vaccine efficacy is effectiveness decreases after the first year post-vaccination and then remains stable, a pattern predictive of PVF.

- This suggests that the second dose of varicella vaccine should be given as close to the first as possible (minimum of 4 weeks), to prevent a large number of people remaining vulnerable to infection and reduce the risk of breakthrough varicella.