GRADE Table 5. Risk of febrile seizures after first dose of MMRV in immunocompetent children (9months to 12 years)

Population: Immunocompetent children (9 months to 12 years)
Intervention: MMRV (one dose)
Comparison: MMR + V (one dose)
Outcome: Febrile seizures

In immunocompetent children (9 months to 12 years of age), what is the evidence for the extent (RR or attributable risk) of febrile seizures in those receiving varicella vaccination with MMRV versus MMR + V?				
			Rating	Adjustment to rating
Quality Assessment	No. of studies/starting rating		3/ observational[1]	2
	Factors decreasing confidence	Limitation in study design	None serious	0
		Inconsistency	None serious	0
		Indirectness	None serious	0
		Imprecision	None serious	0
		Publication bias	None serious	0
	Factors increasing confidence	Large effect	Not applicable	0
		Dose-response	Not applicable	0
		Antagonistic bias and confounding	Not applicable	0
	Final numerical rating of quality of evidence			**2**
Summary of Findings	**Statement on quality of evidence**			**Our confidence in the estimate of the effect on the health outcome is limited**
	Conclusion			**The risk of febrile seizures 5-12 days after the first dose of combined measles, mumps, rubella, varicella (MMRV) vaccination in immunocompetent children is 2 fold higher than using non-combined vaccination (MMR+V). This resulted in one additional febrile seizure for every ~2300-2700 children vaccinated with MMRV vs MMR + V. This higher risk was documented in studies among children 12 (9) to 23 months of age.**

[1] 3 observational studies indicate an elevated risk of febrile seizures 7-10 days (age 12-23 months) (RR: 1.98; 95% CI :1.43-2.73) and 5-12 days (age 12-60months) (RR: 2.2; 95% CI: 1.04-4.65) following the first dose of immunization with MMRV compared to MMR+V (Klein et al. 2010; Jacobsen et al. 2009). In the period 5–12 days after immunization, the adjusted ORs of the primary endpoint for immunization with MMRV vaccine relative to MMR were 4.1(95% CI 1.3–12.7) (Schink et al.2014).

Reference List

(1) Jacobsen SJ, Ackerson BK, Sy LS, Tran TN, Jones TL, Yao JF, et al. Observational safety study of febrile convulsion following first dose MMRV vaccination in a managed care setting 28. Vaccine 2009 Jul 23;27(34):4656-61.

(2) Klein NP, Fireman B, Yih WK, Lewis E, Kulldorff M, Ray P, et al. Measles-mumps-rubella-varicella combination vaccine and the risk of febrile seizures 8. Pediatrics 2010 Jul;126(1):e1-e8.

(3) Schink T, Holstiege J, Kowalzik F et al. Risk of febrile convulsions after MMRV vaccination in comparison to MMR or MMR+V vaccination. Vaccine 2014; 32: 645-650