

Post vaccination febrile seizures: Clinical severity and outcome data is reassuring

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Background: Febrile seizures (FS)



- Most common type of seizure in childhood
 - 1 in 30 children
 - 6 months – 6 years of age
 - Usually brief and self resolving
 - 30% will have a second episode
 - No known long term neurological effect



- Associated with
 - Whole cell pertussis vaccine
 - Measles containing vaccine
 - Influenza vaccine

- Decrease parent and provider confidence on vaccine safety

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Aims



1. Compare the profile of children with vaccine proximate FS (VP-FS) to non-vaccine proximate (NVP-FS)
2. Compare the seizure severity and outcomes of VP-FS to NVP-FS cases



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Methods: Participant recruitment



- 1 May 2013 to 30 June 2014
- Children < 6 years
- Presenting with their first FS at 1 of 5 PAEDS sites

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Methods: Data collection



- Medical and vaccination history
- Clinical features on presentation
- Management
- Clinical outcome

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Methods: Case definition



- VP-FS
 - Seizure, associated with fever reported either by a parent and/or health provider
 - Occurring
 - 0 - 2 days following inactivated vaccine
 - 5 - 14 days following live vaccine
 - 0 - 14 days following combined live and inactivated vaccine
- NVP-FS
 - FS outside above defined period following vaccination

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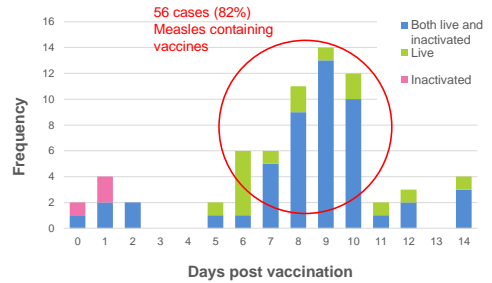
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Results: Participant details



	NVP-FS (%)	VP-FS (%)	p
n	1027 (92.8%)	68 (6.2%)	
Age (median months, IQR)	20.4 (14.2-28.8)	13.1 (12.4-17.3)	<0.001
Sex (male)	557 (54.2%)	30 (44.1%)	0.11
Past medical history			
Afebrile seizure	46 (4.5%)	0 (0.0%)	0.07
Meningitis/encephalitis	12 (1.2%)	0 (0.0%)	0.37
Neurological disorder	44 (4.3%)	1 (1.5%)	0.52
Autism	4 (0.4%)	0 (0.0%)	1.00
Family history			
Febrile seizure	369 (35.9%)	29 (42.6%)	0.26
Epilepsy	184 (17.9%)	8 (11.8%)	0.20

Results: Timing of VP-FS by vaccine type



Results: Seizure severity and outcome



	NVP-FS (n=1027) n (%)	VP-FS (n=68) n (%)	aOR (95% CI)	p
Admission details				
Length of stay > 1 day	149 (14.5%)	13 (19.1%)	1.37 (0.72-2.63)	0.34
ICU admission	24 (2.3%)	1 (1.5%)	0.64 (0.08-4.90)	0.67
Death	1 (0.1%)	0 (0.0%)	NA	0.98
Seizure details				
Duration > 15 min	121 (11.8%)	11 (16.2%)	1.40 (0.70-2.79)	0.34
Repeat seizures within 24h	107 (10.4%)	6 (8.8%)	0.71 (0.30-1.70)	0.44
Antiepileptic use				
On presentation	92 (9.0%)	10 (14.7%)	1.92 (0.93-3.96)	0.08
On discharge	44 (4.3%)	3 (4.4%)	1.63 (1.47-5.64)	0.44
Readmission with FS				
Within 7 days	11 (0.1%)	0 (0.0%)		

NO difference in severity or outcome

*Multivariate analysis adjusted for age group (<12, 12-24, 24-36, ≥36 months), gender, history of previous afebrile seizure

Conclusions



- VP-FS account for small proportion of first FS presenting to hospitals in Australia
- No difference in seizure severity between VP-FS and NVP-FS
- Majority are associated with measles containing vaccine



Future studies



- Genetic markers
- Developmental outcomes



Collaborators

