SAFETY OF RE-IMMUNIZATION OF PEDIATRIC PATIENTS WITH A PAST HISTORY OF IMMUNE THROMBOCYTOPENIC PURPURA

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Introduction

Immune thrombocytopenic purpura (ITP) is known to be associated with receipt of certain vaccines, particularly the measles-mumps-rubella (MMR) vaccine. However, the safety of re-immunization for pediatric patients with a past history of ITP is unclear. In this survey, we assessed the risk of ITP recurrence among pediatric patients with a past history of ITP upon re-immunization.

Study Population and Methods

We conducted a retrospective chart review and telephone interviews with parents of children younger than 15 years of age who had been diagnosed with ITP in our hospital between 2010 and 2015, regardless of precedent vaccination history. Vaccine-associated ITP was defined as a clinical condition in which platelet counts were less than 100,000/ μ L within 28 days of immunization.

Figure 1. Enrollment

Results

Table 1. Baseline Characteristics

	Vaccine-associated ITP (n=14; 46.7%)	Non-vaccine associated ITP (n=16; 53.3%)	p value
Age at initial diagnosis of ITP, median years (IQR)	1.25 (0.75 2.5)	4.25 (2.94 6.25)	0.0053
Sex, male, N (%)	9 (64)	10 (62.5)	1
Platelet count at initial diagnosis of ITP, median (IQR), per μ L	10,500 (4,250; 14,750)	7,000 (3,750; 13,325)	0.723
Diagnosis type, N (%)			0.642
Acute	11 (78.6)	14 (87.5)	
Chronic	3 (21.4)	2 (12.5)	
Period between initial diagnosis of ITP to re-immunization, median months (IQR)	8.5 (2.5; 15.25)	5.5 (3.75; 12.75)	0.707
Platelet count at re-immunization, Median (IQR), per μ L	199,500 (69,750; 295,000)	200,000 (127,000; 267,750)	0.95
Recurrent ITP cases after re-immunization, N (%)	2 (14.3)	0 (0)	0.209

Figure 2-1. Type of re-immunized vaccines for vaccine-associated ITP patients

134 doses / 14 patients

Figure 2-2. Type of re-immunized vaccines for non-vaccine associated ITP patients

110 doses / 16 patients

Table 2. Recurrent ITP cases

	Case 1	Case 2
Sex	male	female
Age at initial diagnosis of ITP	1y3m	3y11m
Suspected trigger of initial ITP	MR vaccine	JE vaccine
Diagnosis type	Acute	Chronic
Age at ITP recurrence	2y4m	5y7m
Period between initial diagnosis of ITP to re-immunization, months	13	20
Suspected trigger for ITP recurrence	DTaP vaccine	JE vaccine
Platelet count at re-immunization, per μ L	150,000	43,000
Minimal platelet count after re-immunization, per μ L	6,000	14,000
Outcome	Improved without additional medical therapy	Improved without additional medical therapy

Conclusions

Our study suggests that re-immunization of pediatric patients with a past history of immune thrombocytopenic purpura is typically safe.

BCG: Bacillus Calmette-Guérin vaccine, DTaP: Diphtheria Tetanus acellular Pertussis vaccine, DTaP-IPV: Diphtheria Tetanus acellular Pertussis and Inactivated Poliovirus vaccine, HepB: Hepatitis B vaccine, Hib: *Haemophilus influenzae* type b vaccine, IIV: Inactivated Influenza vaccine, IPV: Inactivated Poliovirus vaccine, JE: Japanese encephalitis vaccine, MR: Measles Rubella vaccine, OPV: Oral Poliovirus vaccine, PCV7: 7-valent Pneumococcal conjugate vaccine, PCV13: 13-valent Pneumococcal conjugate vaccine