1060. Persistence of Bactericidal Activity at 4 Years After 2 Primary Doses of a Recombinant, 4-Component, Meningococcal Serogroup B Vaccine (4CMenB) and Response to a Booster Dose in Adolescents and Young Adults

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Background. This phase 3b, open label, controlled, multi-center, extension study (NCT02446743) assessed the persistence of bactericidal activity at 4 years post-primary vaccination with a recombinant, 4-component, meningococcal serogroup B vaccine (4CMenB) in adolescents who participated in the parent study NCT01423084 and their response to a booster dose, compared with that in vaccine-naïve healthy controls.

Methods. Adolescents and young adults previously primed with 4CMenB (2 doses; following a 0,1-month schedule) in study NCT01423084 (group 3B) and vaccine-naïve 15–22 year olds (group B0_1) were enrolled. Group 3B received a booster dose of 4CMenB at 4 years post-primary vaccination; group B0_1 received 2 catch-up doses of 4CMenB (following a 0,1-month schedule). Antibody persistence (primary objective) was evaluated at 4 years post-primary vaccination (in group 3B) *vs.* baseline (in group B0_1) using human serum bactericidal assay (hSBA), in terms of geometric mean titer (GMT) and percentage (%) of individuals with hSBA titer at least 4. Immune responses at 1 month after booster dose (in group 3B) *vs.* those at 1 month after first dose (in group B0_1) were also assessed.

Results. In group 3B, antibody levels declined from 1 month to 4 years post-primary vaccination against all antigens except NHBA, but were higher than in group B0_1 at baseline (Table), with a GMT ratio ≥1.3 and a difference in % of individuals with hSBA titer at least 4 of ≥9%. After one dose of 4CMenB (booster in 3B or first dose in B0_1), GMTs increased (≥4.6-fold in group 3B; ≥2.3-fold in group B0_1), and ≥94% of participants in group 3B and ≥41% of participants in group B0_1 had hSBA titer at least 4 (Table).

Table. Immune responses (persistence and response to a booster dose)

Time point	Antigen (Serogroup B indicator strain)	Group 3B			Group B0_1		
		N	hSBA GMT	% of subjects with titer at least 4[#]	N	hSBA GMT	% of subjects with titer at least 4[#]
1 month after last dose in the parent study (NCT01423084)	fHbp (H44/76)	144	99	99%	-	NA	NA
	NadA (5/99)	134	180	100%	-	NA	NA
	PorA (NZ98/254)	144	11	82%	-	NA	NA
	NHBA (M10713)	140	10	68%	-	NA	NA
Pre-booster/pre-vaccination*	fHbp (H44/76)	144	2.36	26%	105	1.14	5%
	NadA (5/99)	134	25	84%	100	1.2	7%
	PorA (NZ98/254)	144	1.31	9%	105	1.01	0%
	NHBA (M10713)	143	14	71%	105	10	59%
1 month post-booster/post-first dose**	fHbp (H44/76)	141	158	98%	104	13	80%
	NadA (5/99)	124	2191	100%	97	30	87%
	PorA (NZ98/254)	142	30	94%	103	3.58	41%
	NHBA (M10713)	141	65	99%	103	23	80%

3B, participants previously primed with 4CMenB in the parent study; **B0_1**, vaccine-naïve individuals who received 2 catch-up doses of 4CMenB in this study; **hSBA**, human serum bactericidal assay; **N**, number of participants in each dataset analyzed per group and serogroup; **NA**, not applicable; **NHBA**, Neisserial Heparin Binding Antigen; **PorA**, Porin A; **fHbp**, factor H binding protein; **NadA**, *Neisseria* adhesion A.

[#]A cut-off of hSBA at least 5 was used for fHbp and NHBA; *baseline in the current study: pre-booster (4 years post-primary vaccination) for 3B; pre-vaccination for B0_1; **Day 31 in the current study: 1 month post-booster for 3B; 1 month post-first dose for B0_1. **Note:** data for 1 month after last dose in the parent study and pre-booster/pre-vaccination in the current study is presented for the persistence dataset; data for 1 month post-booster/post-first dose is presented for the booster dataset.

Conclusion. Antibody levels in adolescents and young adults primed with 4CMenB waned over time but were higher at 4 years post-primary vaccination than for vaccine-naïve individuals at baseline. A booster dose of 4CMenB in vaccine-primed individuals elicited higher immune responses than one dose of 4CMenB in vaccine-naïve individuals.

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1061. Vaccinating High-Risk Pediatric Patients and Their Families in the Hospital Setting: Give It a Shot!

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Background. Hospitalization and hospital-based clinics confer an opportunity to target high-risk patients and their families who would benefit from vaccination.

Methods. CHOC Children's Hospital is a tertiary-care hospital in Southern California with 11,995 admissions in 2016, including 1,580 hematology/oncology (HO) admissions. We examined the trend in influenza vaccine administration in hospitalized and HO patients over the last decade. We assessed the trend in Tdap and influenza vaccine administration among parents of hospitalized children. We correlated those trends with disease outbreaks in the community and educational and programmatic efforts at our institution.

Results. After educational efforts, the influenza vaccination rate in 2017 compared with 2006 increased 13-fold in hospitalized patients and increased 9-fold among hospitalized HO patients. During the H1N1 pandemic in 2009, influenza vaccination rates increased 470% from the year prior (Figure 1). The number of influenza vaccines administered in the clinic to HO patients was 494 and 408 in 2015–2016 and 2016–2017, respectively. Following program initiation, the number of Tdap vaccines administered to parents during their child's hospitalization increased from 57 doses in 2013 to 118 doses in 2016. The trend in vaccination roughly followed pertussis outbreak cases (Figure 2). The number of influenza vaccines administered to parents of HO patients during their child's clinic visit increased from 44 doses given in 2015–2016 to 306 doses given in 2016–2017 (Figure 3). At our institution, among staff we achieved a 98% vaccination rate for Tdap and influenza in 2017. There were no serious adverse events reported after patient, parent or staff vaccination during this time period.

Conclusion. Missed opportunities for vaccination of high-risk children include hospitalization and specialty clinic visits. Creating a culture of vaccination and public perception of vaccine importance during outbreaks can increase the influenza vaccination rate among high-risk, hospitalized and HO patients. Programs targeting families of high-risk patients are an opportunity to cocoon a vulnerable population. Vaccination of hospitalized children, their parents and staff is safe in these settings.