The study listed may include approved and non-approved uses, formulations or treatment regimens. The results reported in any single study may not reflect the overall results obtained on studies of a product. Before prescribing any product mentioned in this Register, healthcare professionals should consult prescribing information for the product approved in their country.

Study No.: 109995 (MMRV-053 PRI)

Title: Non-inferiority of GSK Biologicals' measles-mumps-rubella-varicella (MMRV) vaccine 208136 vs Priorix™ and Priorix™ coadministered with Varilrix™ (comparator) and to evaluate non-inferiority of Priorix™ and MMRV vaccine 208136 vs comparator.
GSK 208136 (MMRV): GlaxoSmithKline (GSK) Biologicals' combined measles-mumps-rubella-varicella vaccine
Priorix™(MMR): GSK Biologicals' combined measles-mumps-rubella vaccine
Varilrix™ (V): GSK Biologicals' varicella vaccine

Rationale: The present study was conducted to compare the non-inferiority of 2 different vaccination schedules of the candidate MMRV vaccine to MMR vaccine administered at 9 months of age followed by concomitant administration of MMR vaccine with V vaccine at 15 months of age in a measles endemic environment such as India.

Phase: IIIb

Study Period: 09 November 2009 to 21 February 2011

Study Design: open, multicentre, randomised (2:2:1) study with 3 parallel treatment groups.

Centres: 6 centres in India

Indication: Primary immunisation of healthy infants aged 9 months against measles, mumps, rubella and varicella diseases

Treatment: The study groups were as follows:

- MMRV Group: subjects received 2 doses of MMRV vaccine, 1 at Day 0 and 1 at Month 6
- MMR/MMRV Group: subjects received 1 dose of MMR vaccine at Day 0 and 1 dose of MMRV vaccine at Month 6
- Control Group: subjects received 1 dose of MMR vaccine at Day 0 and 1 dose of MMR vaccine co-administered with V at Month 6

All vaccines were administered subcutaneously in the left (MMRV and MMR vaccines) or right (V vaccine) anterolateral thigh.

Objectives:

- To demonstrate the non-inferiority of 2 doses of GSK Biologicals' MMRV vaccine compared to MMR vaccine followed by MMR vaccine co-administered with V vaccine in terms of measles, mumps, rubella and varicella seroconversion rates, 42 – 56 days after the second dose.

Criteria for non-inferiority:
The objective of non-inferiority would be reached if the lower limit of the 2-sided standardised asymptotic 95% confidence interval (CI) on the difference in the seroconversion rates between the 2 groups (MMRV Group minus Control Group) was ≥ -10%.*

- To demonstrate the non-inferiority of MMR vaccine followed by MMRV vaccine compared to MMR vaccine followed by MMR vaccine co-administered with V vaccine in terms of measles, mumps, rubella and varicella seroconversion rates, 42 – 56 days after the second dose.

Criteria for non-inferiority:
The objective of non-inferiority would be reached if the lower limit of the 2-sided standardised asymptotic 95% CI on the difference in the seroconversion rates between the 2 groups (MMR/MMRV Group minus Control Group) was ≥ -10%.*
*Seroconversion was defined as the appearance of antibodies (i.e. concentration/titre ≥ the cut-off value) in the serum of subjects seronegative before vaccination.
A seronegative subject was defined as :
- anti-measles antibody concentration < 150 mIU/mL
- anti-mumps antibody concentration < 231 U/mL
- anti-rubella antibody concentration < 4 IU/mL
- anti-varicella antibody titre < 1:4

Primary Outcome/Efficacy Variable:

- Seroconversion rates for measles, mumps, rubella and varicella, approximately 42 – 56 days after the second vaccine dose.

Secondary Outcome/Efficacy Variable(s):
Immunogenicity

- Seroconversion rates for measles, mumps and rubella approximately 42 – 56 days after the first vaccine dose.

Measles, mumps, rubella and varicella antibody titres, 42 – 56 days after the first and second dose.

Safety

- Occurrence of solicited local symptoms within 4 days (Days 0 – 3) after vaccination.
- Occurrence of solicited general symptoms within 43 days (Days 0 – 42) after vaccination.
- Occurrence of unsolicited signs and symptoms within 43 days (Days 0 – 42) after vaccination.
- Occurrence of serious adverse events (SAEs) from the first study dose up to study end.

Statistical Methods:

The analyses were performed on the Total Vaccinated cohort and the According-To-Protocol (ATP) cohort for immunogenicity.

- The Total Vaccinated cohort included all vaccinated subjects.
- The ATP cohort for immunogenicity included all eligible subjects (i.e. those meeting all eligibility criteria, complying with the procedures defined in the protocol, with no elimination criteria during the study) who had completed the 2-dose study regimen, who were seronegative for at least one vaccine antigen at baseline, who had not received a vaccine forbidden in the protocol and for whom pre-vaccination and post-vaccination serology results were available for antibodies against at least one antigen.

Analysis of Immunogenicity:

The analysis was performed on the ATP cohort for immunogenicity.

Inferential analysis:

The standardized asymptotic 95% CIs for the difference in seroconversion rates for each antigen between groups (MMRV Group minus Control Group and MMR/MMRV Group minus Control Group), 42-56 days after the second vaccine dose, were computed.

Descriptive analysis:

Geometric mean titres/concentrations (GMT/GMCs) with 95% CIs and seroconversion rates with exact 95% CIs were tabulated for each antigen and for each group, 42-56 days after the first and the second vaccine dose.

Analysis of safety

The analysis of safety was performed on the Total Vaccinated cohort.

For each solicited symptom, the percentage of subjects with the symptom and its exact 95% CI was summarized by vaccine group. Solicited local symptoms were followed up during the 4 days after vaccination. General symptoms (fever, rash, meningism and parotid gland swelling) were solicited for 43 days post-vaccination. The same tabulation was performed for grade 3 solicited symptoms and for general symptoms assessed by the investigators as causally related to the study vaccination. The percentage of subjects with at least one unsolicited adverse event (AE) within 43 days (Days 0-42) following vaccination was summarized by vaccine group according to the Medical Dictionary for Regulatory Activities (MedDRA) preferred term. SAEs occurring throughout the study period were also tabulated by MedDRA preferred terms.

Study Population: Healthy male or female subject between and including 9 and 10 months of age at the time of the first vaccination, who had not been vaccinated previously against measles, mumps, rubella and varicella, who had no history of measles, mumps, rubella and/or varicella diseases, who had not been exposed to measles, mumps, rubella and/or varicella within 30 days prior to study start and did not reside in the same household as a high risk person (new-born infants, pregnant women with a negative history of chickenpox, persons with known immunodeficiency). Written informed consent was obtained from the parents/guardians of the subjects prior to study entry.

Number of subjects	**MMRV Group**	**MMR/MMRV Group**	**Control Group**
Planned, N	180	180	90
Randomised, N (Total Vaccinated cohort)	180	180	90
Completed, n (%)	155 (86.1)	159 (88.3)	79 (87.8)
Total Number Subjects Withdrawn, n (%)	25 (13.9)	21 (11.7)	11 (12.2)
Withdrawn due to Adverse Events, n (%)	0 (0.0)	0 (0.0)	0 (0.0)
Withdrawn due to Lack of Efficacy, n (%)	Not applicable	Not applicable	Not applicable
Withdrawn for other reasons, n (%)	25 (13.9)	21 (11.7)	11 (12.2)
Demographics	**MMRV Group**	**MMR/MMRV Group**	**Control Group**
N (Total Vaccinated cohort)	180	180	90
Females:Males	79:101	89:91	49:41
Mean Age, months (SD)	9.0 (0.00)	9.0 (0.11)	9.0 (0.00)
Asian - Central/South Asian heritage, n (%)	177 (98.3)	175 (97.2)	88 (97.8)

Primary Efficacy Results: Difference between MMRV Group and Control Group in percentage of subjects with anti-measles, anti-mumps, anti-rubella and anti-varicella antibody seroconversion rates, 42-56 days after the second vaccination dose (ATP cohort for immunogenicity)

								Difference in percentage (MMRV Group minus Control Group)			
		MMRV Group			Control Group			%	95% CI		P-value
Antibody	**Assay cut-off**	**N**	**n**	**%**	**N**	**n**	**%**		**LL***	**UL**	
Anti-Measles	≥ 150 mIU/mL	149	149	100	72	72	100	0.00	-2.52	5.09	<0.0001
Anti-Mumps	≥ 231 U/mL	149	149	100	72	72	100	0.00	-2.52	5.09	<0.0001
Anti-Rubella	≥ 4 IU/mL	150	150	100	73	73	100	0.00	-2.51	5.02	<0.0001
Anti-Varicella	≥ 1:4	138	138	100	72	69	95.8	4.17	1.37	11.57	<0.0001

N = number of subjects with available results
n/% = number/percentage of subjects with titre/concentration equal to or above the specified cut-off value
95% CI = standardized asymptotic 95% confidence interval; LL = lower limit, UL = upper limit
P-value = one-sided asymptotic standardized test for H0: MMRV – Control < -10.0%
* Criterion for non-inferiority: LL of the 95% CI for the group difference in the percentage of subjects with seroconversion ≥ -10%.

Primary Efficacy Results: Difference between MMR/MMRV Group and Control Group in percentage of subjects with anti-measles, anti-mumps, anti-rubella and anti-varicella antibody seroconversion rates, 42-56 days after the second vaccination dose (ATP cohort for immunogenicity)

								Difference in percentage (MMR/MMRV Group minus Control Group)			
		MMR/MMRV Group			Control Group			%	95% CI		P-value
Antibody	**Assay cut-off**	**N**	**n**	**%**	**N**	**n**	**%**		**LL***	**UL**	
Anti-Measles	≥ 150 mIU/mL	153	153	100	72	72	100	0.00	-2.46	5.09	<0.0001
Anti-Mumps	≥ 231 U/mL	152	152	100	72	72	100	0.00	-2.48	5.09	<0.0001
Anti-Rubella	≥ 4 IU/mL	152	152	100	73	73	100	0.00	-2.48	5.02	<0.0001
Anti-Varicella	≥ 1:4	143	141	98.6	72	69	95.8	2.77	-1.59	10.29	<0.0001

N = number of subjects with available results
n/% = number/percentage of subjects with titre/concentration equal to or above the specified cut-off value
95% CI = standardized asymptotic 95% confidence interval; LL = lower limit, UL = upper limit
P-value = one-sided asymptotic standardized test for H0: MMR/MMRV – Control < -10.0%
* Criterion for non-inferiority: LL of the 95% CI for the group difference in the percentage of subjects with seroconversion ≥ -10%.

Primary Efficacy Results: Anti-measles seroconversion rates and GMCs in initially seronegative subjects (ATP cohort for immunogenicity)

				≥ 150 mIU/mL*				GMC (mIU/mL)		
						95% CI			95% CI	
Antibody	**Group**	**Timing**	**N**	**n**	**%**	**LL**	**UL**	**value**	**LL**	**UL**
Anti-Measles	MMRV	PI(W6)	148	138	93.2	87.9	96.7	2013.6	1662.2	2439.3
		PII(W30)*	149	149	100	97.6	100	4471.3	3975.3	5029.2
	MMR/MMRV	PI(W6)	153	135	88.2	82.0	92.9	1180.4	963.0	1446.7
		PII(W30)*	153	153	100	97.6	100	3358.7	3017.5	3738.4
	Control	PI(W6)	72	63	87.5	77.6	94.1	1200.0	887.9	1621.8
		PII(W30)*	72	72	100	95.0	100	2495.0	2064.5	3015.2

Seronegativity = Anti-Measles antibody concentration <150 mIU/mL
Seroconversion =Anti-measles concentration ≥ 150 mIU/mL in the serum of subjects seronegative before vaccination.
GMC = geometric mean antibody concentration calculated on all subjects
N = number of subjects with available results
n/% = number/percentage of subjects with concentration equal to or above the specified cut-off value
95% CI = 95% confidence interval; LL = Lower Limit, UL = Upper Limit
PI(W6) = 6 weeks post-vaccination Dose 1
PII(W30) = 6 weeks post-vaccination Dose 2
*Primary Outcome Variable

Primary Efficacy Results: Anti-mumps seroconversion rates and GMCs in initially seronegative subjects (ATP cohort for immunogenicity)

				≥ 231 U/mL*				GMC (U/mL)		
						95% CI			95% CI	
Antibody	**Group**	**Timing**	**N**	**n**	**%**	**LL**	**UL**	**value**	**LL**	**UL**
Anti-Mumps	MMRV	PI(W6)	144	124	86.1	79.4	91.3	991.9	819.7	1200.3
		PII(W30)*	149	149	100	97.6	100	6428.0	5774.9	7154.9
	MMR/MMRV	PI(W6)	152	128	84.2	77.4	89.6	746.6	628.0	887.6
		PII(W30)*	152	152	100	97.6	100	10108.5	9223.9	11078.0
	Control	PI(W6)	72	60	83.3	72.7	91.1	775.1	600.9	999.7
		PII(W30)*	72	72	100	95.0	100	4925.3	4200.9	5774.7

Seronegativity = Anti-mumps antibody concentration < 231 U/mL
Seroconversion = Anti-mumps antibody concentration ≥ 231 U/mL in the serum of subjects seronegative before vaccination.
GMC = geometric mean antibody concentration calculated on all subjects
N = number of subjects with available results
n/% = number/percentage of subjects with concentration equal to or above the specified cut-off value
95% CI = 95% confidence interval; LL = Lower Limit, UL = Upper Limit
PI(W6) = 6 weeks post-vaccination Dose 1
PII(W30) = 6 weeks post-vaccination Dose 2
*Primary Outcome Variable

Primary Efficacy Results: Anti-rubella seroconversion rates and GMCs in initially seronegative subjects (ATP cohort for immunogenicity)

				≥ 4 IU/mL*				GMC (IU/mL)		
						95% CI			95% CI	
Antibody	**Group**	**Timing**	**N**	**n**	**%**	**LL**	**UL**	**value**	**LL**	**UL**
Anti-Rubella	MMRV	PI(W6)	149	147	98.7	95.2	99.8	45.4	38.3	53.7
		PII(W30)*	150	150	100	97.6	100	148.4	136.1	161.8
	MMR/MMRV	PI(W6)	152	151	99.3	96.4	100	63.8	55.9	72.8
		PII(W30)*	152	152	100	97.6	100	164.8	152.1	178.6
	Control	PI(W6)	73	73	100	95.1	100	62.0	51.3	74.9
		PII(W30)*	73	73	100	95.1	100	173.0	153.0	195.6

Seronegativity = Anti-rubella antibody concentration < 4 IU/mL
Seroconversion = Anti-rubella concentration ≥ 4 IU/mL in the serum of subjects seronegative before vaccination.
GMC = geometric mean antibody concentration calculated on all subjects
N = number of subjects with available results;
n/% = number/percentage of subjects with concentration equal to or above the specified cut-off value
95% CI = 95% confidence interval; LL = Lower Limit, UL = Upper Limit
PI(W6) = 6 weeks post-vaccination Dose 1
PII(W30) = 6 weeks post-vaccination Dose 2
*Primary Outcome Variable

Primary Efficacy Results: Anti-varicella seroconversion rates and GMTs in initially seronegative subjects (ATP cohort for immunogenicity)

				≥ 1:4*				GMT		
						95% CI			95% CI	
Antibody	**Group**	**Timing**	**N**	**n**	**%**	**LL**	**UL**	**value**	**LL**	**UL**
Anti-Varicella	MMRV	PI(W6)	138	130	94.2	88.9	97.5	120.5	90.8	160.0
		PII(W30)*	138	138	100	97.4	100	5318.5	4318.7	6549.8
	MMR/MMRV	PI(W6)	142	4	2.8	0.8	7.1	2.2	2.0	2.4
		PII(W30)*	143	141	98.6	95.0	99.8	198.0	158.2	247.7
	Control	PI(W6)	72	1	1.4	0.0	7.5	2.2	1.8	2.6
		PII(W30)*	72	69	95.8	88.3	99.1	128.0	91.7	178.7

Seronegativity = Anti-varicella antibody titre < 1:4
Seroconversion = Anti-varicella antibody titre ≥ 1:4 in the serum of subjects seronegative before vaccination.
N = number of subjects with available results
n/% = number/percentage of subjects with titre equal to or above the specified cut-off value
GMT = geometric mean titre calculated on all subjects

95% CI = 95% confidence interval; LL = Lower Limit, UL = Upper Limit
PI(W6) = 6 weeks post-vaccination Dose 1
PII(W30) = 6 weeks post-vaccination Dose 2
*Primary Outcome Variable

Secondary Outcome Variable(s): Incidence of solicited local symptoms reported during the 4-day (Days 0-3) post-vaccination period following each dose (Total Vaccinated cohort)

		MMRV Group					MMR/MMRV Group					Control Group				
					95 % CI					95 % CI					95 % CI	
Symptom	**Intensity**	**N**	**n**	**%**	**LL**	**UL**	**N**	**n**	**%**	**LL**	**UL**	**N**	**n**	**%**	**LL**	**UL**
Dose 1																
Pain	Any	174	20	11.5	7.2	17.2	172	12	7.0	3.7	11.9	84	9	10.7	5.0	19.4
	Grade 3	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	84	0	0.0	0.0	4.3
Redness	Any	174	15	8.6	4.9	13.8	172	8	4.7	2.0	9.0	84	3	3.6	0.7	10.1
	>20.0 mm	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	84	0	0.0	0.0	4.3
Swelling	All	174	8	4.6	2.0	8.9	172	5	2.9	1.0	6.7	84	3	3.6	0.7	10.1
	>20.0 mm	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	84	0	0.0	0.0	4.3
Dose 2																
Pain	Any	155	9	5.8	2.7	10.7	159	10	6.3	3.1	11.3	79	3	3.8	0.8	10.7
	Grade 3	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
Redness	Any	155	10	6.5	3.1	11.5	159	6	3.8	1.4	8.0	79	0	0.0	0.0	4.6
	>20.0 mm	155	3	1.9	0.4	5.6	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
Swelling	Any	155	9	5.8	2.7	10.7	159	6	3.8	1.4	8.0	79	0	0.0	0.0	4.6
	>20.0 mm	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6

N= number of subjects with the documented dose
n/% = number/percentage of subjects reporting the symptom at least once
95%CI= exact 95% confidence interval; LL = lower limit, UL = upper limit
Any= incidence of a local symptom regardless of intensity grade
Grade 3 pain = cried when limb was moved/spontaneously painful.

Secondary Outcome Variable(s): Incidence of solicited general symptoms reported during the 43-day (Days 0-42) post-vaccination period following each dose (Total Vaccinated cohort)

		MMRV Group					MMR/MMRV Group					Control Group				
					95 % CI					95 % CI					95 % CI	
Symptom	**Intensity/ Relationship**	**N**	**n**	**%**	**LL**	**UL**	**N**	**n**	**%**	**LL**	**UL**	**N**	**n**	**%**	**LL**	**UL**
Dose 1																
Meningism	Any	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
	Grade 3	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
	Related	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
Parotid gland swelling	Any	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
	Grade 3	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
	Related	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.3
Dose 2																
Meningism	Any	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
	Grade 3	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
	Related	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
Parotid gland swelling	Any	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
	Grade 3	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
	Related	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6

N= number of subjects with the documented dose
n/% = number/percentage of subjects reporting the symptom at least once
95%CI= exact 95% confidence interval; LL = lower limit, UL = upper limit
Any= incidence of a general symptom regardless of intensity grade or relationship to vaccination
Grade 3 meningism and parotid gland swelling = meningism/parotid gland swelling which prevented normal everyday activities
Related = general symptom assessed by the investigator as causally related to the vaccination.

Secondary Outcome Variable(s): Incidence of fever reported during the 43-day (Days 0-42) post-vaccination period following each dose (Total Vaccinated cohort)

Symptom	Intensity/ Relationship	MMRV Group					MMR/MMRV Group					Control Group				
					95 % CI					95 % CI					95 % CI	
		N	n	%	LL	UL	N	n	%	LL	UL	N	n	%	LL	UL
Dose 1																
Fever (rectally)	≥ 38.0°C	174	76	43.7	36.2	51.4	172	70	40.7	33.3	48.4	83	27	32.5	22.6	43.7
	> 39.5°C	174	11	6.3	3.2	11.0	172	5	2.9	1.0	6.7	83	1	1.2	0.0	6.5
	Related	174	53	30.5	23.7	37.9	172	48	27.9	21.3	35.2	83	15	18.1	10.5	28.0
Dose 2																
Fever (Rectally)	≥ 38.0°C	155	41	26.5	19.7	34.1	159	37	23.3	16.9	30.6	79	22	27.8	18.3	39.1
	> 39.5°C	155	2	1.3	0.2	4.6	159	6	3.8	1.4	8.0	79	2	2.5	0.3	8.8
	Related	155	22	14.2	9.1	20.7	159	21	13.2	8.4	19.5	79	10	12.7	6.2	22.0

N= number of subjects with the documented dose
n/% = number/percentage of subjects reporting the symptom at least once
95%CI= exact 95% confidence interval; LL = lower limit, UL = upper limit
Related = fever assessed by the investigator as causally related to the vaccination.

Secondary Outcome Variable(s): Incidence of rash reported during the 43-day (Days 0-42) post-vaccination period following each dose (Total Vaccinated cohort)

Symptom	Intensity/ Relationship	MMRV Group					MMR/MMRV Group					Control Group				
					95 % CI					95 % CI					95 % CI	
		N	n	%	LL	UL	N	n	%	LL	UL	N	n	%	LL	UL
Dose 1																
Rash	Any (localised or generalised)	174	1	0.6	0.0	3.2	172	2	1.2	0.1	4.1	83	1	1.2	0.0	6.5
	Grade 3	174	0	0.0	0.0	2.1	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.4
	Related	174	1	0.6	0.0	3.2	172	0	0.0	0.0	2.1	83	0	0.0	0.0	4.4
Dose 2																
Rash	Any (localised or generalised)	155	0	0.0	0.0	2.4	159	1	0.6	0.0	3.5	79	0	0.0	0.0	4.6
	Grade 3	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6
	Related	155	0	0.0	0.0	2.4	159	0	0.0	0.0	2.3	79	0	0.0	0.0	4.6

N= number of subjects with the documented dose
n/% = number/percentage of subjects reporting the symptom at least once
95%CI= exact 95% confidence interval; LL = lower limit, UL = upper limit
Any= incidence of a rash regardless of intensity grade or relationship to vaccination
Grade 3 rash = more than 150 lesions
Related = rash assessed by the investigator as causally related to the vaccination.

Safety results: Number (%) of subjects with unsolicited AEs within 43-day (Days 0-42) after the first vaccination dose (Total Vaccinated cohort)

Most frequent adverse events - On-Therapy (occurring within Days 0-42 following vaccination)	**MMRV Group N = 180**	**MMR/MMRV Group N = 180**	**Control Group N = 90**
Subjects with any AE(s), n (%)	37 (20.6)	39 (21.7)	18 (20.0)
Cough	6 (3.3)	10 (5.6)	6 (6.7)
Rhinitis	7 (3.9)	9 (5.0)	6 (6.7)
Nasopharyngitis	4 (2.2)	8 (4.4)	6 (6.7)
Upper respiratory tract infection	10 (5.6)	7 (3.9)	1 (1.1)
Diarrhoea	8 (4.4)	5 (2.8)	4 (4.4)
Vomiting	2 (1.1)	7 (3.9)	1 (1.1)
Gastroenteritis	5 (2.8)	2 (1.1)	2 (2.2)
Conjunctivitis	2 (1.1)	-	-
Cold agglutinins positive	1 (0.6)	-	-
Decreased appetite	-	1 (0.6)	-
Dehydration	-	1 (0.6)	-

Feeling cold	-	1 (0.6)	-
Hand-foot-and-mouth disease	-	-	1 (1.1)
Impetigo	1 (0.6)	-	-
Injection site swelling	-	-	1 (1.1)
Irritability	1 (0.6)	-	-
Lower respiratory tract infection	1 (0.6)	-	-
Malnutrition	-	-	1 (1.1)
Otorrhoea	-	1 (0.6)	-
Pharyngitis	1 (0.6)	-	-
Pneumonia	-	1 (0.6)	-
Pyoderma	1 (0.6)	-	-
Rhinorrhoea	-	1 (0.6)	-
Viral infection	-	1 (0.6)	-
Wheezing	1 (0.6)	-	-
-: Adverse event absent			
Safety results: Number (%) of subjects with unsolicited AEs within 43-day (Days 0-42) after the second vaccination dose (Total Vaccinated cohort)			
Most frequent adverse events - On-Therapy (occurring within Days 0-42 following vaccination)	**MMRV Group N = 180**	**MMR/MMRV Group N = 180**	**Control Group N = 90**
Subjects with any AE(s), n (%)	19 (10.6)	18 (10.0)	11 (12.2)
Rhinitis	6 (3.3)	7 (3.9)	5 (5.6)
Cough	6 (3.3)	4 (2.2)	3 (3.3)
Diarrhoea	5 (2.8)	5 (2.8)	3 (3.3)
Upper respiratory tract infection	3 (1.7)	1 (0.6)	2 (2.2)
Rhinitis allergic	2 (1.1)	1 (0.6)	2 (2.2)
Vomiting	2 (1.1)	2 (1.1)	1 (1.1)
Nasopharyngitis	1 (0.6)	1 (0.6)	1 (1.1)
Aphthous stomatitis	1 (0.6)	-	-
Ascariasis	-	1 (0.6)	-
Bronchiolitis	-	1 (0.6)	-
Gastroenteritis	-	1 (0.6)	-
Pyrexia	1 (0.6)	-	-
Rhinorrhoea	1 (0.6)	-	-
Swelling	1 (0.6)	-	-
Urticaria papular	-	1 (0.6)	-
-: Adverse event absent.			
Safety results: Number (%) of subjects with SAEs occurring from the first study dose up to study end (Total Vaccinated cohort)			
Serious adverse event, n (%) [n considered by the investigator to be related to study medication]			
All SAEs	**MMRV Group N = 180**	**MMR/MMRV Group N = 180**	**Control Group N = 90**
Subjects with any SAE(s), n (%) [n assessed by the investigator as related]	7 (3.9) [0]	6 (3.3) [0]	0 (0.0) [0]
Gastroenteritis	2 (1.1) [0]	3 (1.7) [0]	0 (0.0) [0]
Lower respiratory tract infection	2 (1.1) [0]	1 (0.6) [0]	0 (0.0) [0]
Viral infection	1 (0.6) [0]	1 (0.6) [0]	0 (0.0) [0]
Bronchiolitis	0 (0.0) [0]	1 (0.6) [0]	0 (0.0) [0]
Dehydration	0 (0.0) [0]	1 (0.6) [0]	0 (0.0) [0]
Febrile convulsion	0 (0.0) [0]	1 (0.6) [0]	0 (0.0) [0]
Pneumonia	0 (0.0) [0]	1 (0.6) [0]	0 (0.0) [0]
Pneumonitis	1 (0.6) [0]	0 (0.0) [0]	0 (0.0) [0]
Pyrexia	1 (0.6) [0]	0 (0.0) [0]	0 (0.0) [0]

Upper respiratory tract inflammation	0 (0.0) [0]	1 (0.6) [0]	0 (0.0) [0]
Wheezing	1 (0.6) [0]	0 (0.0) [0]	0 (0.0) [0]
Fatal SAEs	**MMRV Group N = 180**	**MMR/MMRV Group N = 180**	**Control Group N = 90**
Subjects with fatal SAE(s), n (%) [n assessed by the investigator as related]	0 (0.0) [0]	0 (0.0) [0]	0 (0.0) [0]

Conclusion:
The non-inferiority of both vaccination schedules: 2 doses of MMRV vaccine or MMR vaccine followed by MMRV vaccine, compared to MMR vaccine followed by MMR vaccine co-administered with V vaccine, was demonstrated since the lower limit of the standardized asymptotic 95% CI for the difference between groups (MMRV Group minus Control Group or MMR/MMRV Group minus Control Group) in terms of seroconversion rate for measles, mumps, rubella and varicella was ≥ -10%.
Within the 43-day period after the first vaccination dose, 37 (20.6%) subjects in the MMRV Group, 39 (21.7%) subjects in the MMR/MMRV Group and 18 (20.0%) subjects in the Control Group, reported at least one unsolicited AE. Within the 43-day period after the second vaccination dose, 19 (10.6%) subjects in the MMRV Group, 18 (10.0%) subjects in the MMR/MMRV Group and 11 (12.2%) subjects in the Control Group, reported at least one unsolicited AE. SAEs were reported for 7 (3.9%) subjects in the MMRV Group and 6 (3.3%) subjects in the MMR/MMRV Group. None of the SAEs reported were fatal and all were assessed by the investigators as not related to the study vaccination.

Publications: None

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