XV. HRADECKÉ VAKCINOLOGICKÉ DNY
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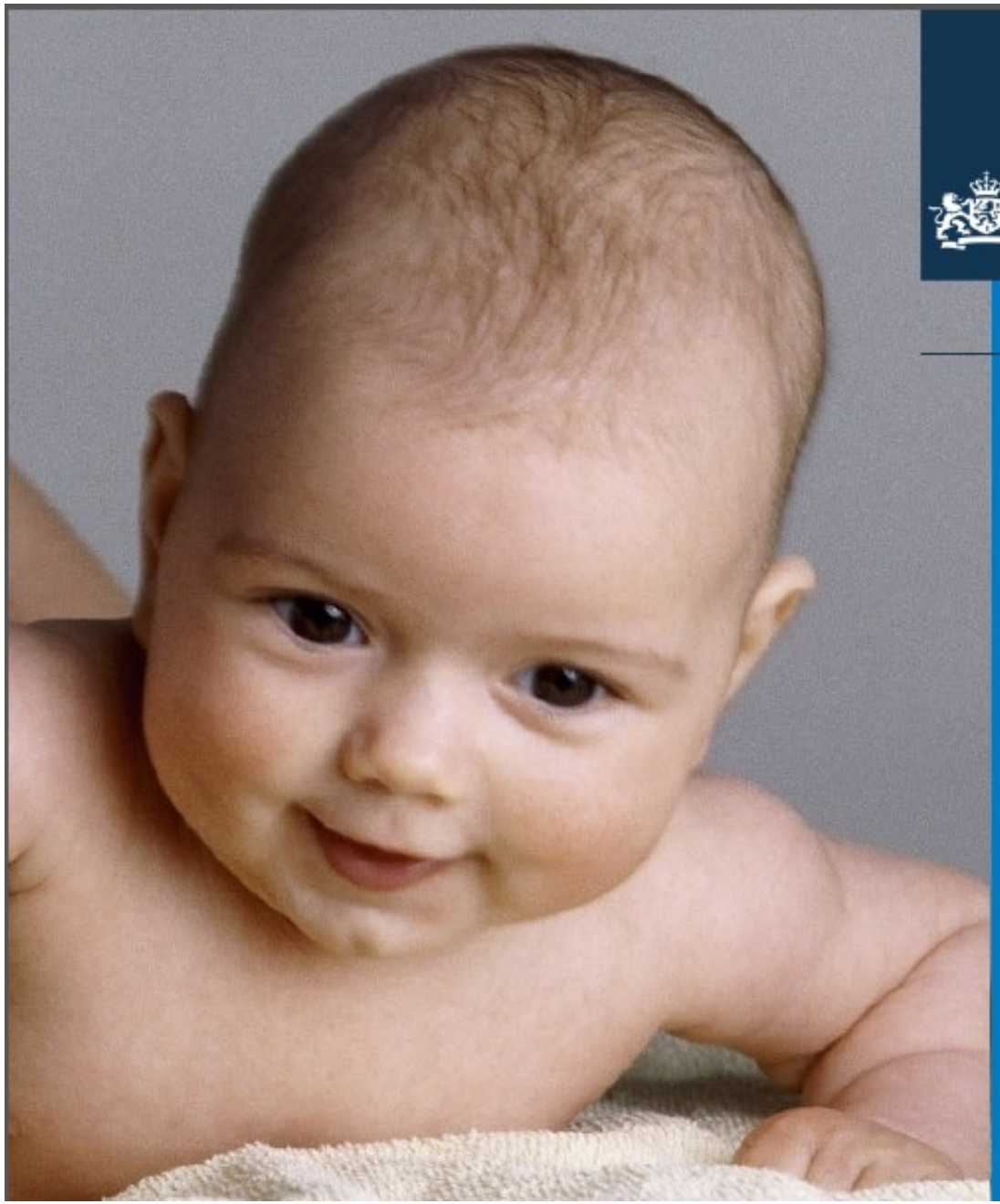
Hradec Králové

37TH ANNUAL MEETING OF THE
EUROPEAN SOCIETY FOR PAEDIATRIC INFECTIOUS DISEASES
Organised jointly by ESPID and the ESPID foundation
LJUBLJANA, SLOVENIA, MAY 6-11, 2019

Očkování nedonošených dětí, RSV vakcinace

MUDr. Hana Cabrnochová, MBA

ČESKÁ VAKCINOLOGICKÁ SPOLEČNOST ČLS JEP



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Protective antibody levels and timeliness of primary immunisations in preterm infants

Elsbeth Rouers, MD
PhD-candidate

Úvod

Dutch National Immunisation Program

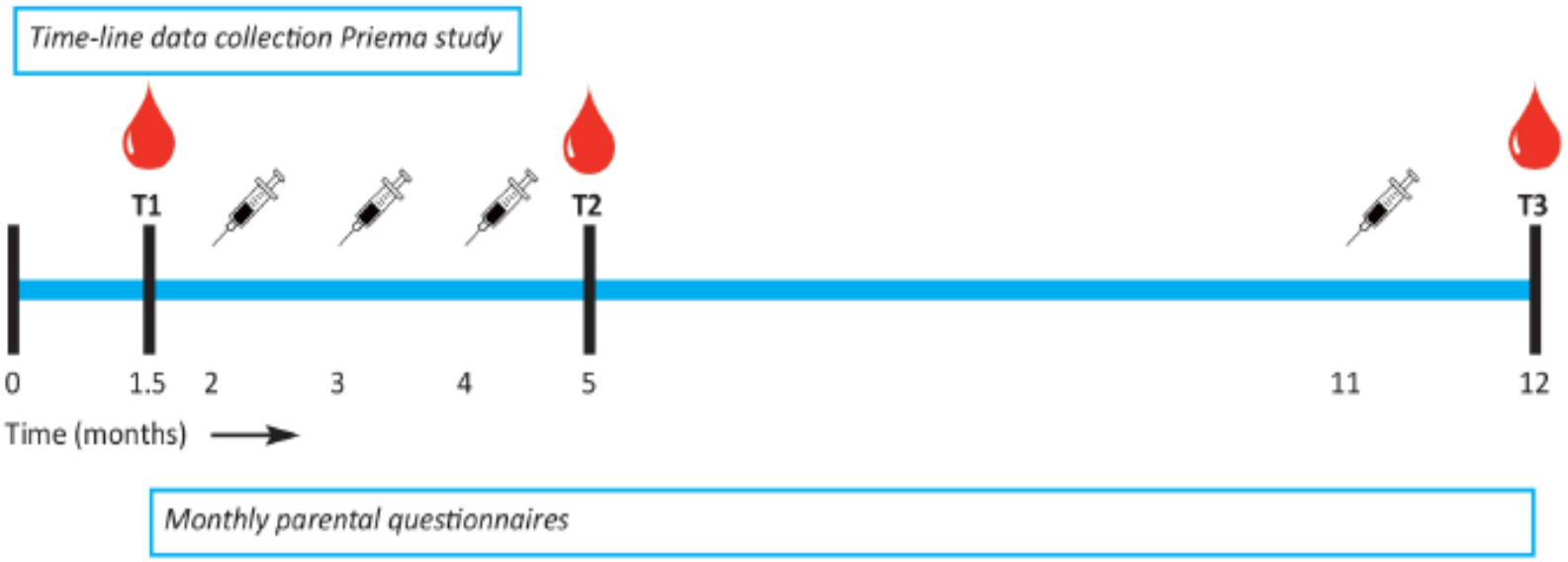
~ 170.000 newborns annually in the Netherlands

Approximately 15.500 (8.5%) preterm infants

All receive the same schedule

Úvod

Study design – data collection



Classification	N of inclusions
Total population	296
GA	
GA: <28 weeks	87
GA: 28-32 weeks	119
GA: 32-36 weeks	90
Reference study*	
Term infants	66

*Historical reference cohort (PIEN study)

Výsledky

Percentages protected

N	Pre-vaccination (T1) 264	Post-primary series (T2) 254	Post-booster (T3) 244
Pertussis	3.4	93.7	98.5
Diphtheria	54.9	99.6	99.2
Tetanus	99.2	100	100
Hib	20.5	40.6	88.1
Ps6B*	4.2	45.8	96.7
Ps14	16.3	85.8	97.1

Antibody results

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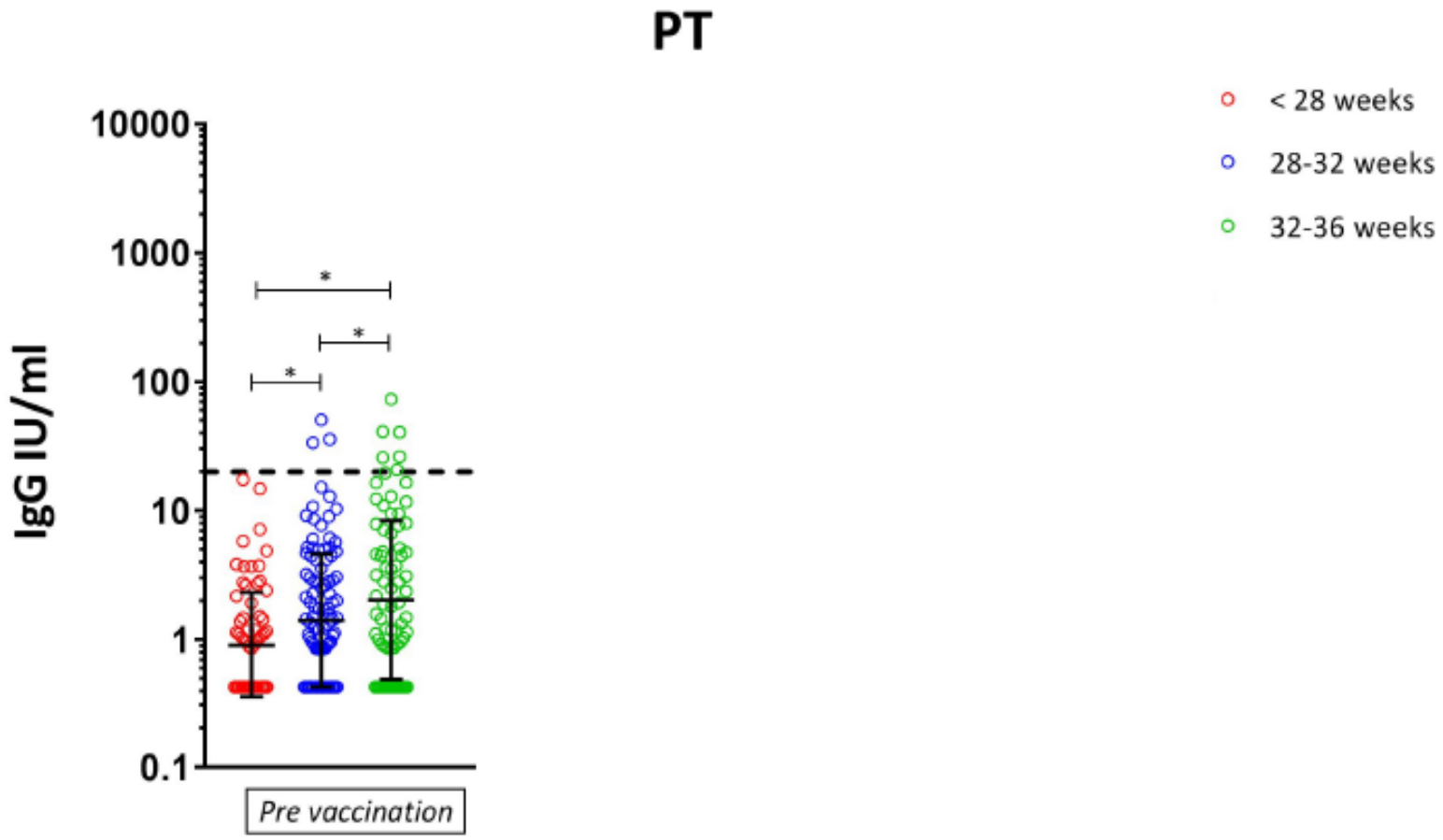
** Also lower antibody levels for Ps4, 18C and 23F after the primary series*

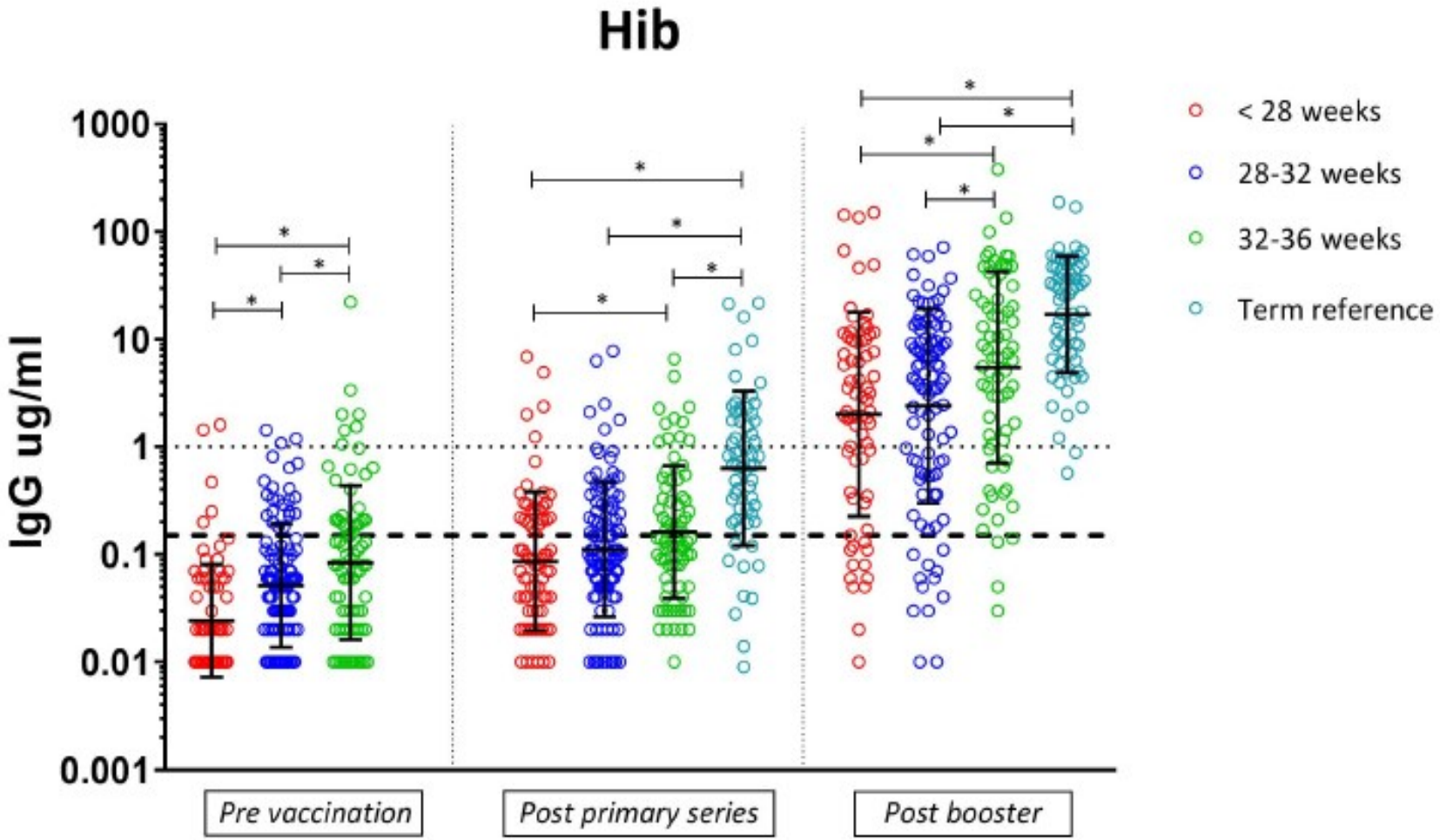
Antibody results

Anti-Pertussis Toxin (PT) antibody levels



Antibody results

Anti-Hib antibody levels



Výsledky

Classification	N known date 1st vaccination (% of the population)	Mean age at 1st vaccination (range)	1st vaccination on time (%)	2nd vaccination on time (%)	3rd vaccination on time (%)
Total population	276 (100)	**62.7 (33-118)**	166 (60)	239 (87)	234 (87)
Gestational Age					
< 28 weeks	79 (29)	69.2 (49-118)	29 (37)	66 (84)	68 (86)
28-32 weeks	114 (41)	59.4 (42-118)	83 (73)	97 (86)	95 (86)
32-36 weeks	83 (30)	61.0 (33-82)	54 (65)	76 (93)	71 (91)

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Timeliness of 1st vaccination is not associated with antibody levels

Závěr

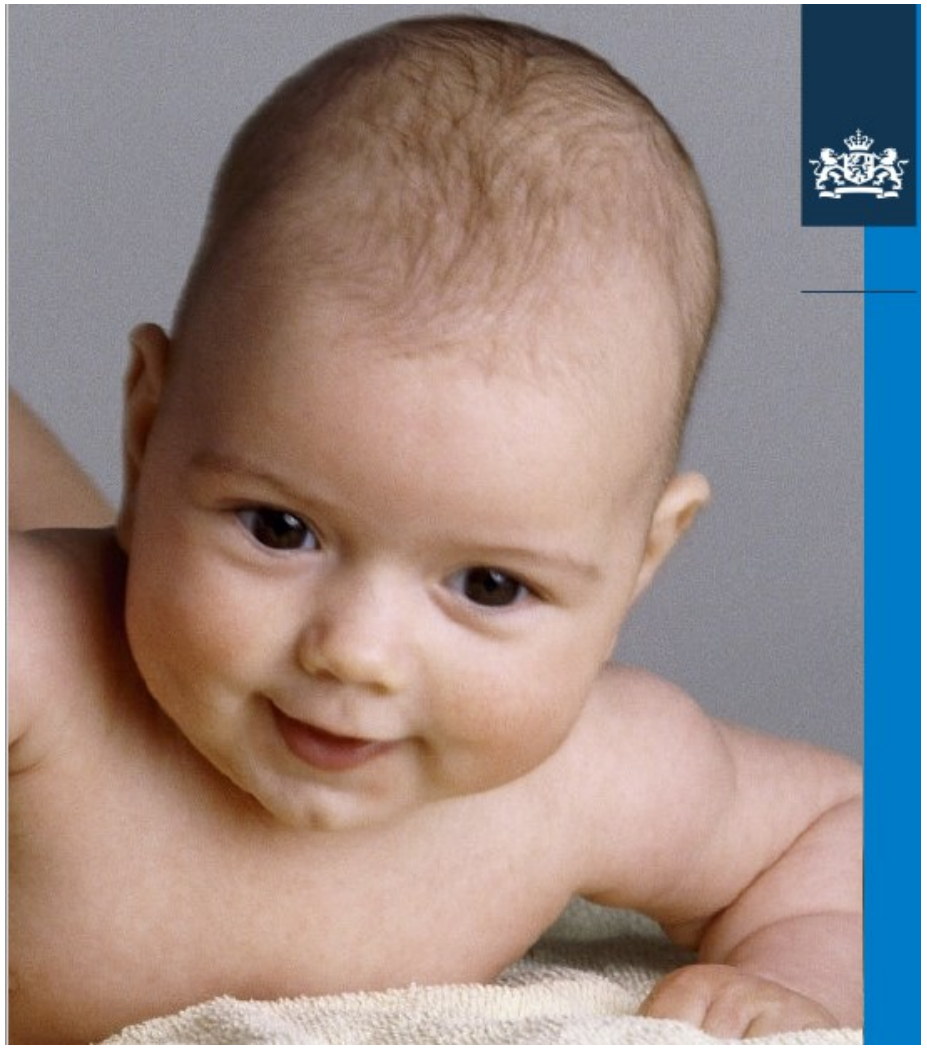
Insufficient protection after primary series for

- Hib
- Pneumococcal serotypes 4, 6B, 18C and 23F

Sufficient protection post-booster for almost all antigens in all gestational age groups

No differences in proportions of protective antibody levels were observed between the three GA groups (limited differences in GMC after completion of vaccinations in first year of life)

Poor timeliness of first immunizations in preterm infants (in particular when gestational age <28 weeks)



Presentation 2

UMC Utrecht

SAFETY AND TOLERABILITY OF HUMAN ROTAVIRUS VACCINE IN EXTREMELY PRETERM INFANTS

Josephine van Dongen, MD

Nedonošené děti

More prone to severe acute gastroenteritis:

- Increased risk of dehydration
- Increased risk of hospital acquisition at early age
- More severe infection

*

Briggs-Steinberg et al – Am J Perinatol 2018
Bruijning-Verhagen et al – BMC Med 2013

Používané vakcíny v Evropě

Licensed for use in > 27 weeks of gestation

Based on clinical trial in 300 preterm infants (median GA 34 weeks)[1]

Licensed for use in > 25 weeks of gestation

Based on clinical trial in 2070 preterm infants (median GA 34 weeks)[2]

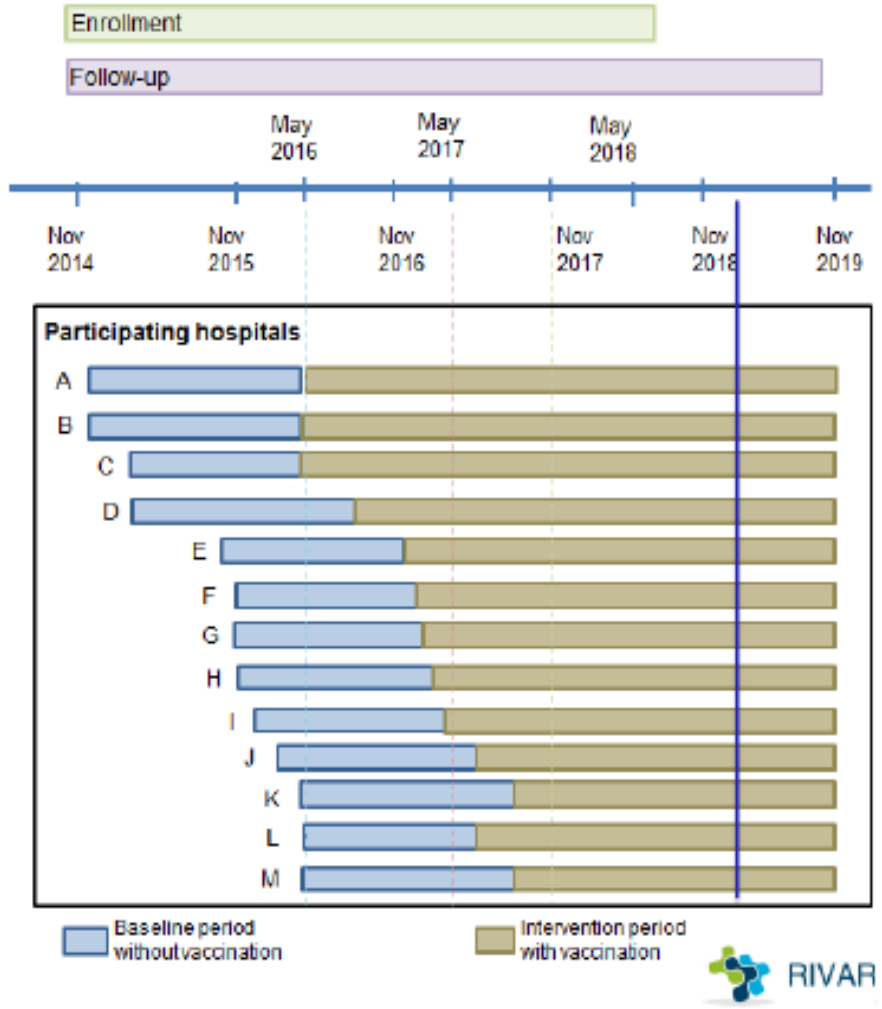
GA = gestational age

1. Omenaca et al – PIDJ 2012
2. Goveia et al – PIDJ 2007

Umístění studie

Risk-group Infant Vaccination Against Rotavirus project

= pilot implementation project on routine vaccination with HRV for medical risk infants, including preterms, in 13 hospitals in the Netherlands



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HRV = human rotavirus vaccine

Cíl

1. Asses safety of rotavirus vaccination among very preterm infants (GA below 30 weeks)

2. Compare tolerability among NIP versus NIP+HRV vaccinated very preterm infants

*

GA = gestational age, NIP = national immunization program, HRV = human rotavirus vaccine

Definice

Very preterm = gestational age < 30 weeks

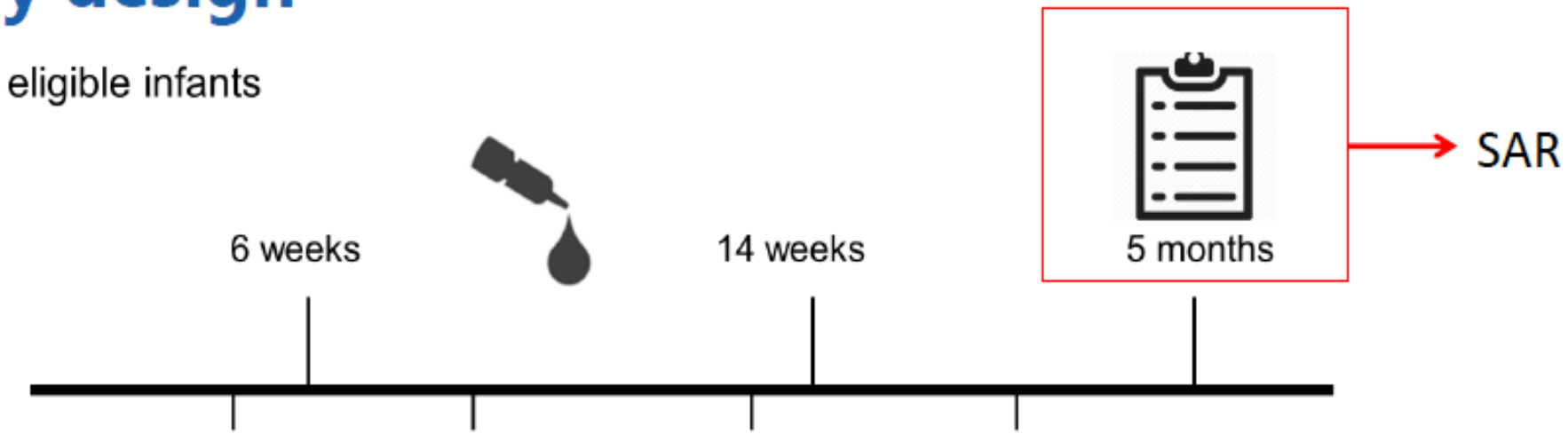
Extremely preterm = gestational age < 27 weeks

Serious Adverse Reaction (SAR) = as reported in medical file up to 5 months of age

Tolerability = parent reported solicited symptoms in 7 days following vaccination

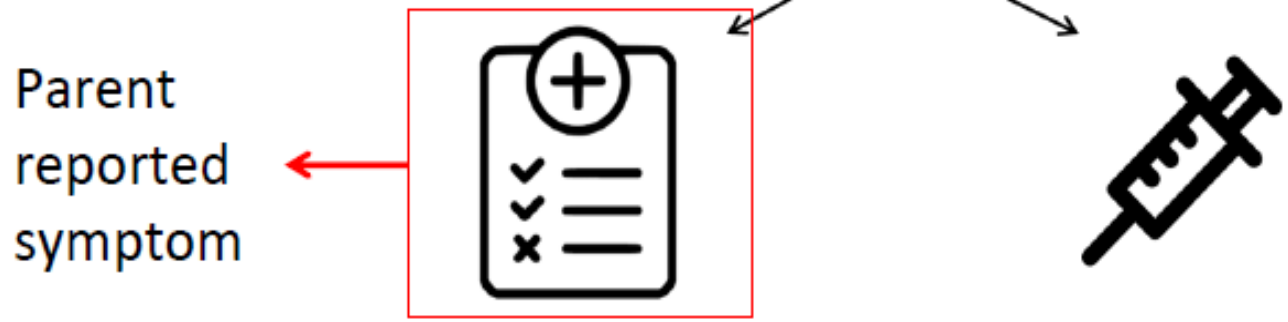
Study design

1. All eligible infants



2. Follow up study participants

Comparison NIP versus NIP + HRV vaccinated infants



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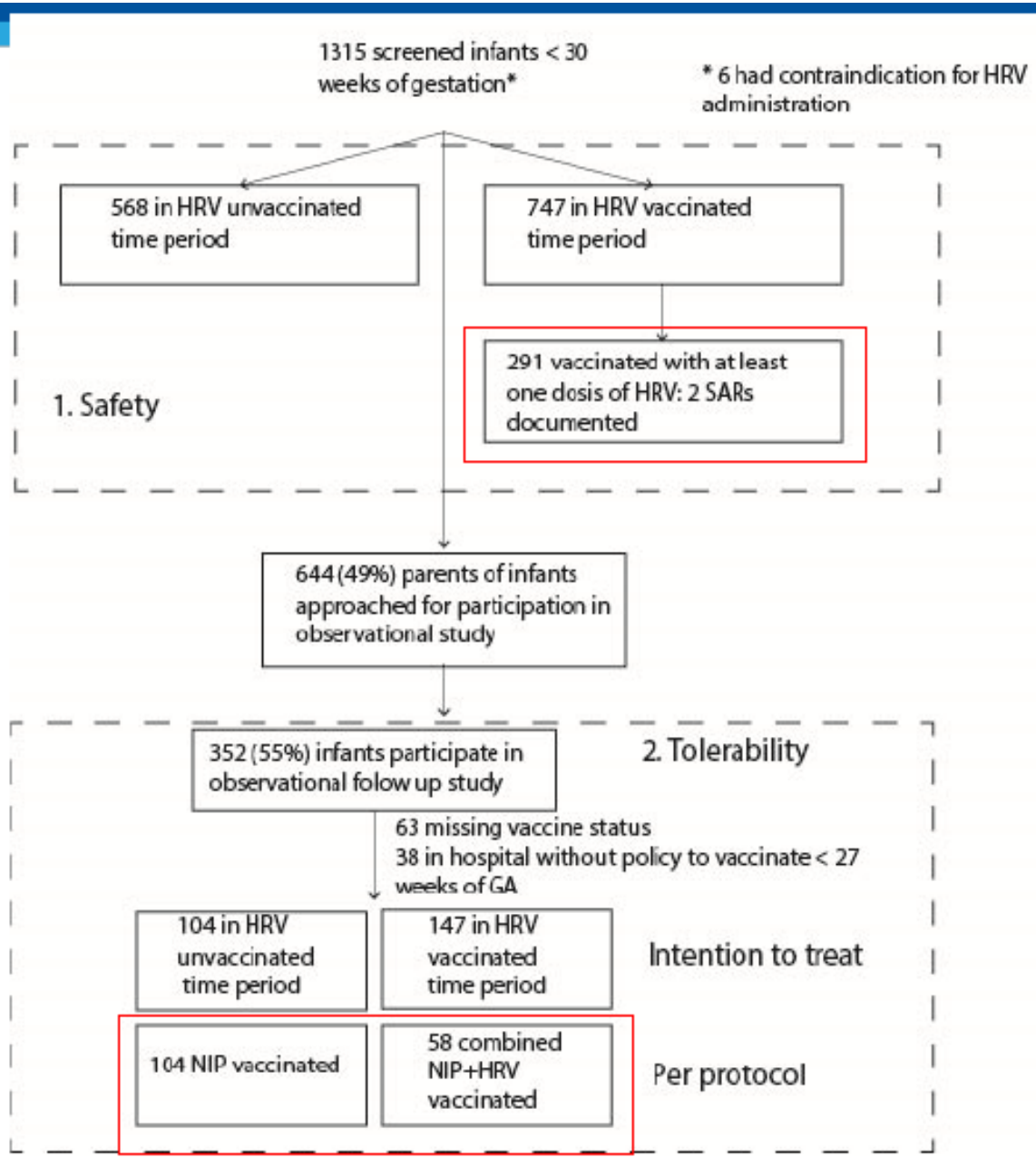
Preliminary study flowchart

Datacollection still ongoing



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Safety

2 SARs documented among 291 vaccinated infants

After second HRV dose

Both in infants with gestational age > 27 weeks

Tolerability in very preterm infants

Solicited symptom	NIP (N=99)	NIP+HRV (N=46)	p-value
Fever	13 (13%)	4 (9%)	0.44
Rash	3 (3%)	0	0.55
Irritability	23 (23%)	15 (33%)	0.23
Loss of appetite	11 (11%)	5 (11%)	0.97
Vomiting	3 (3%)	0	0.55
Loose stools	3 (3%)	5 (11%)	0.05
Bloody stools	0	0	-
Any symptom	43 (43%)	18 (39%)	0.63

*

Tolerability in extremely preterm infants

Solicited symptom*	NIP (N=5)	NIP+HRV (N=12)
Fever	2 (40%)	3 (25%)
Rash	0	0
Irritability	4 (80%)	0
Loss of appetite	1 (20%)	2 (17%)
Vomiting	1 (20%)	0
Loose stools	0	2 (17%)
Bloody stools	0	0
Any symptom	4 (80%)	7 (58%)

*

* Given the small groups, no tests for significance have been performed

Tolerability of HRV vaccination

	Variable	No solicited symptom (N=90)	Any solicited symptom (N=72)	Odds ratio (95% CI)
exposure	NIP+HRV vaccinated (n, %)	33 (37)	25 (35)	0.81 (0.41-1.59)
	NIP vaccinated (n, %)	57 (63)	47 (65)	reference
covariates	Age at vaccination in days (median, IQR)	61 (10)	62 (16)	1.01 (0.99-1.03)
	Gestational age in weeks+days (median, IQR)	28+3 (1+2)	28+4 (1+6)	1.13 (0.84-1.53)
	Small for gestational age (n, %)	31 (34)	22 (31)	0.75 (0.36-1.55)
	Congenital pathology (n, %)	8 (9)	4 (6)	0.55 (0.16-1.92)

* CI = confidence interval

Předběžné závěry

SAR in less than 1% of vaccinated infants with uncertain HRV attribution

Simultaneous administration of HRV with NIP vaccines does not affect overall tolerability