ADVANCE POC I Risk pillar - Testing new approaches to monitoring benefit/risk with pertussis vaccines as test case: Incidence rates of safety outcomes of whole-cell pertussis and acellular pertussis vaccines in pre-school children

First published: 14/06/2016

Last updated: 02/07/2024

Study Finalised

Administrative details

EU PAS number

EUPAS13779

Study ID

21721

DARWIN EU® study

No

Study countries

- [ ] Denmark
- [ ] Italy
- [ ] Spain
- [ ] United Kingdom

Study description

RATIONALE: The ADVANCE proof-of-concept (POC) question is to test the system for benefit-risk monitoring of vaccines in Europe. For this POC feasibility study, the research question “Has the initial benefit-risk profile in children prior to school-entry booster been maintained after the switch from whole-cell pertussis (wP) vaccines to acellular pertussis (aP) vaccines?” is used.OBJECTIVES:1. To evaluate participating databases on quality criteria for inclusion in the study.2. To provide incidence rates of specific events (i.e. injection site reactions, fever, somnolence, persistent crying, irritability, febrile or afebrile seizure/convulsion, hypotonic-hyporesponsive episode HHE, extensive limb swelling) within risk periods after each dose of wP or aP vaccine and within the periods outside the risk windows (baseline) in pre-school children for a benefit/risk analysis model.3. To provide calendar time specific incidence data as test for methods development in ADVANCE WP4.STUDY DESIGN: is a retrospective dynamic cohort study.The study will be conducted utilizing electronic health care data from ADVANCE partners in different European countriesPOPULATION: The study population will comprise all children registered in any of the participating databases during the study period and for whom an adequate start and end of follow-up and date of birth can be defined.Children will be followed from start of the study period, one month after date of birth, or date of valid data in the database (whichever is the latest) until the end of study period (31-12-2015, the school-entry pertussis booster, transferring out of the database, death, reaching age 6 years: whichever is the earliest).Data Analysis: incidence rates (i.e. baseline and risk-window specific) of known adverse reactions following vaccination with pertussis-containing vaccines for use in a multi-criteria

decision analysis (MCDA) model of benefits and risks of wP versus aP pertussis vaccines.

Study status

Finalised

Research institutions and networks

Institutions

Erasmus Medical Centre Rotterdam

First published: 01/02/2024

Last updated: 01/02/2024

Institution

Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina, IDIAPJGol

Spain

First published: 05/10/2012

Last updated: 23/05/2025

Institution | Educational Institution | Laboratory/Research/Testing facility | Not-for-profit | ENCePP partner

SSI Denmark, BIFAP Spain, FISABIO Spain, THIN UK

Networks

Accelerated development of vaccine benefit-risk collaboration in Europe (ADVANCE)

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Network

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Daniel Weibel

Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 01/10/2013

Actual: 01/10/2013

Study start date
Planned: 01/06/2016

Actual: 01/06/2016

Date of final study report
Planned: 01/06/2016

Actual: 17/08/2017

Sources of funding

- EU institutional research programme

More details on funding

IMI

Study protocol

ADVANCE POC-Risk-Protocol.pdf (1.84 MB)

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study topic:

Disease /health condition

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Assessment of risk minimisation measure implementation or effectiveness

Data collection methods:

Secondary use of data

Main study objective:

1. To evaluate participating databases on quality criteria for inclusion in the study 2. To provide incidence rates within specific risk windows after each dose of wP or aP vaccine in pre-school children and within the periods outside the risk windows (baseline) for a benefit/risk analysis model3. To provide calendar time specific incidence data as test for methods development in ADVANCE WP4.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Study drug International non-proprietary name (INN) or common name

PERTUSSIS VACCINE

Medical condition to be studied

Injection related reaction

Somnolence

Crying

Convulsion in childhood

Lip swelling

Population studied

Short description of the study population

All children registered in any of the participating databases during the study period and for whom an adequate start and end of follow-up and date of birth can be defined.

Age groups

Infants and toddlers (28 days – 23 months)

Children (2 to < 12 years)

Estimated number of subjects

10000000

Study design details

Outcomes

Exposure of interestAny wP vaccines and aP pertussis-containing vaccines and their doses in the vaccine schedule (D1, D2, D3, D4, D5)Outcomes Injection site reactions: erythema, edema, induration/nodule/sterile abscess,

pain/tenderness Fever Somnolence Persistent crying, irritability Generalized convulsive seizures HHE Extensive limb swelling

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Data analysis plan

Data Analysis: The purpose of this study is to provide incidence rates (i.e. baseline and risk-window specific) of known adverse reactions following vaccination with pertussis-containing vaccines for use in a multi-criteria decision analysis (MCDA) model of benefits and risks of wP versus aP pertussis vaccines (models are described in a separate benefit-risk study protocol). In some more recent databases, wP information will not be captured. To generate risk-window specific incidence rates for the wP period in these databases, the IR ratio originating from an SCCS analysis of wP versus baseline in other databases will be multiplied by the baseline IR.

Documents

Study results

ADVANCE D5 6_ExecSummaryEU-PAS.docx.pdf (221.73 KB)

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Signed checklist for study protocols

ENCePPChecklistforStudyProtocols ADVANCE POC risk.doc.pdf (117.04 KB)

Data sources

Data source(s)

THIN® (The Health Improvement Network®)

Danish registries (access/analysis)

The Information System for Research in Primary Care (SIDIAP)

BIFAP - Base de Datos para la Investigación Farmacoepidemiológica en el Ámbito Público (Pharmacoepidemiological Research Database for Public Health Systems)

ARS Toscana

Data sources (types)

Administrative healthcare records (e.g., claims)

Electronic healthcare records (EHR)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

Unknown