NESTED CASE-CONTROL STUDY TO ASSESS THE ASSOCIATION BETWEEN THE USE OF METHYLPHENIDATE AND THE RISK OF VALVULAR HEART DISEASE AND PULMONARY HYPERTENSION

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Study Finalised

Administrative details

EU PAS number

EUPAS12083

Study ID

33437

DARWIN EU® study

No

Study countries

Spain

Study description

OBJETIVE: To assess the association between the use of methylphenidate and the risk of valvular heart disease (VHD) and pulmonary hypertension (PH).STUDY DESIGN: We will perform a case-control study nested in the BIFAP cohort, a database maintained by the Spanish Medicines Agency. Cases will be defined as patients between 5 and 25 years of age and a first diagnosis of VHD or PH, recorded in the BIFAP database between 2002 and 2014. Information on exposures between 2002 and 2014 will be collected. We will select up to 10 controls matched with cases by age, gender and calendar year. We will evaluate the use of methylphenidate before the case index date or the corresponding date among controls. We will test the robustness of the results by repeating the analysis in patients diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). DATA ANALYSIS: We will compute odds ratios of VHD and PH according to methylphenidate use using conditional logistic regression, adjusting for matching factors and potential confounders (smoking status, cardiovascular diseases, diabetes, COPD...).

Study status

Finalised

Research institutions and networks

Institutions

Navarre Health Service

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Institution

Contact details

Study institution contact

Luis Carlos Saiz lsaizfer@navarra.es

Study contact

lsaizfer@navarra.es

Primary lead investigator

Luis Carlos Saiz

Primary lead investigator

Study timelines

Date when funding contract was signed

Actual: 04/12/2015

Study start date

Planned: 01/03/2016

Actual: 01/03/2016

Date of final study report

Planned: 05/12/2016

Actual: 04/01/2017

Sources of funding

- Other

More details on funding

Navarre Health Department

Study protocol

Protocol_Spanish_v151127.pdf (102.74 KB)

Protocol_Spanish_v161018.pdf (103.5 KB)

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 type list

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:

To study if use of metylphenidate, compared to 'no use', is associated to a greater incidence of heart valve disease and/or pulmonary hypertension.

Study Design

Non-interventional study design

Case-control

Study drug and medical condition

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

METHYLPHENIDATE

Medical condition to be studied

Attention deficit hyperactivity disorder

Mitral valve prolapse

Mitral valve incompetence

Cardiac valve disease

Mitral valve disease

Tricuspid valve disease

Mitral valve disease mixed

Aortic valve disease

Congenital aortic valve incompetence

Pulmonary hypertension

Population studied

Short description of the study population

Cases were patients between 5 and 25 years of age and a first diagnosis of valvular heart disease (VHD) or pulmonary hypertension (PH), recorded in the BIFAP database between 2002 and 2014. Up to 10 controls matched with cases by age, gender and calendar year.

Age groups

- Adolescents (12 to < 18 years)
- Children (2 to < 12 years)
- Adults (18 to < 46 years)

Special population of interest

Other

Special population of interest, other

Patients with valvular heart disease (VHD) and pulmonary hypertension (PH)

Estimated number of subjects

16500

Study design details

Data analysis plan

In order to describe the variables considered for cases and controls, frequency distribution will be provided for categorical variables (sex, smoking, etc). Regarding quantitative variables (BMI), measures of central tendency and dispersion will be offered, as mean (SD) and median (Inter Quartile Range). In addition, categorical variables will be compared with X2 test or Fisher test, and continuous variables with t-Student test or Mann-Withney test.In order to estimate the pulmonary hypertension (PH) and heart valve disease (HVD) risk associated to methylphenidate use, we will use conditional logistic regression models, adjusting by other potential confounding factors. Odd ratios adjusted by age, sex and confounding factores will be calculated.In the main analysis, we will compare the PH and HVD risk for patients exposed and no exposed to methylphenidate and assess its increase depending on the duration of prescriptions.We will also explore effects in new, recent and past users

Documents

Study results

Results_ENCePP.pdf (21.1 KB)

Study publications

Saiz LC, Gil M, Alonso A, Erviti J, Garjón J, Martínez M. Use of methylphenidat...

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.

Conflicts of interest of investigators

CoI_AAlonso.pdf (19.62 KB)

CoI_CCalvo.pdf (1.01 MB)

CoI_JBerjon.pdf (147.76 KB)

CoI_JErviti.pdf (20.39 KB)

CoI_JGarjon.pdf (570.86 KB)

CoI_LCSaiz.pdf (165.43 KB)

CoI_LMuruzabal.pdf (131.73 KB)

CoI_MMartinez.pdf (186.78 KB)

Data sources

Data source(s)

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

Data sources (types)

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

No