Does metamizole cause less kidney injury than non-steroidal anti-inflammatory drugs when administered in combination with diuretics and antihypertensives? (Triple whammy with metamizole)

First published: 26/04/2023

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Study Planned

Administrative details

EU PAS number

EUPAS104667

Study ID

104941

DARWIN EU® study

No

Study countries

Spain

Study description

The term "triple whammy" (TW) corresponds to the concurrent use of diuretics, renin-angiotensin-aldosterone system inhibitors (RAASI) and non-steroidal anti-inflammatory drugs (NSAIDs). These therapeutic classes have an impact on kidney function in various ways, such as by causing hypovolemia and decreasing glomerular perfusion and thus filtration rate. The objective of this study is to compare the impact of the exposure to the TW combination that includes metamizole as compared to the TW that includes an NSAID in terms of risk of hospitalisation for AKI, need for renal replacement therapy (RRT) and all-cause mortality during hospitalisation. The difference between the TW that includes metamizole and that which includes an NSAID on the change in serum creatinine (sCr) and the estimated glomerular filtration rate (eGFR) during the first year after the beginning of the exposure to TW will also be analyzed.

Study status

Planned

Research institutions and networks

Institutions

Navarre Health Service

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Institution

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Dulce Maria Calvo Barbado

Primary lead investigator

Study timelines

Date when funding contract was signed
Planned: 18/11/2019

Study start date
Planned: 01/05/2023

Data analysis start date
Planned: 25/09/2023

Date of final study report
Planned: 11/03/2024

Sources of funding

- Other

More details on funding

Government of Navarre

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 type:

Non-interventional study

Scope of the study:

Assessment of risk minimisation measure implementation or effectiveness

Main study objective:

to compare the impact of the exposure to the TW combination that includes metamizole as compared to the TW that includes an NSAID in terms of risk of hospitalisation for AKI

Study Design

Non-interventional study design

Case-control

Study drug and medical condition

Anatomical Therapeutic Chemical (ATC) code

(C03X) OTHER DIURETICS

OTHER DIURETICS

(C09C) ANGIOTENSIN II RECEPTOR BLOCKERS (ARBs), PLAIN

ANGIOTENSIN II RECEPTOR BLOCKERS (ARBs), PLAIN

(M01A) ANTIINFLAMMATORY AND ANTIRHEUMATIC PRODUCTS, NON-STEROIDS

ANTIINFLAMMATORY AND ANTIRHEUMATIC PRODUCTS, NON-STEROIDS

(N02BA) Salicylic acid and derivatives

Salicylic acid and derivatives

Medical condition to be studied

Acute kidney injury

Population studied

Age groups

- Adults (18 to < 46 years)
- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

Special population of interest

Renal impaired

Estimated number of subjects

50.000

Study design details

Outcomes

hospitalization for AKI, Need for RRT during hospitalization due to AKI (analyzed in the participants who suffered hospitalization for AKI-cases) All-cause mortality during hospitalization (analyzed in the participants who suffered hospitalization for AKI-cases) Change in sCr and eGFR

Data analysis plan

The comparison of categorical variables between cases and controls will be analyzed through the Chi-square test or Fisher's test, and in the case of quantitative variables through the t-Student or Mann-Whitney test. The association between the exposure and the risk of hospitalization due to AKI will be analyzed using conditional logistic regression models, adjusting for possible confounding factors. The adjusted Odds Ratio and 95% confidence interval will be estimated. Sensitivity analyses of the primary outcome restricting to cases and controls with eGFR or sCr data in the 12 months prior to the index date. A subgroup analysis of the risk of hospitalisation for AKI will be performed in: patients older than 75 year and patients with eGFR <60 mL/min

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.

Data sources

Data source(s), other

BIFAP Spain

Data sources (types)

Disease registry

Electronic healthcare records (EHR)

Other

Data sources (types), other

Case-control surveillance database

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