Systemic glucocorticoids in the treatment of COVID-19 and risks of adverse outcomes in COVID-19 patients in the primary and secondary care setting (Corticosteroids in COVID19)

First published: 22/12/2020

Last updated: 12/06/2024

Study | Finalised

Administrative details

PURI

https://redirect.ema.europa.eu/resource/46063

EU PAS number

EUPAS38759

Study ID

46063

DARWIN EU® study

No

Study countries

Belgium

France

Germany

Italy

Spain

United Kingdom

Study description

Approximately 10-20% of COVID-19 positive patients, many of whom are older or have co-morbidities, suffer from pneumonia and acute respiratory distress syndrome (ARDS), requiring hospitalization and ventilatory support. As a result, current treatment recommendations are to combine anti-viral therapy with immunosuppressive or immunomodulatory drugs to mitigate these immunologic complications, reducing COVID-19 associated morbidity and mortality. While the search for appropriate anti-viral therapy is ongoing, there have been some positive results with respect to systemic glucocorticoid use, such as dexamethasone, which has been associated with reduced mortality in ventilated patients and those on supplemental oxygen therapy. This has mobilised efforts to repurpose some of these steroids for the treatment of severe COVID-19 cases. The aim of this study is to explore patterns of systemic glucocorticoid use and administration in patients with either a first confirmed diagnosis for COVID-19 (diagCOVID-19) or a first positive PCR test for SARS-CoV-2 (labCOVID-19). In addition, we will also study the risks of adverse events associated with these medications, as well as disease outcomes, in diagCOVID-19 or labCOVID-19 patients across seven European countries in ambulatory and hospital inpatient care settings.

Study status

Finalised

Research institution and networks

Institutions

Real-World-Evidence, IQVIA NL

Netherlands

First published: 25/11/2022

Last updated: 20/06/2024

Institution | Other | ENCePP partner

Erasmus University Netherlands, Oxford University UNited Kingdom

Networks

Evidence for COVID-19 Observational Research Europe (E-CORE)

Belgium

Croatia

France

Germany

Italy

United Kingdom (Northern Ireland)

First published: 10/03/2021

Last updated: 12/06/2024

Network ENCePP partner

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Deborah Layton

Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 01/06/2020

Actual: 01/06/2020

Study start date

Planned: 05/04/2021

Actual: 01/09/2021

Data analysis start date

Planned: 05/05/2021

Actual: 20/09/2021

Date of final study report

Planned: 27/07/2021

Actual: 27/09/2021

Sources of funding

- EMA

Study protocol

COVID 19 and steroid treatments_v4.0 clean.pdf(1.3 MB)

COVID 19 and steroid treatments_v5.0 Clean.pdf(1.26 MB)

Regulatory

Was the study required by a regulatory body?

Yes

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

Disease epidemiology

Drug utilisation

Data collection methods:

Secondary data collection

Main study objective:

To describe utilization of systemic glucocorticoids (e.g. dexamethasone, prednisolone, methylprednisolone or hydrocortisone) for treatment of COVID-19 in two settings: hospitalized (in hospital care) and ambulatory (any care received outside of hospital) within 90 days following COVID-19 diagnosis.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Anatomical Therapeutic Chemical (ATC) code

(H02AB02) dexamethasone

(H02AB04) methylprednisolone

(H02AB06) prednisolone

(H02AB07) prednisone

(H02AB09) hydrocortisone

Medical condition to be studied

SARS-CoV-2 test

Population studied

Short description of the study population

The study population will be comprised of a cohort of diagCOVID-19 or labCOVID-19 patients in the database within the study time period.

Inclusion Criteria

Four cohorts will be created based on healthcare setting and type of steroid use. Their eligibility criteria being described below (using Covid-19 catch)

Ambulatory prevalent user

- Have at least 365 days of continuous observation time prior to cohort entry (COVID-19 diagnosis)
- Have a glucocorticoid (oral or parenteral) exposure in the 3 to 120 days prior to diagnosis date (unrelated to COVID-19 diagnosis)
- Have a positive PCR test for SARS-CoV-2 (labCOVID-19) or a confirmed COVID-19 diagnosis (diagCOVID-19)
- Have no hospitalizations in the 30 days prior to or on index

Ambulatory naive user

- Have at least 365 days of continuous observation time prior to cohort entry

(COVID-19 diagnosis)
- Have no glucocorticoid (oral or parenteral) exposure in the 3 to 120 days prior to index (unrelated to COVID-19 diagnosis)
- Have a positive PCR test for SARS-CoV-2 (labCOVID-19) or a confirmed COVID-19 diagnosis (diagCOVID-19)
- Have no hospitalizations in the 30 days prior to or on index

Hospitalized prevalent user
- Have a glucocorticoid (oral or parenteral) exposure in the 120 days prior to index (unrelated to COVID-19 diagnosis)
- Have a positive PCR test for SARS-CoV-2 (labCOVID-19) or a confirmed COVID-19 diagnosis (diagCOVID-19) (index date)
- Diagnosis for COVID-19 during a hospitalisation where the start date of hospitalisation is <30 days before diagnosis or hospitalised within 30 days after diagnosis Have no intensive services in the 30 days prior to or on index

Hospitalized naïve user
- Have no prior exposures to glucocorticoids in the 3 to 120 days prior to index
- Have a positive PCR test for SARS-CoV-2 (labCOVID-19) or a confirmed COVID-19 diagnosis (diagCOVID-19)
- Diagnosis for COVID-19 during a hospitalisation where the start date of hospitalisation is <30 days before diagnosis or hospitalised within 30 days after diagnosis Have no intensive services in the 30 days prior to or on index

Exclusion Criteria
Missing age or sex

Age groups
Adults (18 to < 46 years)
Adults (65 to < 75 years)

Adults (75 to < 85 years)

Adults (85 years and over)

Special population of interest

Hepatic impaired

Renal impaired

Estimated number of subjects

153000

Study design details

Outcomes

Adverse events such as infections, hyperglycaemia, hypertension, GI bleeding, composite of cardiovascular events Disease severity outcomes such as - Hospital admission - Venous thromboembolism (VTE) or pulmonary embolism (PE) - Disseminated intravascular coagulation (DIC) - Death of any cause - Intensive services

Data analysis plan

• Descriptive analysis for systemic glucocorticoid use patterns will be carried and stratified by setting, glucocorticoid exposure type (naive, prevalent) and subgroups of special interest. • Kaplan-Meier methods will be used to estimate time to systemic glucocorticoid initiation from COVID-19 diagnosis, stratified by route of administration (oral vs intravenous). • Cohort-specific descriptive statistics summarizing demographic, health and clinical patient characteristics, stratified by setting, glucocorticoid exposure type glucocorticoid (naive, prevalent), and subgroups of special interest will be presented. • Crude incidence (presented as both proportions and rates) for the relevant outcomes for each of the treatment exposure groups will be calculated. • The cumulative incidence rates will be reported at the end of follow-up (30 and 90 days). • Data

will be stratified by setting, glucocorticoid exposure type (naive, prevalent), and subgroups of special interest etc.

Documents

Study results

ECORE Final results v1.0.pdf(4.93 MB)

Study, other information

COVID-19 Report 1_v2.0 Clean.pdf(621.59 KB)

Multicentre collaboration for COVID - Report 4 v1.0 - 27 sept 2021.pdf(385.21 KB)

Data management

Data sources

Data source(s)

THIN® (The Health Improvement Network®)

Integrated Primary Care Information

The Information System for Research in Primary Care (SIDIAP)

Data source(s), other

THIN, IPCI, SIDIAP, IMS LifeLink EMR France, IQVIA Disease Analyzer Germany

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Data sources (types)

Administrative data (e.g. claims)

Electronic healthcare records (EHR)

Other

Data sources (types), other

Hospital databases

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