INPLASY

Asthma and Long Covid a systematic review

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024110009

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 3 November 2024 and was last updated on 3 November 2024.

INTRODUCTION

Review question / Objective Are Patients with asthma more likely to suffer from Long Covid Symptoms than people without Asthma?

Rationale Over the last four years more information concerning the risk of covid-19 infection in people with asthma were obtained. There is good evidence that people suffering from mild/moderate Asthma don't have an increased risk of severe COVID-Infections. Nevertheless there have reports of people suffering from post-COVID symptoms. Goal of this systematic review is to find out if people with asthma are more likely to suffer from Long COVID symptoms and if so from which one.

Condition being studied We aim to compare the prevalence of people with asthma (if possible grouped by severity) and Long COVID symptoms to people without asthma suffering from Long COVID symptoms.

METHODS

Search strategy The search strategies will be adapted to suit each database, and will include a combination of terms relating to or describing: [(COVID-19 OR Coronavirus OR COVID OR SARS-CoV-2)AND asthma AND (Long COVID OR post-acute COVID-19 OR Long-haul COVID OR post-acute Syndrome of Covid-19 OR)
Databases: PubMed, Web of Science, Scopus.

Participant or population Patients being ≥12 weeks after acute confirmed COVID-19 infection with pre-existing asthma condition.

Intervention patients with pre-existing asthma condition.

Comparator patients without pre-existing asthma condition.

Study designs to be included observational (prevalence studies) and interventional (Cross-

sectional studies, cohort studies, randomized control trials and case control studies).

Eligibility criteria
Exclusion Criterias
• Studies with no information about the asthma diagnosis in participants.
• Secondary analysis (i.e. systematic review or meta-analysis),
• Literature in languages other than English.

Information sources
Electronic databases (Web of Science, PubMed, Scopus).

Main outcome(s)
The difference in prevalence of Long COVID symptoms in people with pre-existing asthma compared to people without pre-existing asthma.

Data management
The review will be conducted according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA).

Two researcher scan the titles and abstracts of articles obtained from databases with keywords, and includes them in the pool. Then two researcher will evaluate the full text of articles that meets the inclusion criteria, any disagreement will be resolved by discussing and negotiating with a third investigator. Studies with common consensus will be taken into the systematic review pool.

Full-texts will be independently assessed for eligibility by the two reviewers. Discrepancies will be resolved by an initial discussion or with a third reviewer, if required.

R will be used to calculate the odds ratio with 95% confidence interval, and showing forest plot.

Quality assessment / Risk of bias analysis
Evaluation of the pooled articles with the Newcastle-Ottawa scale (NOS) for quality of study and risk of bias. This scale assess studies in terms of selection, comparability and the ascertainment of outcome of interest. The results indicating quality of studies are as follows: 0-3 point (poor), 4-6 point (intermediate), and 7-9 point (high). Studies with high risk of bias will be excluded during the meta-analysis phase.

Strategy of data synthesis
The odds-ratio of long covid in people with asthma vs people without asthma will be calculated, and additionally compared.
We will use random-effect or fixed-effect model. Heterogeneity will be evaluated with Cochran´s Q, χ^2, and Higgins I^2 test. In the random effect model, it shows substantial level of heterogeneity if $I^2 > 50\%$ and $p < 0.10$.
Publication bias will be evaluated and visualized with funnel plots and Egger´s test.
P values (two-sided) will be considered statistically significant if $p < 0.05$.

Subgroup analysis
If possible we would like to carry out a subgroup analysis by severity of asthma according to GINA-Guidelines.

Sensitivity analysis .

Language restriction
Only English papers will be reviewed, and only human studies will be included.literature in english.

Country(ies) involved Switzerland.

Keywords
Long Covid; Asthma; systematic review.

Contributions of each author
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