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Short Communication

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Use of glucocorticoids in covid 19 patients: systematic review

Summary

Introduction: The disease caused by sars-cov-2, covid 19 can generate, in its serious state, acute respiratory distress syndrome (ARDS), patients who must manage in-hospital, respiratory support, and hospitalization in an intermediate and intensive care unit (ICU), The effectiveness and reduction of morbidity and mortality in this group of patients has been demonstrated with the use of glucocorticoids of the dexamethasone type.

Objectives: To describe the action of glucocorticoids in reducing morbidity and mortality in severe covid 19 patients.

Methods: A search was carried out on the use of dexamethasone-type glucocorticoids in covid 19, in the PubMed, Medline and Google Scholar databases.

Results: Covid 19 with a severe course and ARDS can lead to a hyper-inflammatory state, in which the anti-inflammatory properties of steroids can be an effective therapeutic option. Steroid therapy has provento be useful in stabilizing patients hemodynamically, reducing prolonged stays in hospitalization services, intermediate care units, intensive care units, reducing the duration of mechanical ventilation, and reducing morbidity and mortality in this group of patients, serious patients.

Conclusion: Although upto now there is no established therapy that is 100% effective in the treatment of patients with severe covid, it is important to consider dexamethasone as a therapeutic strategy.

Keywords: dexamethasone, covid19, severe covid19, glucocorticoids, sars-cov-2

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Introduction

The patho-physiological characteristics of severe Covid-19 are characterized by an acute pneumonic process with characteristics of extensive radiological opacity and, at autopsy, diffuse alveolar damage, inflammatory infiltrates, and microvascular thrombosis. Inflammatory organ injury can occur in severe Covid-19, with a subset of patients having elevated levels of inflammatory markers, including C-reactive protein, ferritin, interleukin-1, and interleukin-6.[1] In the RECOVERY trial, dexamethasone was beneficial for participants treated for seven or more days in the symptomatic phase, with hypoxemia onset.[2]

A new phase of clinical trials is currently opening to evaluate the efficacy of drugs for COVID-19. In fact, a wide variety of drug screening assays are currently being conducted to explore the potential efficacy of new and old molecules in SARS-CoV-2.[3-5] In a randomized clinical trial of 299 adults with moderate or severe ARDS due to COVID-19, dexamethasone associated with standard care compared to standard care alone significantly increased the number of days alive and without mechanical ventilation during the first 28 days. Dexamethasone was not associated with an increased risk of adverse events in this population of critically ill COVID-19 patients.[6-8] Dexamethasone may be useful in the short term in severely intubated COVID-19 patients.[9,10]

Proportional and absolute mortality rate reductions varied significantly by level of ventilation, dexamethasone reduced deaths by one third in patients receiving invasive mechanical ventilation, by one fifth in patients receiving oxygen without invasive mechanical ventilation, but it did not reduce mortality in patients who did not receive early ventilation. Before the announcement of the preliminary results of the RECOVERY trial, despite contraindications from the WHO and CDC, corticosteroids had been used globally in up to 50% of patients affected by COVID-19, particularly in China. All of these trials include severe and critical COVID-19 patients with lung involvement. Of the 5 studies (4 retrospective and 1 prospective) performed with cortico steroids, 3 studies have shown a benefit, while 2 studies showed no benefit, and there was a suggestion of significant harm especially in critical cases in one substudy.[11,12]

Material and methods

A search was carried out on the use of dexamethasone-type glucocorticoids in covid 19, in the PubMed, Medline and Google Scholar databases.

Sensitivity analysis

Inclusion criteria:

a. Patients diagnosed with covid 19

b. Patients older than 18 years with covid 19,

c. Use of glucocorticoids in the treatment of mild, moderate and or severe covid 19.

Exclusion criteria:

a. Diabetic patients with covid 19,

b. Children under 18 with a diagnosis of covid 19.

From the clinical setting to the search strategy

Population	Patients diagnosed with covid 19
Intervention	Use of dexamethasone or other glucocorticoids in covid 19
Comparator	Decrease in morbidity and mortality
Outcome	Long stay decrease
Search date range	March 2020- December 2020
Question type	Glucocorticoid treatment
Type of study	Randomized clinical trials, meta-analysis.

Research feasibility

Evaluating the available bibliography, one finds extensive references, meta-analysis case reports, which show the effectiveness of the use of glucocortiocides in patients with moderate and severe covid19. With the execution of this topic review, no harm is generated to an individual, a community, or the environment, it seeks to evaluate the effectiveness of glucocorticoids in covid19. This research does not require financial support, a free access database isused to access information from open access sources PUBMED.

Results

Studies have shown that dexamethasone causes a significant improvement in the results of patients with severe COVID-19 mainly with ventilation.

Conclusion

It is important to describe that to date the world health organization (WHO) has not established a single treatment for the management of severe covid 19, or ARDS due to sars-cov-2, however according to the systematic review that is carried out, it is important to consider the use of glucocorticoids, especially dexamethasone, as an important therapeutic strategy that reduces morbidity and mortality, decreases prolonged stays, in seriously ill patients due to covid 19.

Acknowledgments

None.

Conflicts of interest

Author declares that there is no conflict of interest.

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