BEST DRUG INTERACTION FOR COVID-19 THERAPEUTIC MANAGEMENT: A METANALYSIS

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Abstract

Background and Purpose: The Covid-19 is a viral infection classified as a pandemic by the World Health Organization. There is not currently therapy against the Sars-cov-2. We aimed to assess the best drug therapy approach for the management of Covid-19. Experimental Approach: We did a systematic review and meta-analysis of randomized controlled trials of drugs used in patients with Covid-19. We performed research in the PubMed and the Medrxiv. The trials were included if the patients were over 12 years old, diagnosed through the rt-PCR test and who assessed as primary outcomes or decreased mortality, or time to clinical improvement, or hospitalization time. Random-effects meta-analysis was used to pool individual studies. Heterogeneity was assessed using I². The review has been registered on PROSPERO, number 179879. Key Results: Nine trials were included for analysis. Remdesivir, mainly early after the onset of symptoms, led to a reduction in mortality (OR, 0·85; 95% CI, 0·05 to 0·98; P=0·045). Although this meta-analysis did not observe a reduction using dexamethasone, the Recovery Trial indicates that it can be an option for a patient that needs oxygen support. Our study did not demonstrate the efficacy of any treatment to minimize the effects of Covid-19 related to large hospital stay or time to clinical improvement. Conclusion and Implications: Remdesivir is the only drug that can change the course of Covid-19, reducing mortality rates. Despite this result, other studies must evaluate the effectiveness of this and other drugs in the management of Covid-19 mainly studies with robust methods.

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Figure 1. Flowchart of study selection

Works identified through PubMed (n = 74)

Additional works from other sources (pre-prints and references of works identified through PubMed) (n = 1775)

Papers sorted by title and abstract (n = 1849)

Papers excluded after analyzing the title and abstract (n = 1808)

Analysis of the full text of the works to evaluate eligibility (n = 41)

Excluded after analysis of the full text (n = 32)

1. were not RCTs
2. did not have full text available
3. did not evaluate drug intervention
4. did not measure the outcomes of interest
5. did not have the inclusion criteria

Studies included in the qualitative analysis (n = 9)

Studies included in the quantitative analysis (meta-analysis) (n = 9)
Figure 2. Analysis of the risk of bias

- Lopinavir-ritonavir
  - 1.98 (0.44 to 5.99)
  - 0.85 (0.05 to 0.98)
  - 0.34 (0.07 to 2.21)
  - 3.50 (0.80 to 4.21)

Table 1_characteristics of included studies (1).pdf available at https://authorea.com/users/
379213/articles/495504-best-drug-interaction-for-covid-19-therapeutic-management-a-metanalysis