



Comorbidities in COVID-19: Outcomes in hypertensive cohort and controversies with renin angiotensin system blockers

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ABSTRACT

Background and aims: COVID-19 is already a pandemic. Emerging data suggest an increased association and a heightened mortality in patients of COVID-19 with comorbidities. We aimed to evaluate the outcome in hypertensive patients with COVID-19 and its relation to the use of renin-angiotensin system blockers (RASB).

Methods: We have systematically searched the medical database up to March 27, 2020 and retrieved all the published articles in English language related to our topic using MeSH key words.

Results: From the pooled data of all ten available Chinese studies (n = 2209) that have reported the characteristics of comorbidities in patients with COVID-19, hypertension was present in nearly 21%, followed by diabetes in nearly 11%, and established cardiovascular disease (CVD) in approximately 7% of patients. Although the emerging data hints to an increase in mortality in COVID-19 patients with known hypertension, diabetes and CVD, it should be noted that it was not adjusted for multiple confounding factors. Harm or benefit in COVID-19 patients receiving RASB has not been typically assessed in these studies yet, although mechanistically and plausibly both, benefit and harm is possible with these agents, given that COVID-19 expresses to tissues through the receptor of angiotensin converting enzyme-2.

Conclusion: Special attention is definitely required in patients with COVID-19 with associated comorbidities including hypertension, diabetes and established CVD. Although the role of RASB has a mechanistic equipoise, patients with COVID-19 should not stop these drugs at this point of time, as recommended by various world organizations and without the advice of health care provider.

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1. Introduction

Coronavirus disease 2019 (COVID-19) has been declared as a pandemic by World Health Organization on March 11, 2020, as soon as it satisfied the epidemiological criteria (infection in more than 100,000 people in 100 countries) [1]. As of March 27, 2020, world has witnessed more than half a million cases of COVID-19 with more than 24,000 deaths [2]. This suggests the magnitude of its spread across the world, since it was first reported on December 31, 2019 from Wuhan, Hubei province in China. Emerging data suggests that older COVID-19 patients with other comorbid conditions such as diabetes, hypertension, cardiac and pulmonary disease are

in particular more susceptible, compared to general populations and have higher mortality. Therefore, it is necessary to re-look into these subgroups of COVID-19 patients with associated comorbidities.

In this review article, we have collated all the available evidence that has emerged so far on outcomes and comorbidities in patients with COVID-19. Here, we have focused on outcomes in patients of COVID-19 with hypertension and analyzed the controversies surrounding the use of renin-angiotensin system blockers (RASB).

2. Methods

We have systematically searched the PubMed medical database up till March 27, 2020 using MeSH key words that include Covid-19, coronavirus, hypertension, diabetes, cardiovascular disease, angiotensin receptor blockers, angiotensin converting enzyme

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