

Effects Of ARBs And ACEIs On Virus Infection, Inflammatory Status And Clinical Outcomes In COVID-19 Patients With Hypertension: A Single Center Retrospective Study

Hypertension 2020

Guang Yang, Zihu Tan et al.

<https://www.ahajournals.org/doi/10.1161/HYPERTENSIONAHA.120.15143>

Abstract

With the capability of inducing elevated expression of ACE2, the cellular receptor for SARS-CoV-2, angiotensin II receptor blockers or angiotensin-converting enzyme inhibitors (ARBs/ACEIs) treatment may have a controversial role in both facilitating virus infection and reducing pathogenic inflammation. We aimed to evaluate the effects of ARBs/ACEIs on COVID-19 in a retrospective, single-center study. 126 COVID-19 patients with preexisting hypertension at Hubei Provincial Hospital of Traditional Chinese Medicine (HPHTCM) in Wuhan from January 5 to February 22, 2020 were retrospectively allocated to ARBs/ACEIs group (n=43) and non-ARBs/ACEIs group (n=83) according to their antihypertensive medication. 125 age- and sex-matched COVID-19 patients without hypertension were randomly selected as non-hypertension controls. In addition, the medication history of 1942 hypertension patients that were admitted to HPHTCM from November 1 to December 31, 2019 before COVID-19 outbreak were also reviewed for external comparison. Epidemiological, demographic, clinical and laboratory data were collected, analyzed and compared between these groups. The frequency of ARBs/ACEIs usage in hypertension patients with or without COVID-19 were comparable. Among COVID-19 patients with hypertension, those received either ARBs/ACEIs or non-ARBs/ACEIs had comparable blood pressure. However, ARBs/ACEIs group had significantly lower concentrations of CRP ($p=0.049$) and procalcitonin (PCT, $p=0.008$). Furthermore, a lower proportion of critical patients (9.3% vs 22.9%; $p=0.061$), and a lower death rate (4.7% vs 13.3%; $p=0.216$) were observed in ARBs/ACEIs group than non-ARBs/ACEIs group, although these differences failed to reach statistical significance. Our findings thus support the use of ARBs/ACEIs in COVID-19 patients with preexisting hypertension.