

UPDATE ALERTS

Update Alert: Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults

In this first monthly update of our living review (1), we searched MEDLINE (Ovid) weekly from 4 May to 8 June 2020 using the same search strategy described in the original review, and we also identified additional citations from consultation with content experts. Searches yielded 138 results; independent dual review of these records identified 4 new studies (see Supplement Tables 1 and 2) and 2 in-progress trials for inclusion.

New Evidence

One new retrospective cohort study examined the association between angiotensin-converting enzyme inhibitor (ACEI) or angiotensin-receptor blocker (ARB) use and the likelihood of testing positive for COVID-19 (2). This study included all patients who had testing in 1 health system in 2 different states; patients with symptoms were prioritized for testing at the time so most patients were likely to have been symptomatic. As in the previous review that identified 3 similar studies, neither ACEI nor ARB use was associated with likelihood of testing positive for COVID-19.

This study also examined the association between ACEI or ARB use and COVID-19 illness severity. It found use of these medications was associated with a moderate increase in hospitalization and intensive care unit admission risk but not risk for mechanical ventilation (2). We found an additional 3 new studies evaluating the association between ACEI or ARB use and COVID-19 illness severity. Two were small single-center retrospective cohort studies from China that found that ACEI or ARB use was not associated with an increased risk for death or severe COVID-19 illness (3, 4). A nationwide retrospective cohort study from Korea similarly found that these medications were not associated with severity of illness after adjustment for demographic characteristics, comorbid conditions, and hospital type (5).

The 2 studies from China included small, highly select patient populations and did not describe in detail how ACEI or ARB exposure was determined. The 2 larger studies were generally methodologically sound, although 1 study cautioned that the number of patients treated with ACEI or ARBs who had the outcomes of intensive care unit admission or mechanical ventilation was small (2). (See Supplement Table 3 for methodological strengths and weaknesses of the studies.)

Of note, 1 international study that examined the association between ACEI or ARBs and severity of COVID-19 illness has since been retracted by the journal in which it was published (6). We will no longer consider results of this study in determining overall effects or certainty of evidence.

Overall, the addition of the new studies and the retraction of 1 prior study does not change the findings or certainty of evidence ratings we reported in the original review.

In-Progress Trials

We identified 2 randomized controlled trials, currently in progress, that will compare the effects of continuing or withdrawing ACEI or ARB treatment on clinical outcomes in patients hospitalized with COVID-19. One is a U.S. study (7) and the other is a Brazilian study (8), and both are expected to be completed by the end of 2020.

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