

# ACE-1 INHIBITORS AND ARBS, CAN THEY BE HARMFUL TO COVID PATIENTS?

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# KEY TERMS

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- **Angiotensin-Converting Enzyme 2 (ACE2):** The primary point of entry for SARS-CoV-2. Is an enzyme that primarily converts Angiotensin 2 into Angiotensin 1-7. ACE Inhibitors prevent Angiotensin 2 from being produced, by blocking conversion of Angiotensin 1 to Angiotensin 2.
- **Angiotensin Receptor Blockers (ARBs):** Medication that prevent Angiotensin 2 from binding to the ACE receptor on muscles, which causes blood vessel dilation and reduction in blood pressure.
- **Angiotensin 2:** Hormone that regulates the renal system, and can cause high blood pressure if you have too much that isn't being converted into Angiotensin 1-7.

# ABOUT THIS STUDY

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- This retrospective study aims to study the effects of ACE inhibitors and ARBs against two populations.
- Controls that have not developed extreme COVID-19 symptoms.
- Those that have developed extreme symptoms of COVID-19.
- Aim is to measure the relationship between use of ACE inhibitors and ARBs with the severity of COVID-19 symptoms.

# WHAT'S THE PROBLEM?

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- The hypothesis of this study, and of similar studies, is that the results of these medicines (ARBs and ACE inhibitors) might make patients more susceptible to COVID-19. Both of these medicines have been evaluated to be related in the uptick ACE2 upregulation. With ACE2 being the primary binding site of COVID-19, and uptick in ACE2 activity could pose as an increased risk for acquiring or increasing COVID-19 symptoms.
- Further evaluation is to be done, as currently the human trials have concluded on 4/30/20 but the data was not available.

# WHO DOES THIS IMPACT?

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- The importance of this study is to find best possible treatments for patients who are predisposed to high blood pressure before contracting COVID-19.
- Overall, how can their already high blood pressure be managed without risking more severe reactions to COVID-19?

# CITATIONS

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- “ACE Inhibitors, Angiotensin II Type-I Receptor Blockers and Severity of COVID-19 - Full Text View.” *ACE Inhibitors, Angiotensin II Type-I Receptor Blockers and Severity of COVID-19 - Full Text View - ClinicalTrials.gov*, 23 Mar. 2020, [clinicaltrials.gov/ct2/show/NCT04318418?term=2019-nCoV&cond=covid-19&draw=2](https://clinicaltrials.gov/ct2/show/NCT04318418?term=2019-nCoV&cond=covid-19&draw=2).