Response to "ACE-2 downregulation and incidence of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) infection"

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Disclosures: Dr. Dublin has received grant funding from Jazz Pharmaceuticals and GSK for unrelated work. Dr. Shortreed has been a co-Investigator on Kaiser Permanente Washington Health Research Institute (KPWHRI) projects funded by Syneos Health, who is representing a consortium of pharmaceutical companies carrying out FDA-mandated studies regarding the safety of extended-release opioids. Dr. Floyd has consulted for Shionogi Inc. Dr. Psaty serves on the Steering Committee of the Yale Open Data Access Committee funded by Johnson & Johnson. From September 2019 to December 2020, Dr. Green is serving as a co-Investigator on a contract awarded to the Kaiser Foundation Health Plan of Washington from Amgen to evaluate the accuracy of using electronic health record data to identify individuals with reduced ejection fraction heart failure. Other authors have nothing to disclose.

To the Editor: We appreciate the questions raised by Drs. Weir, Glen and McDowell in their letter to the Editor referencing our recent paper about SARS-CoV-2 infection in relation to use of angiotensin converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs).[1] They propose that inhibiting ACE-2, the receptor by which SARS-CoV-2 enters cells, might be beneficial in preventing infection or severe outcomes and ask whether we could examine the association between use of aliskiren, a direct renin antagonist thought to downregulate ACE-2, and risk of SARS-CoV-2 infection or severe disease. We looked at our data and found that in the population we studied, aliskiren use was so rare that we would not have adequate power to examine this question. In the past year, patients in our healthcare system were dispensed fewer than 30 prescription fills for aliskiren. For comparison, there were about 150,000 medication dispensings for lisinopril, the most commonly used ACEI. The idea that downregulation of ACE-2 could protect against SARS-CoV-2 infection or severe disease is intriguing and warrants further exploration. We would be interested to know if there are other, more commonly used medications that downregulate ACE-2 that could be the subject of future research.

References

1. Dublin S, Walker R, Floyd JS, Shortreed SM, Fuller S, Albertson-Junkans L, Harrington LB, Greenwood-Hickman MA, Green BB, Psaty BM. Renin-angiotensin-aldosterone system inhibitors and COVID-19 infection or hospitalization: a cohort study. Am J Hypertens 2020;hpaa168. doi: 10.1093/ajh/hpaa168. Online ahead of print.