Statins in Patients with COVID-19: A Retrospective Cohort Study

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The coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has profoundly affected the lives of millions of people. To date, there is no approved vaccine or specific drug to prevent or treat COVID-19, while the infection is spreading at an alarming rate globally. Because the development of effective vaccines or novel drugs could take several months (if not years), repurposing existing drugs is considered a more efficient strategy that could save lives now. Statins constitute a class of lipid-lowering drugs with proven safety profiles and many known beneficial pleiotropic effects. Our previous investigations showed that statins have antiviral effects and are involved in the process of wound healing in the lung. This triggered us to evaluate if statin use reduces mortality in COVID-19 patients. Results: After initial recruitment of 459 patients with COVID-19 (Shiraz province, Iran) and careful consideration of the exclusion criteria, a total of 150 patients, of which 75 received statins, were included in our retrospective study. Cox proportional-hazards regression models were used to estimate the association between statin use and rate of death. After propensity score matching, we found that statin use appeared to be associated with a lower risk of morbidity [HR=0.85, 95% CI=(0.02, 3.93), P=0.762] and lower risk of death [(HR= 0.76; 95% CI=(0.16, 3.72), P=0.735)]; however, these associations did not reach statistical significance. Furthermore, statin use reduced the chance of being subjected to mechanical ventilation [OR=0.96, 95% CI=(0.61–2.99), P=0.942] and patients on statins had a more normal computed tomography (CT) scan result [OR=0.41, 95% CI= (0.07–2.33), P=0.312]. Conclusions: Although we could not demonstrate a significant association between statin use and a reduction in mortality in patients with COVID19 , we do feel that our results are promising and of clinical relevance and warrant the need for prospective randomized controlled trials and extensive retrospective studies to validate the potential beneficial effects of statin treatment on clinical symptoms and mortality rates associated with COVID-19.

Biography

Payam Peymani is Currently Senior Postdoctoral Fellow Researcher at Department of Pharmacoepidemiology, College of Pharmacy, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, Canada. He is the author of more than 60 peer review papers, and participated and gave presentation in more than 40 international Congress / symposia and has been a reviewer of various international scientific journals. Dr. Peymani has a more than 6 years' experience of designing, conducting, and Analysis-documentation of population-based/Cohort, clinical trials, drug utilization, drug safety, and pharmacoepidemiology studies. Dr Peymani was a Postdoctoral Researcher at Department of Epidemiology, Erasmus University Medical Center Rotterdam, the Netherlands for 8 months. Dr Peymani obtained his postdoctoral fellowship from Department of Clinical Pharmacology & Toxicology, University Hospital Zürich, Switzerland in 2019-2020 and PhD of Clinical Pharmacology (Pharmacoepidemiology) from Shiraz University of Medical Sciences in 2016. He received his Pharmacy Doctorate (Pharm.D) degree in Pharmaceutical Sciences from Faculty of Pharmacy, Shiraz University of Medical Sciences in 2010. His main research interest is Pharmacoepidemiology, Pharmacovigilance, Pharmacogenetic/Genomics with a specific focus on vulnerable populations.

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