A higher rate of infection in our study... turned out to be positive and (iii) Travel risk and Shielding status) and only Infectious Contacts, Occupational risk, screen questions around Symptoms, based on SCOTS criteria (telephone... The risk of a HCWs getting infection. The risk of a HCWs getting... 42% of patients were tested... deceleration phase of infection... the UK study could be due to multiple reasons: (1) deceleration phase of infection... within 48–72 hours... CI; 0.8% -t 11.4% with continuity correction... patients developed COVID-19... 3Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh, India: Roshan George, Arpan Jain, Anurag Mishra, Sanjeev Shah. Gobind Ballabh Pant Hospital, New Delhi, India: Ptaviva Chandra, Samir Mohindra, Vivek Saraswat, Jimil Chowdhury, Amit Kumar Dutta, John Titus George, Rajeeb Jaleel, Anjilivelil Joseph, Ebby George Simon. Christian Medical College, Gaurav Muktesh, Praveer Rai, Jayanta Samanta, Vishal Sharma, Jayendra Shukla. Christian Medical College, Shubham Prasad, Mahendra Singh Rajput, Atul Rana, Mohta, Sandeep Kumar Mundhra, Piyush Pathak, Kante, Kanav Kaushal, Saurabh Kedia, Soumya Jagannath,1 Ashish Agarwal,1 Professor Anoop Saraya,1 Department of Gastroenterology and Human Nutrition,1 Department of Gastroenterology and Human Nutrition, Chandigarh, India: Pabitra Sahu, Rahul Sethia, Shalimar, Anoop Saraya,3 Vivek A Saraswat,6 in India during that period... post-1806... of outpatient diagnostics depending on... external peer reviewed.

The authors have not declared a specific... Do proton pump inhibitors influence SARS-CoV-2 related outcomes? A meta-analysis... The article by Lee et al showed that the current use of proton pump inhibitors... Do proton pump inhibitors influence SARS-CoV-2 related outcomes? A meta-analysis...
(PPIs) increased the risk of severe clinical outcomes of COVID-19 rather than the susceptibility to SARS-CoV-2 infection in a Korean nationwide cohort. Instead, a significant association between susceptibility to SARS-CoV-2 infection and current use of PPIs, either one time or two times a day, was found by another recent study based on US nationwide data. The conflicting results of these two large-scale observational studies may be due to regional epidemiological differences or considerable between-study variance and might compromise clinical decision-making. As the impact of PPI use on SARS-CoV-2 infection has very relevant clinical implications, we performed a meta-analysis to address the aforementioned discrepancies, which could lead to better informed clinical decision-making on PPI use during the ongoing pandemic.

We scrutinised 3413 records retrieved from a comprehensive search using the COVID-19 Research Articles Downloadable Database maintained by the US CDC (https://www.cdc.gov/library/researchguides/2019novelcoronavirus/ researcharticles.html) and ultimately included 16 studies from 10 countries or regions reporting comparative data on PPI use and clinical outcomes of COVID-19 (online supplemental figure 1 and table). We pooled the data using an inverse variance-weighted random-effect model. Pooled estimates are presented as OR, HR or mean difference (MD), with associated 95% CIs. Intensive care unit admission, mechanical ventilation, acute respiratory distress syndrome or death were considered severe outcomes of COVID-19.

Six studies including 318261 participants reported data on PPI usage and the risk of SARS-CoV-2 infection. Among them, five studies had information of current PPI users compared with non-users and four on past PPI users versus non-users. Analysis of five studies encompassing 145428 patients who were tested for SARS-CoV-2 showed that the risk of SARS-CoV-2 infection was higher, although not significantly, among current PPI users (OR 1.33, 95% CI 0.86 to 2.07, p=0.20; figure 1) compared with PPI non-users, with evidence of substantial between-study heterogeneity (I²=97%). Moreover, in a subgroup analysis of non-Korean cohorts, we found a significant association between current use of PPIs and increased risk of SARS-CoV-2 infection (OR 1.94, 95% CI 1.59 to 2.36, p<0.001; online supplemental figure 2). Furthermore, a leave-one-out sensitivity analysis revealed that the summary estimate of the association between current PPI usage and SARS-CoV-2 infection was overly influenced by a single Korean study (online supplemental figure 4), indicating that this association was strong. Furthermore,
Current PPI users tended to hospitalised longer than PPI non-users, although not by a statistically significant margin (n=353 from two studies; MD 1.13, 95% CI −0.18 to 2.43, p=0.09; figure 2). Finally, past use of PPIs was not associated with increased susceptibility to SARS-CoV-2 infection (n=1,728,33 from four studies; OR 0.85, 95% CI 0.57 to 1.27, p=0.43; I²=92%; figure 1) or with severe outcomes of COVID-19 (n=40,097 from three studies; OR 1.03, 95% CI 0.85 to 1.23, p=0.79; I²=0%; figure 2).

In summary, this meta-analysis shows that regional differences can explain the heterogeneous findings concerning the association between current PPI use and incidence of SARS-CoV-2 infection and further underscores the increased risk of severe COVID-19 outcomes associated with current PPI use, highlighting that caution should be exercised when treating patients receiving PPIs during the COVID-19 pandemic. Further studies investigating different dosing regimens and durations of PPI use on COVID-19 outcomes should be warranted.

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**REFERENCES**