FAQ: What is the Role of Famotidine in the Treatment of COVID-19?

There are currently no published clinical data to support the use of famotidine in COVID-19; however, researchers in New York are investigating this potential therapy. Interest in famotidine first emerged in Wuhan, when providers noticed decreased mortality among elderly patients of lower economic status compared to their wealthier peers. Physicians noted that many survivors were taking famotidine for gastroesophageal reflux (GERD) in contrast to omeprazole, which is the favored GERD therapy among wealthier citizens. While observed death rates were lower among patients receiving famotidine, it is important to point out that this was a crude, retrospective analysis that did not provide statistically meaningful results. The original data set also remains unpublished.[1]

After this observation, researchers set out to determine whether or not famotidine had a role in the treatment of COVID-19. According to an article in Science, computational chemists involved in this research hypothesize that famotidine has the potential to bind to an enzyme responsible for SARS-CoV-2 replication; however, this analysis is based on crude modeling that does not include the 3D structure of the virus. Currently, the proposed mechanism of famotidine for the treatment of COVID-19 remains unknown.[1]

In early April, Northwell Health in New York City launched efforts to treat COVID-19 patients with famotidine as part of a clinical trial. On April 30, this adaptive trial was posted on clinicaltrials.gov and indicates they will evaluate high-dose famotidine in combination with hydroxychloroquine, hydroxychloroquine alone, and historical standard of care to evaluate a primary endpoint of 30-day mortality. Patients enrolled in the trial must have radiographically confirmed COVID-19 with or without SARS-CoV-2 laboratory-confirmed disease. There are several exclusion criteria, which notably include patients with moderate-to-severe renal insufficiency, hepatotoxicity or predisposing factors, and current QT prolongation or history.[2]

DASON does not currently endorse high-dose famotidine for the treatment of COVID-19 outside of clinical trials due to a lack of published evidence on its safety and efficacy. We also would like to highlight that high doses of famotidine may pose serious risks to patients with underlying renal insufficiency.[3] Further, DASON does not currently recommend selection of ongoing therapy for GERD based on any potential benefit of famotidine.

References:

1. Borrell B. New York clinical trial quietly tests heartburn medicine against coronavirus. Science Magazine. 26 April 2020. Accessed online at: https://www.sciencemag.org/news/2020/04/new-york-clinical-trial-quietly-tests-heartburn-remedy-against-coronavirus#
2. Multi-site adaptive trials using hydroxychloroquine for COVID-19. Accessed 3 May 2020 at: https://clinicaltrials.gov/ct2/show/NCT04370262?term=famotidine&cond=COVID-19&draw=2&rank=1
3. Famotidine: Drug Information. Lexicomp Online, Lexi-Drugs Online, Hudson, Ohio: Wolters Kluwer Clinical Drug Information, Inc.; 2013; May 3, 2020.

Reviewed on 5/4/20.