Ivermectin FAQ

Ivermectin is an antiparasitic agent that was originally approved by the FDA for treatment of onchocerciasis and intestinal strongyloidiasis in 1998. Interest in the use of ivermectin for COVID began early in the course of the pandemic when a study published by scientists in Australia demonstrated in vitro activity against SARS-CoV-2.1 While the initial promising “in vitro” anti-viral activity of ivermectin against SARS-CoV2 gained much attention by the medical communities and lay press, uncertainties remained about the ability to achieve human plasma concentrations required to emulate these in vitro results. The concentration used in the study by Caly et al. was approximately 50-fold greater than concentrations achieved with current clinical regimens. The authors did not recommend ivermectin as a safe and effective treatment option for COVID-19, but rather call for in vivo research to further explore their preliminary findings. 1 Prior “in vitro” studies demonstrated promising anti-viral activity of ivermectin for Dengue virus, which is also a single-stranded RNA virus, but further “in vivo” trials have shown no clinical benefits in humans. 2-3

In early 2021, there was a renewed interest in ivermectin for COVID-19 treatment. Its use was promoted by the Front Line COVID-19 Critical Care Alliance and initial results of a meta-analysis conducted by a researcher at the University of Liverpool were released.4 In response, the NIH COVID treatment guideline panel updated their recommendation on ivermectin on January 14, 2021.5 The panel states that at this time, there are insufficient data to recommend either for or against the use of ivermectin for the treatment of COVID-19. Their updated review of the literature included a variety of study methodologies: randomized trials, retrospective cohort studies, and non-peer-reviewed reports. Some studies showed worsening of disease or no benefits in patients who received ivermectin6-9, others reported shortening of resolution of COVID-19 disease10-13, some showed improved time to viral clearance,6,11 larger reductions in inflammatory markers,11,12 and decreased mortality in patients who received ivermectin as opposed to other therapies or placebo. 6,11,12 There are a number of limitations to these studies, including their open-label nature, lack of peer-review at this point, and the fact that they are mostly performed outside of US. It has been proposed that some of the effects seen in COVID-19 patients on steroids with ivermectin might be due to treatment of unrecognized Strongyloidiasis.14 In addition, published studies suffer methodologic limitations such as small sample size and inconsistent or poorly defined dosing, comparators and outcomes. Also, previous experiences have been in COVID patients with varying disease severity that is not always clearly defined in available data sources.

Based on the data limitations of the existing literature, the NIH guideline Panel will need results from high-quality, well-designed trials with adequate power to provide an evidence-based recommendation on the role of ivermectin in COVID-19. To account for the risk of Strongyloidiasis, we need trials conducted in areas where Strongyloidiasis is non-endemic or, if the trials are conducted in endemic areas, patients at moderate to high risk of Strongyloidiasis should be screened and treated accordingly.14 There are multiple clinical trials underway to evaluate the potential role of ivermectin in COVID-19 and some larger trials are completing enrollment that may provide additional data to help determine the role of this drug in the treatment of COVID-19.

At this time, DASON agrees with the recommendation set forth in the NIH guidelines, which states there are insufficient evidence to recommend for or against the use of ivermectin for the treatment of COVID-19. For the sites who may consider ivermectin use, it is important to keep in mind that ivermectin has not been proven to be effective for the treatment of COVID-19 and it is important to consider potential risks this therapy may pose for patients. Ivermectin is associated with significant side effects, including Mazzotti reaction (dermatological reaction including pruritis and urticaria), lymphadenitis, and arthralgias. In addition, ivermectin can cross the blood-brain barrier and induce encephalopathy, especially in patients in hyperinflammatory states such as COVID-19.15

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References:

7. Stromectol Package Insert. Available at: https://www.accessdata.fda.gov/drugsatfda_docs/nda/98/50-742s001_Stromectol_PrtntLbl.PDF.