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BRIEF19

A daily review of covid-19 research and policy

RESEARCH BRIEFING

Ivermectin: yet another fad runs into the brick wall known as "actual science."

One of the recent social media crazes making the rounds again as a potential covid-19 treatment is ivermectin. Ivermectin is a medication, first discovered in the 1970s that is often used to kill infections ranging from intestinal parasitic worms to scabies.

Last year, anecdotal reports popped up describing of patients being prescribed this anti-parasitic medication in an attempt to treat covid-19, sometimes as part of a cocktail with vitamins despite any positive findings supporting its use. A slew of low-quality studies also began to appear in the medical literature. Those studies, now frequency cited and quoted by the ivermectin faithful, all had substantial problems. Some were purely *in vitro* successes (i.e. the drug inhibits SARS-CoV-2 replication in cells in laboratories); others that involved humans had poor methodologies or lacked a placebo. The hype reached such a frenzy (reminiscent of hydroxychloroquine) that on February 4, 2021, Merck, the major drug manufacturer of ivermectin, released a statement specifically highlighting the lack of safety data and proven scientific evidence supporting the use of ivermectin in the treatment of covid-19.

Today in *JAMA*, data from a well-done double-blind randomized trial was finally published. This study was conducted in the latter half of 2020 at a single site in Cali, Colombia. Patients were identified through the state's health department database of positive coronavirus cases. A random sample of 476 adults was obtained. Patients who were enrolled had mild symptoms lasting under a week and could be at home or have been hospitalized. However, if they required oxygen, they were ineligible for the trial. Patients were randomized to receive ivermectin (300 micrograms per kilogram of body weight) or placebo for 5 days. The primary outcome that the researchers were interested in was resolution of symptoms within 21 days. The study group tended to the younger healthier patients often seen, with a median age of 37 and a gender makeup of 58 percent women.

No significant difference was seen in median time to symptoms resolution which was 10 days in ivermectin group and 12 days in placebo group. At day 21 symptoms resolution rates were also = similar in both groups (82 percent in the ivermectin group versus 79 percent in the placebo group). Adverse events were similar across both groups. An error did occur during the study in which for approximately two weeks, all of the trial's participants received ivermectin while none were given the placebo. That mistake, however, does not seem to have taken away from the main conclusion of the study. Indeed, these results show no benefit to ivermectin in the treatment of mild covid-19. While there are other angles to study this medication, and undoubtedly others will try to do so, ivermectin is now poised to be yet another proposed therapy to add to the pile of failed covid-19 treatments whose main interest has been fueled by social media, egged on by scientifically illiterate politicians.

—Christopher Sampson, MD, FACEP

POLICY BRIEFING

President Biden declares America on track to have 300 million vaccine doses by May, two months earlier than previously promised.

President Biden declared on Tuesday, March 2 that the United States is currently "on track" to have enough coronavirus vaccine doses for every American adult by the end of May. This comes amid news that Merck will dedicate two of its facilities to production of Johnson & Johnson's coronavirus vaccine, which recently received emergency authorization.

President Biden said, "As a consequence of the stepped-up process that I've ordered and just outlined, this country will have enough vaccine supply — I'll say it again — for every adult in America by the end of May." He said further that he wanted all teachers to receive at least one shot by the end of this month, directing states to prioritize teachers in their vaccination plans. While overall this was welcome news, the administration's plan to expedite teachers' inoculations—essentially deviating from strictly "following the science"—was criticized by some experts, including a former member of the Biden transition team covid-19 advisory board.

While this announcement represents a dramatic acceleration of the vaccination timeline, this does *not* mean that all Americans will *receive* shots by May 31; distribution and personnel requirements will likely cause delays in vaccine administration. Nevertheless, this estimate is cause for optimism, given the administration's previous goal of having enough shots by the end of July.

Meanwhile, President Biden warned that people need to "stay vigilant" because "the fight is far from over," with new SARS-CoV-2 variants and vaccine hesitancy posing concerns. Indeed, Texas Governor Abbott's declaration that Texas will reopen and do away with its mask mandate raises concerns about viral spread as the nation begins to ramp up its vaccine administration. While daily caseloads have declined substantially since January, the decline appears to be leveling off, a pattern of concern to public health researchers.

Both Moderna and Pfizer pledged in February to deliver together enough vaccine to cover 200 million Americans by the end of May. With Johnson & Johnson's vaccine authorization, as well as Biden's invoking of the Defense Production Act to facilitate access to the necessary supplies so that Merck facilities can be rapidly equipped to manufacture the Johnson & Johnson product, the country is poised to have enough vaccine for all adults 18 and older.

While it is not clear when the nation will return to normalcy, this expedited timeline is cause for cautious optimism, particularly if states choose to adhere to covid-19 safety precautions. And for those living in states like Texas, it is important to remember that just because the Governor says masks are not required does not mean they should not be worn by choice.

—Miranda Yaver, PhD

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