

19 August 2020

## **BRIEF19**

*A daily review of covid-19 research and policy.*

### **RESEARCH BRIEFING**

#### **A toxicologist's view on proposals for oleander to treat covid-19.**

Until an effective vaccine for SARS-CoV-2 is available, there will continue to be a need for therapeutics that soften the course of the disease, even if such medicines do not prevent or cure covid-19. As scientists evaluate the repurposing of FDA-approved therapeutics (for example, hydroxychloroquine, azithromycin, dexamethasone), alternative remedies, such as miracle mineral solution or colloidal silver and most recently oleander, have been proposed.

However, these proposals come without any evidence nor even a reliable theory to propose a valid mechanism of action, and such remedies are most often ineffective. They can even be toxic. Miracle mineral solution is essentially a more potent version of bleach. QAnon, a conspiracy theory group, popularized drinking miracle mineral solution to treat covid-19 in late January. In late April, President Trump speculated about the efficacy of ingesting bleach to treat covid-19. Consuming such products can potentially burn a hole through the gastrointestinal tract. Additionally, colloidal silver has not been found to be safe or effective for any condition. It can however interfere with other medications and lead to permanent blue-gray skin discoloration.

This week President Trump suggested that oleandrin, an extract of oleander, might prevent or cure covid-19. Oleander can cause life threatening changes in electrolytes and fatal heart rhythms. It is structurally similar to digoxin, an old medication for heart failure. A recent non peer-reviewed preprint publication [suggested](#) that oleander might inhibit SARS-CoV-2 replication in cells. However, the concentrations that the authors of that study suggested would be toxic to humans, assuming that oleander is distributed throughout the body similar to digoxin. No direct data exist for oleander's metabolism or effects on the human body. Meanwhile, two of the authors had biotech commercial conflicts of interest.

The promotion of oleander touches on recurring issues in science communication. One major issue is the array of quality among preprint publications. Some are good and others are terrible. Another problem relates to misuse of public trust by physicians. Being a physician in one area does not imply expertise in others. For example. Dr. Ben Carson endorsed oleander use. While he is a doctor, he was trained in pediatric neurosurgery. As the writer of this brief, I would not purport to have more knowledge than Dr. Carson in the field of pediatric neurosurgery. However, as a trained medical toxicologist whose expertise includes the toxic effects of plants, Dr. Carson's comments on oleander are outside of his purview and abjectly misleading.

The 1994 Dietary Supplement Health and Education Act allows companies to make unsubstantiated health claims about supplements, as long as they do not claim that the supplement cures something. Meanwhile, supplements are not evaluated by the FDA for safety and efficacy, prompting President Trump to suggest that the FDA should either approve oleander or otherwise have it be sold as a supplement.

There is no evidence that oleandrin is effective in treating covid-19, but research should be ongoing. It is important to remember that plants have inspired effective therapeutics against many diseases including cancer, joint and heart disease. Aspirin, for example, comes from the bark of a willow tree, while the aforementioned digoxin comes from the foxglove plant. But until the appropriate experiments are performed and results peer-reviewed, individuals should not ingest potentially deadly chemicals and extracts.

—Michael Chary, MD PhD

## **POLICY BRIEFING**

### **New pilot for rural healthcare.**

The Centers for Medicare and Medicaid Services (CMS) has [announced](#) a new pilot program called the Community Health Access and Rural Transformation (CHART), aimed at improving rural healthcare systems. As nearly twenty percent of Americans live in rural communities with a disproportionate number of comorbidities, covid-19 cases are rising (as *Brief19* [covered](#) in April). With a significant number of hospitals facing [closure](#) due to financial strain, the covid-19 pandemic has had an especially devastating effect on access to care in these communities.

To combat this, CMS has developed two models under this new pilot. The Community Transformation Track will provide up to \$5 million up front to fifteen organizations with follow-on capitated payments. The Accountable Care Organization (ACO) Transformation Track will give twenty ACOs advanced payments as part of the Medicare Shared Savings Program. The goal of this split aim is to investigate whether these organizations benefit more from early investment or faster payments for existing services.

*Various*

—Joshua Lesko, MD

### **AMA asks for delayed payback.**

Billions of dollars have been disbursed to healthcare entities as part of the Medicare Accelerated and Advanced Payment Program, which, in brief, uses historical billing data to provide advanced payment before new charges are submitted. This program was [expanded](#) with passage of the CARES Act by the United States Congress, and the deadline was [extended](#) in August to allow a greater number of applications. Unfortunately, these funds came with a ticking clock; recipients had 120 days from delivery to repay any difference in allocated and actual funds. Now the American Medical Association has [asked](#) Center for Medicare and Medicaid Services (CMS) Administrator Seema Verma to delay the start of these repayments, citing the ongoing pandemic and a persistent decrease in patient volume that has meant slower revenue streams than expected. Under the current terms of the program, future Medicare reimbursement will be decreased by 100% until the balance is paid off, which could prove devastating to these healthcare providers. *American Medical Association*

—Joshua Lesko, MD

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*Brief19* is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health policy, and public policy.