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Commentary

Do the Combinations of Repurposed Anti-Parasitic Drugs has Anti-SARS-CoV-2 Activity?

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DESCRIPTION

The COVID-19 pandemic and the spread of SARS-CoV-2 have devastated economies, public health, livelihoods, and human life across continents and nations [1]. Nearly a hundred million cases and over two million fatalities had been documented as of March 2021. The deployment of vaccines, which will still take months or years in the majority of less developed countries, is crucial for the hope of surviving the pandemic and returning to regular life. The absence of efficient treatment is one of the causes of the significant loss of life, hospital overcrowding, and public panic. The US FDA has only recently approved Remdesivir for usage in emergency situations. But the medication isn't yet widely accessible. Other anti-inflammatory medications with FDA approval target host inflammatory reactions. It is critically need to develop more medications that can prevent SARS-CoV-2 replication in order to treat patients as well as lower viral loads and stop the spread of the virus. It has been demonstrated that many repurposed anti-parasitic medications have *in vitro* action against SARS-CoV-2. Several anti-parasitic medications with anti-SARS-CoV-2 action and the potential for therapeutic repurposing for the treatment of COVID-19 patients have been discovered by *in vitro* screenings of FDA-approved medications [2]. Early expectations for a viable treatment employing these medications were dashed when Chloroquine failed to demonstrate a therapeutic benefit in clinical studies. Ivermectin, on the other hand, has demonstrated good outcomes in numerous clinical trials. In vitro experiments have demonstrated that ivermectin can reduce SARS-CoV-2 replication by up to 5000-fold. Since it poses no safety risk, the medication has been used extensively to treat a variety of parasitic infections in both humans and animals for four decades. With a strong safety record, it was also utilised in the widespread treatment programme for river blindness (Onchocerciasis) [3].

As a result, it makes for an appealing drug repurposing candidate for COVID-19 treatment. Niclosamide, a different anti-parasitic medication, demonstrated strong anti-SARS-CoV-2 action. The medication has demonstrated broad antiviral effectiveness against a variety of infections. These anti-parasitic medications are readily accessible, reasonably priced, and thought to be quite safe for short-term use. They exhibit strong *in vitro* anti-SARS-CoV-2 action. In order to uncover combination regimens with good potential for drug repurposing in COVID-19 treatment, they were therefore chosen for synergistic testing. In order to combat the pandemic, the world urgently needs repurposed medication regimens with better anti-SARS-CoV-2 activity. Pharmacological combining is a method of increasing drug potency. Ivermectin inhibits host importin alpha/beta-1 nuclear transport proteins, preventing viruses from dampening the host's antiviral response, according to earlier *in vitro* investigations. It was recently discovered that ivermectin may prevent the SARS-CoV-2 spike protein from adhering to the ACE2 receptor on human cell membranes. Ivermectin has also been shown in several studies to have antiviral effects against the Zika virus, dengue virus, and human immunodeficiency virus type 1 [4]. Ivermectin is also believed to work on host cells for its antiviral effect due to its broad spectrum antiviral activity. It is possible that these *in vitro* activities cannot have an impact in vivo or that they are not sufficiently potent given the lack of clear clinical effects. Combining drugs is a clear way to increase potency. Combining medications that work on host machineries does not necessarily result in a synergistic impact and can even have an antagonistic effect, unlike combining direct acting antivirals with various targets, which almost always leads in an additive or synergistic effect. Therefore, choosing appropriate drug combinations with a synergistic impact is essential for the creation of effective regimens [5].

REFERENCES

1. Dyer O. Covid-19: Study claims real global deaths are twice official figures. BMJ. 2021;373:n1188.
2. Mathieu E, Ritchie H, Ortiz-Ospina E, Roser M, Hasell J, Appel C, et al. A global database of COVID-19 vaccinations. Nat Hum Behav. 2021;5:947–953.

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3. Wang Y, Chen L. Tissue distributions of antiviral drugs affect their capabilities of reducing viral loads in COVID-19 treatment. Eur J Pharmacol. 2020;889:173634.
4. Arshad U, Pertinez H, Box H, Tatham L, Rajoli RKR, Curley P, et al. Prioritization of anti-SARS-CoV-2 drug repurposing opportunities based on plasma and target site concentrations derived derived from their established human pharmacokinetics. Clin Pharmacol Ther. 2020;108:775–790.
5. Singh B, Ryan H, Kredo T, Chaplin M, Fletcher T. Chloroquine or hydroxychloroquine for prevention and treatment of COVID-19. Cochrane Database Syst Rev. 2021;2(2):CD013587.