



DRUGS USED FOR COVID-19, IMPLICATIONS ON THE RENAL FUNCTION, AND PROSPECTS.

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INTRODUCTION

The COVID-19 pandemic that began in 2019 hit the world quickly and overwhelmingly. For this reason, the race for the ideal pharmacological treatment made some research teams to skip the step by step of the development process, occasionally transforming the results of inexpressive studies into something true. In this context, the objective of this abstract will be to discuss some of the medications used by the population and doctors in the treatment of COVID-19 and their possible complications for the renal system, after that provide a few future perspectives.

METHODS

The methodology applied in the development of this abstract was based on a flowchart. Focusing on the Brazilian health system and aware of which medications were used indiscriminately to treat COVID-19, some even included in hospital center protocols, 3 were selected: Hydroxychloroquine, Ivermectin, Azithromycin. Next, information found in the reference bibliography for medical studies is cross-referenced with the most recent publications on the topic, systematic reviews and clinical studies. Finally, in a wide research network of databases available online, the prospects for treating COVID-19 in the future are obtained.

RESULTS

Provenly used to treat rheumatoid arthritis and malaria, hydroxychloroquine showed promising results in small studies at the beginning of the pandemic. As a derivative of 4-aminoquinolones, it acts by inhibiting the formation of prostaglandins, interfering with the enzymatic and DNA binding activity of the invading agent, in addition to being a potent inhibitor of the lysosomal function of phagocytes and macrophages. However, half of its total systemic clearance occurs in the kidney, divided into 75% unchanged chloroquine and 25% desethylchloroquine, generating an acidifying effect on the urine, requiring careful use in dialysis patients

and contraindicated in cases of low GFR,in addition other effects such as retinopathy. Ivermetin drug has still been widely tested in recent research, but it does not present promising results for COVID-19, in addition, studies suggest that the use of ivermectin can further aggravate the damage caused by the virus to the tubular system of the kidneys.

As for azithromycin, in addition to the epidemiological complications of the indiscriminate use of antibiotics for non-recommended purposes, the use of macrolides, in the literature, may be related to interstitial nephritis and acute renal dysfunction, therefore, it is only indicated in some especific cases that the disease progression to bacterial infection. Regarding perspectives for the future, several medications have been tested, some of which are: Pyridotigmine in a study with 188 patients, when added to standard treatment, appears to reduce mortality in hospitalized patients, increasing the half-life of endogenous acetylcholine and reducing the inflammatory pattern; The association of Remdesivir with dexamethasone, in a study with 151 patients, brought a reduction in mortality and hospitalization time, accelerating the response to the SARS-CoV-2 virus; Another study tested the addition of Sofosbuvir/Ledipasvir and also Nitazoxanide to conventional treatment, obtaining an improvement in the rate of early and high viral clearance in mild and moderate patients with COVID-19; Clazakizumab in a multicenter, ramdomized trial has also improved uentilation-free survival.

CONCLUSION

Although less media coverage, COVID-19 still affects millions of people and remains without real treatment. Medicines used without proof may have had negative consequences for the population, not just by the nephrologic diseases, but to the other areas of health, including the drop in supply. Furthermore, research has evolved to reduce mortality rates through the most diverse pharmacological routes, however, the only safe way to combat the disease still remains prevention.