**Ivermectin and Covid-19**

Student’s Name

Professor’s name

Institutional affiliation

Course Tittle

Date

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**Behera, P. et al. (2021). Role of ivermectin in preventing SARS-CoV-2 infection among healthcare workers in India: A matched case-control study. *PLoS ONE,* 16(2)*.***

The article builds on a hospital-based matched case-control study for exploring the therapeutic and preventive role of ivermectin in SARS-CoV-2 infection. The case-control study involved 186 case-control pairs. The researchers conducted the case-match survey of healthcare workers who tested positive or negative for COVID-19 in India at AIIMS Bhubaneswar. Healthcare workers who tested positive for COVID-19 are the cases and controls for the study, while those who tested negative were the controls. The proposed intervention was the intake of ivermectin and other prophylaxis for COVID-19. The researchers monitored and observed both the cases and controls or level II-2 evidence to highlight their findings on the drug. 76 controls and 41 cases took two doses of ivermectin prevention, and their data collected and recorded for analysis. The results concluded that the administration of the two doses at the interval of 72 hours, each dose weighing 300 μg/kg, resulted in reduced infection among healthcare workers in the facility by 73%.

**Babalola, O. E. et al. (2021). Ivermectin shows clinical benefits in mild to moderate COVID19: A randomized controlled, double-blind dose-response study in Lagos. *International Journal of Medicine.***

The researchers explore the efficacy of ivermectin on people infected with COVID-19 by conducting a range of tests. The research builds on the findings of randomized translational proof of concept, dose-response, controlled double-blind placebo, a parallel-group study of ivermectin efficacy on patients proven to be COVID-19 positive through RT-PCR. The study involved randomized controlled trials on the drug conducted on 62 patients categorized into three treatment groups. The first group received a 6mg regime of ivermectin, 12mg ivermectin regime for the second group, and the third functioned as the control group. Analysis of the randomized controlled trials indicates the efficacy of ivermectin in converting the positive cases to negative, directly proportional to the dosage administered. In essence, the group receiving 12mg of ivermectin regime showed rapid conversion to negativity, proving the efficacy of ivermectin for clinical use in managing SARS-CoV-2 infections.

**Chaccour, C. et al. (2021). The effect of early treatment with ivermectin on viral load, symptoms, and humoral response in patients with non-severe COVID-19: A pilot, double-blind, placebo-controlled, randomized clinical trial. *PlumX Metrics.***

The research study evaluates the efficacy of ivermectin on proven patients with non-severe COVID-19 and who do not have underlying conditions or risk factors for the same at the Clinica Universidad de Navarra’s emergency room. It uses randomized controlled trials (RCTs) to showcase the efficacy of one dose of ivermectin to reduce SARS-CoV-2 infections. Patients enrolled in the evaluation showcased early symptoms of the disease upon which the participants were randomly selected to receive the single ivermectin dose of 400 mcg/kg. Patient outcomes included the number of patients with detectable COVID-19 infection after seven days of receiving the ivermectin dosage and supported by participants’ infectivity and viral load. 70% of the women recruited for the study reported headaches as some of the side effects, while 62% had fever. 50% of the female participants also reported general malaise upon receiving the ivermectin vaccine. Patients with non-severe COVID-19 disease and who received the ivermectin dosage within 72 hours of diagnosis with the viral infection showcased a significant reduction in the severity of the infection’s symptoms.

**Kaur, H. et al. (2021). Ivermectin as a potential drug for the treatment of COVID-19: an in-sync review with clinical and computational attributes. *Pharmacological Reports*.**

The research article is an observational study involving a review of the available evidence on the use of ivermectin in COVID-19 patients. It is purely observatory and does not make use of Randomized Control Trials and studies on dose-response and thus lacking enough evidence to support the clinical use of the drug. Ivermectin is an anti-parasitic drug associated with significant improvements in patients with COVID-19. The researchers conduct a rational review of the anti-parasitic drug with more emphasis on its many clinical attributes. The review was supported by using the artificial intelligence-based virtual embodiment of the structural configuration of the drug. The researchers also used a molecular dynamics simulation-based study on the structure of the drug during the review. Studies reviewed on the efficacy of the anti-parasitic drug on the treatment of COVID-19 highlighted its significant impact on mitigating infections. The review insists on the need for conducting more randomized controlled tests and studies on dose-response to support the clinical use of the drug in dealing with COVID-19 infections.

**Sarkar, C. et al. (2020). Potential Therapeutic Options for COVID-19: Current Status, Challenges, and Future Perspectives. *Frontiers in Pharmacology.***

The article reviews existing therapeutic options with the potential for the treatment of and vaccination against COVID-19. It is a systematic review of existing therapeutic options for COVID-19 through a wide range of databases. The review is not focused on the use or efficacy of ivermectin but provides an overview of the current therapeutic options. All therapeutic options and preventative measures undergoing clinical investigations and recorded or registered across selected databases form the subject of review in the article. Ivermectin makes for one of the therapeutic options under the category of antibiotics and anti-parasitic in the review. The study highlights its key features and previous use in treating ectoparasitic disease and onchocerciasis (river blindness). It goes on to mention that the anti-parasitic drug has been used in a clinical study on 60 patients with severe COVID-19 but fails to provide the results or outcomes from the randomized phase 2 clinical research.

**Junior, H. et al. (2021). Use of ivermectin in the treatment of Covid-19: A pilot trial. *Toxicology Reports,* Vol 8.**

The article reports on the findings of a randomized open-label trial pilot study towards evaluating the efficacy of ivermectin in the treatment of patients with non-severe COVID-19. It makes use of Randomized Controlled Trials (RCTs), whose analysis highlights the efficacy of the drug. The research study evaluates the antiviral effects of ivermectin and its safety by assessing the patient upon the administration of various doses of the drug. Patients with mild symptoms of COVID-19 were randomly selected to receive different doses of ivermectin with the support of standard of care treatment. The 32 selected patients were categorized into other groups according to the dosage administered. Ivermectin doses were 100 mcg/kg, 200 mcg/kg, and 400 mcg/kg for the three groups. All patients did not showcase any serious adverse effects from the intake of ivermectin and recorded a significant reduction in the viral load of SARS-CoV-2 within seven days of receiving the dosages. The rate of decrease in SARS-CoV-2 viral load is dependent on the size of the ivermectin dosage given. The pilot study concludes that ivermectin is effective in the treatment of patients with non-severe COVID-19.

**References**

Babalola, O. E. et al. (2021). Ivermectin shows clinical benefits in mild to moderate COVID19: A randomized controlled, double-blind dose-response study in Lagos. *International Journal of Medicine.*

Behera, P. et al. (2021). Role of ivermectin in preventing SARS-CoV-2 infection among healthcare workers in India: A matched case-control study. *PLoS ONE,* 16(2)*.*

Chaccour, C. et al. (2021). The effect of early treatment with ivermectin on viral load, symptoms, and humoral response in patients with non-severe COVID-19: A pilot, double-blind, placebo-controlled, randomized clinical trial. *PlumX Metrics.*

Kaur, H. et al. (2021). Ivermectin as a potential drug for the treatment of COVID-19: an in-sync review with clinical and computational attributes. *Pharmacological Reports*.

Pott-Junior, H. et al. (2021). Use of ivermectin in the treatment of Covid-19: A pilot trial. *Toxicology Reports,* Vol 8.

Sarkar, C. et al. (2020). Potential Therapeutic Options for COVID-19: Current Status, Challenges, and Future Perspectives. *Frontiers in Pharmacology.*