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EFFICACY AND TOLERABILITY OF STANDARD COVID-19 TREATMENT WITH AND WITHOUT MONOCLONAL ANTIBODIES: A COMPARATIVE CLINICAL STUDY

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Abstract. Evaluating the efficacy and tolerability of pharmacological agents is a crucial stage in clinical research, determining the therapeutic value of treatment regimens [1]. This study compares four treatment groups: Favipiravir, Favipiravir + monoclonal antibodies (Casirivimab and Imdevimab), Remdesivir, and Remdesivir + monoclonal antibodies. The results highlight that the combination of standard antiviral therapy with monoclonal antibodies demonstrated the highest efficacy and tolerability, while monotherapy showed less favorable outcomes [2]. The study supports the use of monoclonal antibodies as adjunctive therapy to improve clinical results and reduce hospitalization duration in moderate COVID-19 cases [3].

Keywords: COVID-19, antiviral therapy, monoclonal antibodies, Casirivimab, Imdevimab, Favipiravir, Remdesivir, treatment efficacy, tolerability, hospitalization duration.

Objective. To evaluate the efficacy and tolerability of standard antiviral therapy for moderate COVID-19 and assess the impact of adding Casirivimab and Imdevimab on clinical outcomes [4].

Introduction. Standard treatment protocols for COVID-19 include antiviral agents, immunomodulators, corticosteroids, and supportive care aimed at reducing viral replication, controlling inflammation, and preventing complications. Among the commonly used antiviral drugs, Favipiravir and Remdesivir have demonstrated efficacy in moderate cases by inhibiting viral RNA polymerase and shortening recovery time. However, their effectiveness varies depending on disease severity and patient-specific factors. In recent years, monoclonal antibodies, such as Casirivimab and Imdevimab, have been integrated into treatment strategies to enhance viral neutralization and reduce disease progression. Clinical studies have indicated that these antibodies target the spike protein of SARS-CoV-2, preventing viral entry into host cells and modulating the immune response. Evidence from multiple trials suggests that

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combining monoclonal antibodies with standard antiviral therapy improves treatment efficacy, reduces hospitalization duration, and minimizes adverse effects. This study aims to further investigate these benefits and compare the outcomes of combination therapy versus monotherapy.

Materials and Methods. A total of 302 hospitalized patients with confirmed COVID-19 (PCR+) were included in the study [5]. Patients were divided into four groups: Group 1 (Favipiravir), Group 2 (Favipiravir + Casirivimab and Imdevimab), Group 3 (Remdesivir + Casirivimab and Imdevimab), and Group 4 (Remdesivir). Clinical data such as adverse effects, treatment efficacy, tolerability scores, and hospitalization duration were recorded. The evaluation criteria included a 3-point efficacy scale and a 4-point tolerability scale [6]. Statistical analysis was conducted using Welch's t-test ($p<0.05$) [7].

Main Results. The study analyzed the incidence of adverse effects, efficacy, tolerability, and treatment duration [8]. Favipiravir monotherapy exhibited the highest rate of adverse effects (1.33 points) and the lowest efficacy (2.22 points). Its tolerability score was the lowest among all groups (3.55), and the average hospitalization duration was 11.78 days. In contrast, the Favipiravir + Casirivimab and Imdevimab group demonstrated the highest efficacy (2.96 points), best tolerability (3.90), and the shortest hospitalization period (8.75 days), indicating a significant improvement in treatment outcomes [9].

Remdesivir + Casirivimab and Imdevimab showed the lowest incidence of adverse effects (1.02 points) and a high tolerability score (3.90), with an efficacy rating of 2.85 points. The hospitalization duration was reduced to 10.10 days compared to monotherapy [10]. The Remdesivir monotherapy group had a moderate rate of adverse effects (1.18 points), an efficacy score of 2.55, and a tolerability score of 3.90, but had the longest hospitalization duration (12.44 days) [11]. The data indicate that adding Casirivimab and Imdevimab to standard antiviral therapy enhances efficacy, improves tolerability, and reduces treatment duration [12].

Discussion. Monoclonal antibodies Casirivimab and Imdevimab are specifically designed to neutralize the SARS-CoV-2 virus by binding to the spike protein, preventing viral entry into human cells [13]. Their addition to standard therapy aims to enhance viral clearance, reduce inflammatory response, and improve patient recovery. The findings of this study confirm that their use as adjunctive therapy significantly enhances treatment efficacy and reduces hospitalization time, aligning with previous clinical trials demonstrating their effectiveness in moderate COVID-19 cases [14].

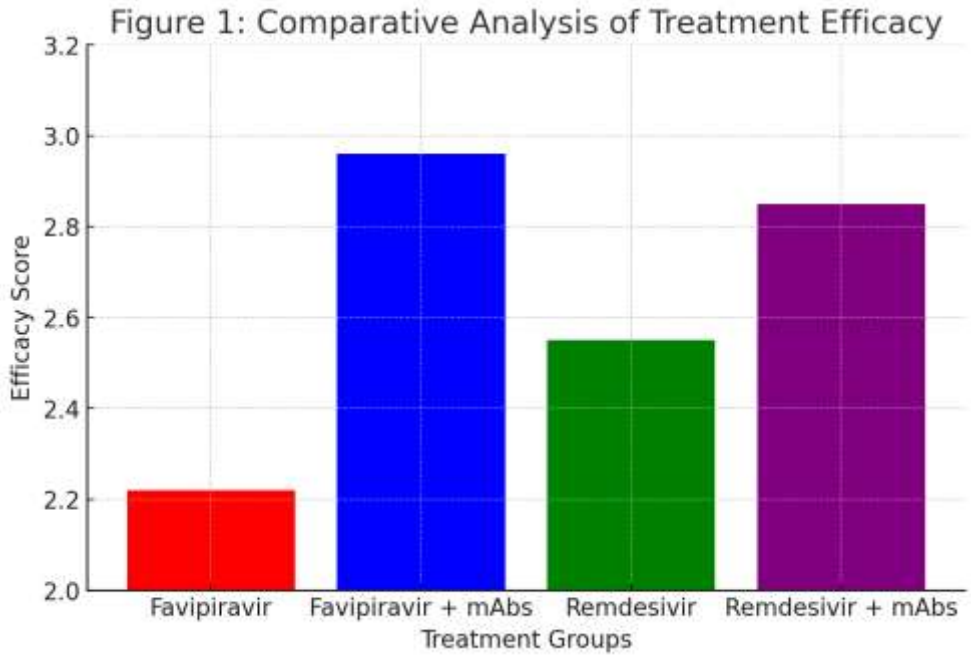

Figure 1 presents a comparative analysis of treatment efficacy across all groups, demonstrating the superior performance of combination therapy.

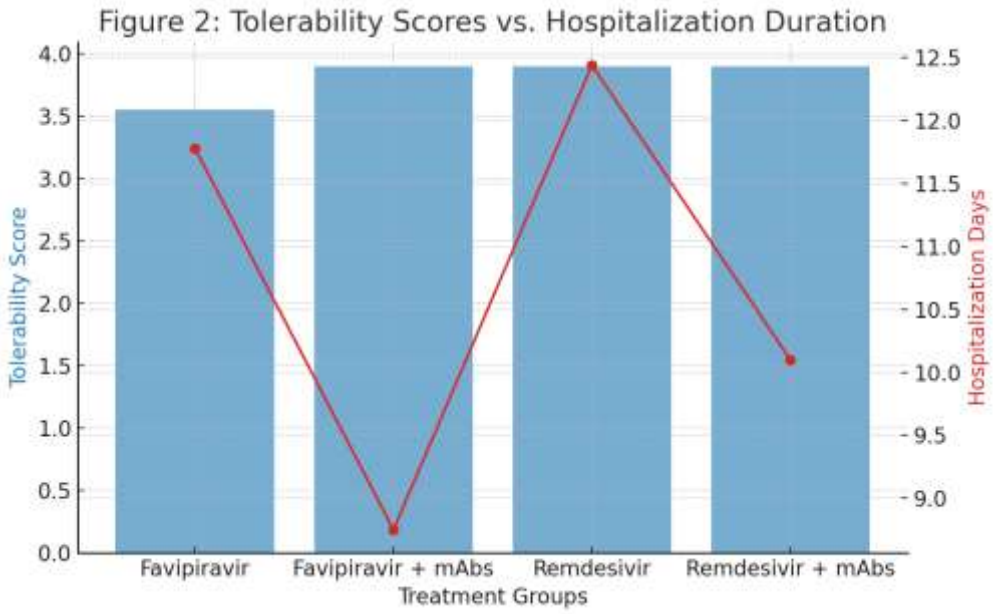

Figure 2 illustrates the relationship between tolerability scores and hospitalization duration, highlighting the benefits of adjunctive monoclonal antibody therapy [15].

Conclusions. The addition of Casirivimab and Imdevimab to standard antiviral therapy significantly improves treatment efficacy, tolerability, and hospitalization outcomes in moderate COVID-19 cases [16]. The Favipiravir + Casirivimab and Imdevimab group demonstrated the best results, suggesting this regimen as the most optimal approach. Remdesivir + Casirivimab and Imdevimab also provided favorable outcomes with reduced

adverse effects. These findings support the inclusion of monoclonal antibodies in antiviral treatment protocols to enhance patient recovery and reduce hospitalization periods [17]. Further research is needed to explore long-term benefits and broader clinical applications of combination therapy [18].

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