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Effect of amubarvimab-romlusevimab for treatment of severe COVID-19 in intensive care units: a retrospective cohort study

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Abstract

Amubarvimab-romlusevimab is used antiviral regimens currently recommended in China for the treatment of adult patients with mild or moderate SARS-CoV-2 infections who are at a high risk factor for progression to severe COVID-19, but its exact efficacy in patients with severe COVID-19 is not yet known. This is a single-center retrospective cohort study. A total of 121 patients in intensive care units(ICU) diagnosed with severe COVID-19 were evaluated.The amubarvimab-romlusevimab therapy can reduce the 14-day mortality(23.40% vs 41.89%, p=0.037), 28-day mortality(29.79 % vs 51.35%,p=0.02), and ICU mortality(29.79% vs 55.41%,p=0.006) of severe COVID-19. To reduce bias and make the two groups balanced and comparable, a 1:1 PSM was performed. In the matched population(n=47), there were no statistically significant differences between the mAbs (monoclonal antibody)group and the Non-antiviral group in 14-day, 28-day, and thromboembolic events in COVID-19 patients. The 40-day survival analysis shows that mAbs therapy can improve patient prognosis (HR=0.45, 95%CI=0.26-0.76, p=0.008). However, no significant intergroup difference in the 40-day cumulative viral conversion rate. In a univariate Cox regression analysis, The Amubarvimab - romlusevimab therapy(HR:0.464; CI:[0.252-0.853];p:0.013),CRP, PCT, PLT, Lactate, PT, PT-INR, and pt% level at admission were risk factors for clinical prognosis. After including the above covariates, Multifactorial COX regression shows that the Amubarvimab - romlusevimab therapy(HR:0.464; CI:[0.252-0.853];p:0.013), CRP, Lactate and PT-INR at admission are independent factors for mortality of severe COVID-19. Based on the current data, we conclude that amubarvimab-romlusevimab therapy is beneficial for patients with severe COVID-19.

Original Research

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Author Contributions

Peng Qu and Cheng Chen designed the research study. Peng Qu ,Dan Rong and Canmin Wang performed the research. Qinglei Zhong, Zhuoer Chen,Weihua Song and Wanfu Cui collected clinical samples. Xu Li and Anni Lou provided guidance. Jiacheng Gong and Qihan Xu analyzed the data. Peng Qu, Xu Li and Anni Lou wrote the manuscript. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

Ethics Approval and Consent to Participate

This study was approved by the Ethics Committee of Baiyun Branch, Nanfang Hospital(2023004).

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Conflict of Interest

The authors declare no conflict of interest.

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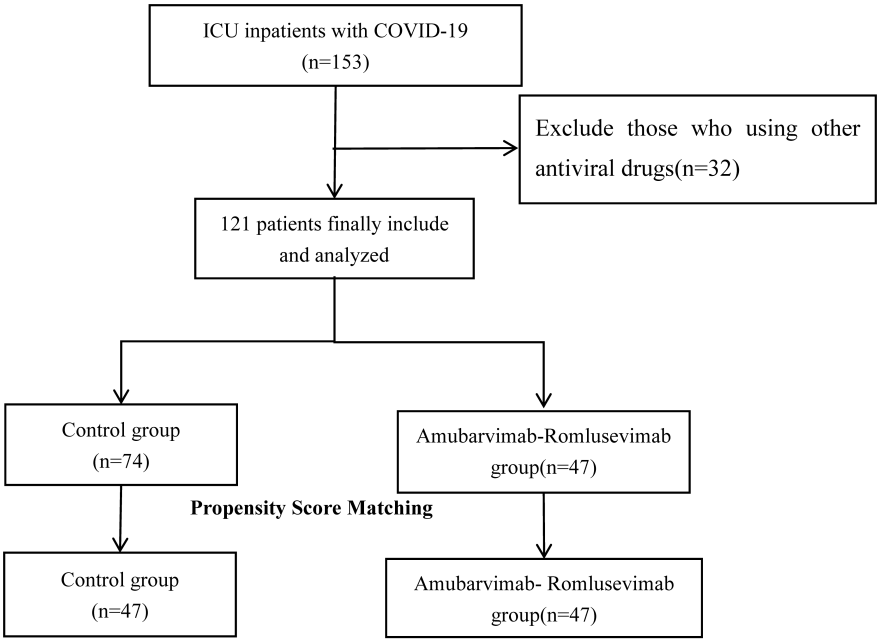

Figure 1 Flow diagram of the study population

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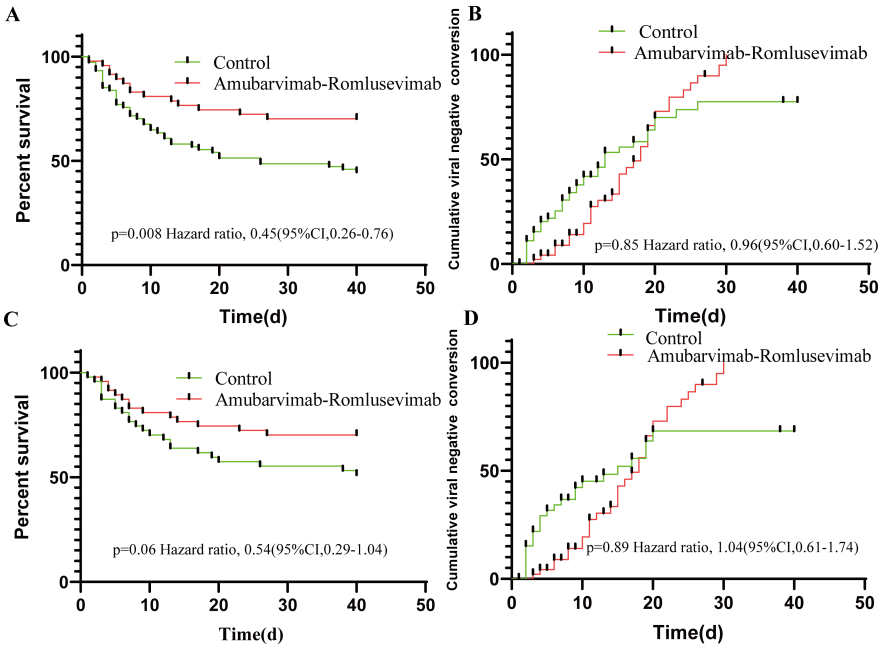

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