Comparison of the Efficacy of 3 Anti-Viral Regimens Containing Kaletra, Ribavirin and Sofosbuvir in COVID 19 Disease

Abstract

Background: New therapeutic options are urgently needed to handle the ongoing pandemic of coronavirus disease 2019 (COVID-19). As some anti-viral therapeutic regimens are assumed to be helpful, we decided to compare the efficacy of kaletra, kaletra plus ribavirin, and kaletra plus ribavirin plus sofosbuvir, as three different therapeutic regimens in covid 19 patients.

Methods: This was an observational retrospective study in adults affected by COVID-19 admitted to the Ghaem Shahr Razi Hospital in Mazandaran Province, Iran. We examined medical records of 1033 patients with COVID 19, Between February 2 to March 20, 2020. According to the received antiviral regimens, patients were divided into three groups: 1) Kaletra, 2) Kaletra Plus Ribavirin, 3) Kaletra Plus Ribavirin Plus Sofosbuvir. They were compared in terms of the illness severity, the ICU admission, need for non-invasive ventilation and mechanical ventilation, and the mean duration of hospital stays and ICU stays.

Results: Based on the inclusion criteria, 571 cases were categorized into three groups: Kaletra (n=471), Kaletra plus ribavirin (n=78), and Kaletra plus ribavirin plus sofosbuvir (n=22). The demographic factors were not significantly different between the groups (P-value> 0.05). There was significant difference between male and female frequencies (56.40% *vs.* 43.60%, respectively, P-value=0.002). 62.50% of patients aged 50 and older. Symptoms and signs were not significantly different among the three groups (P-value>0.05), except Sputum; Sputum was significantly more often found in patients of the Kaletra+Ribavirin+Sofosbuvir group (P value=0.039). According to the ICU admission, need for non-invasive ventilation and mechanical ventilation, and the mean duration of hospital stays and ICU stays, patients treated with kaletra plus ribavirin plus sofosbuvir regimen experienced highly better improvement than the other groups; although this difference was not statistically significant (P-value> 0.05).

Conclusions: Kaletra plus ribavirin plus sofosbuvir could be considered as a promising anti-viral therapeutic regimen for COVID-19 patients.

Keywords: Anti-viral treatment; COVID 19; Kaletra; Ribavirin; Sofosbuvir