Hypertension

Evaluation of outcome of Coronavirus disease 2019 patients receiving RAAS inhibitors (OCRAS study): a prospective observational study of Bangladeshi hypertensive patients

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Background: The fact that SAARS-Cov2 virus enters cells through ACE2 receptors and the Renin-Angiotensin-Aldosterone System Inhibitors (RAASi) upregulate the ACE2 receptors, there was speculation that use of RAASi may lead increased cellular entry of the virus. There was a pause for a brief period of the use of RAASi in COVID 19 patients. But clinically the speculation has been found to be incorrect. Different professional societies come up with the assertion to continue to use RAASi. As the hesitancy among the clinicians appears to continue and there is no first hand data regarding the safety of the use of RAASi in Bangladeshi population, the study was undertaken to evaluate the safety of RAASi in COVID 19 patients.

Aims & Methods

This study was a prospective, observational multi-center study to evaluate the outcome of COVID-19 patients receiving RAAS inhibitors. Adult Hypertensive patients (age ≥18 years) with diagnosed COVID-19 confirmed by RT-PCR test who have a history of taking either ACE inhibitor/ARB or any other anti-hypertensive medication. Evaluation of outcome was assessed by rate of hospitalization, requirement of oxygen therapy, requirement of high flow nasal cannula, admission to ICU and mortality between two groups. All statistical analyses were performed using SPSS for Windows, version 20.0 (SPSS Inc., Chicago, IL, USA).

Results: We collected data from 147 Covid-19 positive patients confirmed by RT-PCR. Among them, 117 (79.6%) had a history of taking RAAS inhibitor and 30 had history of taking other antihypertensive medications. Of them, two-third patients had more than 50 years of age and more than half of the patients had overweight or obesity. Other than hypertension they had several comorbidities such as Diabetes Mellitus (45.4%), Ischemic Heart Diseases (35.4%), Asthma or COPD (15%) etc. Rate of hospitalization had no statistical difference between RAAS inhibitor group and other hypertensive group (48.7% vs 46.70% respectively; p-value - 0.841). There was no statistical difference between two groups in terms of requirement of oxygen therapy (p-value - 0.297), High Flow Nasal Cannula (p-value - 0.430), intensive care unit (p-value - 0.194) and death (p-value – 0.383) also. Almost half and one-third of the patients had persistence of symptoms even after 14 days and 28 days respectively. Fatigue, cough, breathlessness, loss of appetite and taste were the most common symptoms among those.

Conclusion: In our study we found that RAAS inhibitor treatment had no adverse effect on the outcome of COVID-19 patients compared with other antihypertensive drugs. Patients may continue receiving ACEIs and ARBs for the treatment of any indication for RAASi without an increased risk of worse outcomes.