The global pandemic of Coronavirus Disease 2019 (COVID-19), triggered by the rapid spread of a novel coronavirus strain termed "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), resulted in over 449 million infections and over 6.5 million deaths globally until September 25, 2022. Bangladesh is the second most afflicted nation in South Asia, following India, by the ongoing pandemic of COVID-19, with over 2.0 million confirmed cases and over 29 thousand deaths till September 25, 2022. Due to the fact that the severity of the infection may range from asymptomatic to symptoms comparable to a common cold to severe forms of interstitial pneumonia necessitating emergency medical care, it would be very beneficial to identify the risk factors for adverse clinical outcomes. Predicting the need for intensive care unit admission and mortality absolutely depends on variables such as age and the existence of comorbidities, as was soon learned. According to a Chinese study, 23.7 percent of individuals with COVID-19 had at least one prior chronic underlying disease or comorbidity; this percentage increased to 40% in severe cases. A previous chronic condition or comorbidity was found in 77.5 percent of individuals with COVID-19 in Bangladesh, and this figure increased to 94.4 percent in severe situations. Diabetes mellitus is one of the most common comorbidities among COVID-19 patients, accounting for a larger number of comorbidities.

Diabetes mellitus is a chronic metabolic disorder that affects 422 million people globally, and 1.5 million people death each year as a direct result of diabetes, which is predominant in low and middle-income countries. According to the World Health Organization, diabetes affected 8 percent (12.88 million) of Bangladesh's total population, accounting for 3 percent of all-age mortality overall. The prevalence of diabetes mellitus (DM) among Bangladeshi people has climbed gradually over time as well.

COVID-19 and diabetes mellitus have a complicated and reciprocal connection. The clinical course and prognosis of COVID-19 and diabetes may be influenced by each other since they are both linked with acute and chronic inflammation. The infection with COVID-19 has had a significant impact on patient metabolism, causing large changes in blood glucose levels. Insulin resistance and hyperglycemia are linked to the increased release of cytokines and inflammatory mediators (such as C-reactive protein, procalcitonin, ferritin, lactate dehydrogenase, and d-dimer).

Another possibility is that COVID-19, which targets ACE2 receptors in pancreatic islets, contributes to the onset of acute diabetes mellitus in some of these individuals by causing pancreatic lesion. Additionally, diabetes itself may be adversely affected by a severe SARS-CoV-2 infection and the steroids used in its management.

Among severe COVID-19 cases, DM has been proven to be an independent predictor of hospital admission, the need for intensive care, and mortality in multiple large, well-performed cohort studies worldwide. Another research in China found that 8.2 percent of patients had COVID-19 and diabetes mellitus (DM) as co-morbid conditions, and that severe instances of DM constituted for 17.7 percent of the population. In studies conducted in Italy and the United States of America, it was observed that 14.3 percent and 33.8 percent, respectively, of hospitalized patients with COVID-19, had diabetes as a pre-existing comorbid condition. In recent research conducted in Bangladesh, it was discovered that 54.6 percent of patients had both COVID-19 and diabetes mellitus (DM) as co-morbid conditions and that severe cases of DM affected 73.1 percent of the population.

Pre-existing DM should be evaluated for its effect on the progression and severity of COVID-19. Males and older adults may be more vulnerable to developing...
COVID-19. Fever, cough, fatigue, and shortness of breath were the most common symptoms reported by COVID-19 patients admitted to hospitals, regardless of whether they had a comorbid illness. As a result, physicians must conduct additional clinical laboratory testing to rule out DM exacerbation from SARS CoV-2 infection while evaluating signs or symptoms.

While some research has been performed on the relationship between DM and COVID-19, only a few studies on the clinical and laboratory findings of COVID-19 patients with DM comorbid have been implemented. Even though it has already been established those chronic diseases like DM and others enhance morbidity and death from COVID-19, people of different ethnicities have been disproportionately impacted. Some research has documented the clinical and laboratory characteristics of COVID-19 in the context of Bangladesh, but so far, these data concerning DM among COVID-19 patients are still lacking.

References:


