Malignancy

Due to a weakened immune response, those have prior history of malignancy are more inclined towards COVID-19 infection. People with any form of cancer have an increased chance of contracting COVID-19 infection because of weakened immune response.

In order to commence infection, severe acute respiratory syndrome CoV-2 obtains effective growing conditions in these patients. In a research, it was shown that 60 percent of COVID-19 patients had pulmonary carcinoma and 47 percent of them were receiving radiation, chemo and immunotherapy during their hospital stay, none of these individuals required ICU treatment. The death rate was 2 percent amongst COVID-19 infected individuals with prior history of any form of cancer [4].

Autoimmune diseases

Are conditions characterised by excessive immune activity and the destruction of healthy tissues. Because lymphopenia is a primary precipitating factor for developing severe COVID-19, patients with autoimmune disorders such as systemic erythematosus lupus, rheumatoid arthritis, type 1 diabetes, might well be considered a higher risk [5].

Liver diseases in COVID-19

SARS, MERS and also now COVID-19 infections have all been linked to liver damage and aberrant liver biochemistry. It suggests that aberrant hepatic enzyme production and Coronavirus infection are linked. The entrance of severe acute respiratory syndrome CoV-2 into hepatocytes is mediated by angiotensin converting enzyme 2 receptors on liver cells. The aberrant secretion of Aspartate aminotransferase (AST), Alanine aminotransferase (ALT) and Lactic Dehydrogenase (LDH) was identified in 43.4 percent of COVID-19 patients. There was, however, none of the individuals with the typical intrahepatic cholestasis or liver failure is seen. According to other research, 40 percent of COVID-19 cases have high AST and ALT values, while 7% cases show abnormal bilirubin levels. Approximately 29% of COVID-19 patients have hepatic damage and serious consequences in the later stages of illness. In COVID-19, increased substances may be secreted from heart and muscles, in addition to abnormal liver function tests. Blood chemistry alterations normally revert to normal without causing severe liver morbidity [6].

In most people, liver damage manifests as a temporary increase in AST and ALT levels without liver failure; nevertheless, this might be harmful in serious cases of COVID-19. Some causes of hepatic damage in severe acute respiratory syndrome CoV-2 infection might be systemic inflammatory response, mental stress, prior liver disorders and drug related toxicity. Currently, there is no evidence that severe acute respiratory syndrome CoV-2 is linked to liver damage or the pathogenesis of intrahepatic cholestasis.

Obesity and COVID-19

Obesity is connected to lower blood oxygen saturation due to lungs' basic ventilation being hindered. Other symptoms of low grade inflammation caused by obesity include aberrant cytokine and adipokine production, as well as interferon repercussions in a weakened immune response. Obesity never was thought to be as a major precipitating cause of COVID-19 in early publications from highly developed countries which was surprising [7]. Despite this, a significantly elevation in the bulk of COVID-19 cases were recorded in European and North American regions with more fat people. As a result, more research associated with link between obesity and COVID-19 is required. Obesity is one of the COVID-19 infections' lesser known comorbidities. Despite this, COVID-19 infects 47.6% of obese adults and 68.6% of these patients require emergency ventilation. As a result, having a high BMI is linked to the severity of COVID-19.

COVID-19 and HIV

In 2003, a variant of CoV-2 OC43 was discovered from human immunodeficiency virus positive individuals and COVs have a long relation of being associated with HIV. Because of their weakened immune systems, HIV is linked with significantly increased chances of acquiring COVID-19 illness. This was assumed that HIV/AIDS infection is a susceptible condition with COVID-19 infection after the first case of HIV infected patient's positive for severe acute respiratory syndrome CoV-2. Although there's no evidence of a link amongst HIV disease and COVID-19 infection among HIV positive people. As the pandemic spreads, a couple extra instances of COVID-19 in HIV infected individuals have been recorded; however, all of the patients had moderate illness and did not require ICU care. In Thailand that is amongst the most HIV infected countries there was no link between HIV and COVID-19. Antiretroviral medications had previously been thought to have significant anti-SARS-CoV-2 action, which might explain why there are fewer incidences of severe acute respiratory syndrome CoV-2 in HIV positive cases.

COVID-19 and renal disorders

Severe acute respiratory syndrome CoV-2 results in a cytokine storm in the kidneys due to direct cellular injury or sepsis. SARS-CoV-2 was recently identified from a sample of urine from an affected person in Guangzhou, China, indicating that the renal system is potentially a possible target for severe acute respiratory syndrome CoV-2. Acute renal impairment was observed in 2-7% of COVID-19 infections, as well as in SARS (6%) and MERS (16%) individuals, with a 50%-80% fatality rate. In COVID-19, there is a danger of death in relation to the threat of acute kidney injury. Aside from the increased BUN levels, research shows that 19.6 percent of patients progress to bloody urine, 34% albuminuria and 63% proteinuria. COVID-19 infection is linked more commonly with cases having kidney impairment owing to a rise in ACE-2 expression [8].

Asthma in COVID-19

Asthmatics are more likely to get viral infections, which have been recognised for over 18 years. These viral infections might develop serious symptoms if left untreated. Asthmatics have a postponed inherent antiviral immune system response as well as altered IFN release, making them more vulnerable to severe consequences. MERS (12 percent) and SARS (1.2 percent) which caused significant symptoms were linked to asthma and other respiratory chronic illnesses. According to history, asthma is thought to become a significant precipitating factor for COVID-19; nevertheless, researchers found no particular evidence of SARS-CoV-2 in asthmatic people. SARS-CoV-2 had no significant connection with asthmatic conditions or other allergies reported by patients, such as allergic rhinitis, atopic dermatitis, food allergy, according to a comparison of serious and moderate COVID-19 patients. However, asthmatic smokers, particularly geriatrics, are linked to the progression of serious ailments in COVID-19 patients [9].

Issues with patient management

COVID-19 patients' management techniques differ depending on their signs and symptoms; for example, individuals who have no apparent manifestations yet are tested positive with COVID-19 must be confined and isolated at their residence. Those with minor symptomatology (*i.e.* no hypoxia or pneumonia) or should begin treatment right once and the selection between outpatient and inpatient settings is made on a situation by situation basis. People with serious COVID-19 symptomatology (respiratory distress) require special treatment, including the use of a ventilator and other supportive measures. As a result, effective therapy can be achieved by following these principles in order to prevent additional transmission and lower mortality.

Despite this fact that a huge majority of COVID-19 instances have moderate illness, around 20 percent of the total of individuals requires hospitalisation and 6–9 percent of the total experience serious illnesses that necessitate critical treatment and intensive care unit admissions. Variations in ICU admission rates between nations are determined by local medical care and intensive care unit admission standards; also, predisposing variables like as age and comorbidities frequently impact ICU admission standard rate.

Baseline disorders such like cardiovascular diseases, asthma, hypertension, diabetes, COPD and malignancy have been recognised as precipitating causes for serious illnesses and are found to be associated with a high death rate; consequently, these cases require improved care and particular concern [10]. Since the bulk of COVID-19 patients die as a result of having pre-existing comorbidity, precise assessment is required during the of admission to hospital. Patients both suffering from and not suffering from comorbidities should be classified into two categories, with unique recommendations developed for each. While treating COVID-19, the treatment for underlying disorders must be continued without interruption.

DISCUSSION

SARS-CoV-2 infected a huge number of people worldwide, causing cold, cough, chest pain, dyspnoea and individuals with additional ailments are at the greatest chances of developing the disease. Individuals with diabetes, hypertension, HIV, cardiovascular disease, cancer, chronic obstructive pulmonary disorder and encounter critical conditions. Chronic obstructive pulmonary disease patients experience far more serious complaints and have a greater death instance [11].

Severity of COVID-19 disease development is linked to a various medical conditions. Many of the COVID-19's inferior results are found to be associated with cardiovascular diseases. On the other hand, this might be a direct effect of the cardiovascular problem or a result of additional comorbidities in relation to the cardiovascular condition. COVID-19 severity was observed to be more in individuals with insulin independent diabetes mellitus. So later it was found in a cohort review of 8687 COVID-19 patients with insulin independent diabetes mellitus than individuals without insulin independent diabetes mellitus required higher interventions while they were in the hospital compared to the non-diabetic individuals. People with poor blood glucose control had a greater overall mortality risk than those with better glucose control, according to research. According to the study, patients with blood sugar levels between 3.9 and 10.0 mmol/L had a reduced risk of added adverse effects and fatality.

Considering the paucity of effective drug treatments and SARS-CoV-2 vaccinations, managing a COVID-19 case is a huge problem for all medical personnel. When COVID-19 is combined with illnesses, it exacerbates the problem that results in increased morbidity and death in patients. SARS-CoV-2 exposure is harmful to the lungs, heart, kidneys and liver in comorbid patients with CVDs (impaired heart and immunological systems), COPD (mucous production and inflammatory response), diabetes (lung inflammation and increased ACE-2 expression) and acute respiratory distress syndrome, shock, cardiogenic shock, arrhythmias, kidney problems, multiple organ failure and finally, death are all consequences that have a negative impact on the patient. The National Institute of Health (NIH) and The World Health Organization (WHO) has produced suggestions for COVID-19 patient management solely on medical data and expert advice [12-18].

Washing hands, social distancing and proper hygiene significantly help to prevent COVID-19 transmission. People with morbidities need to use personal protective techniques with utmost caution. In diabetes individuals, the flu vaccination reduces the incidence of pneumonia by 42–54 percent and it may be used to discriminate between COVID-19 and influenza signs. Due of the compromised immune systems of previously ill patients,

it is recommended that these patients remain in home isolation as long as they have relatively mild symptoms that may be managed by home care. For improved therapy of COVID-19 problematic cases, communication between patient and clinician should be enhanced in addition to seclusion and social distance. The merit of this study is its more extensive emphasis on clinically relevant commodities that are ubiquitous in our culture and have been linked to COVID-19, which have likely haven't been described in a piece of research [19-27].

CONCLUSION

COVID-19 patients already suffering from other diseases had a higher chance of dying. However, not all comorbidities are equally dangerous. Comorbidities are common and the risk of death related with them is significant among COVID-19 patients. As the pandemic progresses, public awareness, early detection and focused care for COVID-19 individuals with comorbidities are suggested.

For better results, early escalation of therapy based on comorbidities and important laboratory signs are crucial.

Since a result, those who have impairments must take all precautions possible in order to prevent catching SARS-CoV-2, as the outcome in majority of overall cases is found to be worst. Thorough washing hands with soap and water or the usage of an sanitizers which have alcohol content, avoiding public areas unless absolutely necessary, minimising individual to individual contact and adopting physical distancing, mandatory wearing of face mask in crowded areas, are among the strategies. As a result, a worldwide public health campaign to make people aware is needed.

COVID-19 has infected people across over 178 nations, causing massive death. As even the disease gets over the globe, it's becoming clear that some people who have prior serious illnesses are so much more prone to contract it and get very ill.

The data available is limited because SARS-CoV-2 is a comparatively recently discovered virus. In comparison to those without comorbidities, those with comorbid conditions have even worse outcomes. COVID-19 cases with prior history of diabetes, obesity, cardiovascular disorders, chronic pulmonary disorders, or hypertension, had the poorest outcome and are therefore more prone to developing pneumonia and acute respiratory distress syndrome. Patients in long term care institutions, those with chronic renal illness and those with cancer are not only at danger of catching the virus, but they also have a higher chance of dying.

COVID-19 symptoms ranging from mild respiratory sickness to major infection that necessitated intensive critical unit care in the cases reported throughout the world. Because patient is asymptomatic for a length of time and also the incubation time is between two and fourteen days, it really is challenging to make a timely diagnosis, much alone prevent the illness from spreading if the patient is unintentionally exposed. If respiratory problems arise at this time, it is critical to seek medical attention right once.

Since a result, people with pre-existing morbities should take all efforts to prevent developing SARS-CoV-2, as their fate is generally the worst. Frequent and through washing of hands with soap and water or the use of an alcohol based hand sanitizer, limiting one on one touch and adopting physical distance, usage of face mask in crowded locations and avoiding visiting to public places unless absolutely essential are among the measures in order to facilitate the huge problem of this pandemic.

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