

Diabetes and COVID 19

Diabetes in patients with COVID 19

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Co morbidities are common in patients with COVID 19 infection. In a meta-analysis of 8 studies with 46248 patients, it was shown that the most prevalent co morbidity were, hypertension (17+_7%), Diabetes (8+_6%), cardiovascular disease (5+_4%) and respiratory system diseases (2+_%) (1)

People of any age with type 2 diabetes are at increased risk of severe illness from COVID-19 infection (2). In nationwide analysis in England, it has been shown that type 1 and type 2 diabetes were both independently associated with a significant increased odds of in hospital death with COVID-19. (3)

People with diabetes have an increased risk of infection because of innate immunity defects, increased cytokines, the increased levels of glucose and other metabolites that may be preferred by SARS-COC-2. Diabetes is a risk factor for the progression and prognosis of COVID-19 (4) The evidence for the link between Diabetes and COVID-19 is not currently fully explained. Several factors especially the impaired immune response, heightened inflammatory response and hyper coagulable state contribute to the disease severity, however, there are many contentious issues about which the evidence is limited such as the role of ACE2 and the theoretical concerns about the effects of different anti-hyperglycemia drugs. (5) Obesity and insulin resistance could mediate the severity of COVID-19 infection. The triglyceride and glucose index which is suggested as a marker of insulin resistance, was closely associated with the severity and morbidity in COVID 19 (6). Moreover, diabetes could be main factor behind accelerated progression of COVID 19 according to a study of Japanese patients (ADA 2021). There hasn't been enough evidence of evidence-based medicine on COVID 19 management in diabetes. Referring to standards of care of type 2 diabetes. IDF refers to follow the recommendations for the SOCK

DAY RULES for the patients with diabetes and COVID-19, for better medical care and improved prognosis. Blood pressure control should follow the guidelines as in non-COVID 19 patients despite the concerns which were raised about the use of RAAS inhibitors. Lipid lowering with statins should continue. Statins has been linked to lower the risk of death from COVID 19 (6)

The relationship between diabetes and COVID 19 appears to be bidirectional. On the one hand, diabetes is associated with increased risk of severe COVID 19. On the other hand, new onset diabetes and severe metabolic complications of existing diabetes including diabetic ketoacidosis and hyperosmolality for which exceptionally high doses of insulin are warranted have been observed in COVID-19 patients. A potential diabetogenic effect of COVID-19 is hypothesized besides the well-recognized stress response associated with severe illness. (7)

Besides causing severe complications of preexisting diabetes, COVID-19 is suggested to trigger new onset diabetes in healthy people. Evidence from tissue studies and some people with COVID-19 shows that the virus damages the insulin producing cells. (8) Highly ACE2 expression in pancreas may cause pancreatic damage after infection with COVID-19. Potential mild pancreatic injury has been demonstrated in patients with corona virus disease-19 pneumonia (9)

In conclusion:

The variable severity of COVID-19 infection is likely to be multifactorial, Age, sex, severe obesity and diabetes are well established risk factors for increased morbidity and mortality. On the other hand, long term effects of COVID-19 on metabolic health is expected including altered metabolism and development of T2D.



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