

***DIABETES  
AND COVID-19  
A DUAL  
CHALLENGE***

***AUTHOR:  
DR. SHILPI CHAUHAN***

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Dr. Shilpi Chauhan  
Global Goodwill Ambassador,  
International Peace Ambassador  
Organizing Secretary & Author  
Saksham Society  
Jaipur, Rajasthan, India

## **Risk of COVID-19 infection associated with pre-existing Diabetes**

### **Mellitus**

ANKITA MONDAL<sup>a</sup> & TIRTHANKAR DALUI<sup>b</sup>

<sup>a</sup>Student, Post Graduate Department of Zoology, Barasat Govt. College, Kolkata-700124

<sup>b</sup>Assistant Professor, Barasat College, Kolkata-700126

### **Abstract**

Coronavirus, named as SARS-CoV-2, was identified as the viral pathogen causing mild or severe respiratory infections in humans known as coronavirus disease(COVID-19) in Wuhan, China, in December 2019. Soon it spreads rapidly in other parts of the World. On 11<sup>th</sup> March 2020, Covid-19 was declared as a pandemic by the World Health Organization. Several studies revealed that older people and individuals suffering from diabetes mellitus (DM) are more prone to be infected by Covid-19 and are at a higher risk for severe complications and death. The cellular receptor known as ACE2 is the central attachment site for SARS-CoV-2. The most frequent comorbidities to COVID 19 are hypertension and diabetes. Coronavirus binds to target cells through angiotensin-converting enzyme 2 (ACE2), which is expressed in the epithelial cells in the lungs, blood vessels, and in the intestine. In patients treated with ACE and angiotensin II receptor blockers, the expression of ACE2 is increased, which could facilitate infection with COVID-19 and increase the risk of severe disease and fatality. Some events which may increase the chances of Covid-19 in DM patients are higher affinity of the virus to binding and entry into the cell, lowering T cell function, and increased rate of susceptibility to hyper inflammation and cytokine storm. Several studies support the hypothesis that patients with DM are susceptible to SARS-CoV-2 infection.

**Keywords:** COVID 19, ACE2, Diabetes, Infection, SARSCoV 2.

### **Introduction**

In December 2019, several cases of severe acute respiratory syndrome were identified in Wuhan city in China. Later the disease is known as COVID-19, which is caused by a viral pathogen named SARS-CoV-2 or coronavirus 2. Due to the rapid spread of COVID-19 all over the world, the World Health Organization (WHO) declared COVID-19 a