

**EDITORIAL****Intensity and Rate of COVID-19 Infection in Pakistan****Anila Jaleel***Department of Biochemistry, Shalamar Medical and Dental College, Lahore, Pakistan.**doi.org/10.36283/PJMD9-3/001*

Since the WHO has declared the Covid 19 pandemic, number of cases is on rise but not attained peak in Pakistan. Although people are affected by COVID-19 throughout the world but the impact of, the disease is different in various countries, which may be attributed to different factors<sup>1</sup>. Scientifically it is point to ponder that though the official figures are in thousands but there may be many asymptomatic patients in our communities due to closed family living systems in Pakistan. There are more than 12 to 13 people living in single small apartments in Karachi, who are in so close contact with each other and the local transmission cannot be avoided in them. However, the positive thing is that the severity of disease and number of deaths in Pakistan are not as much as in developed countries. There could be a number of reasons, which are needed to be explored by researchers in Pakistan and world over. Some of them may be as follows:

1. Asians differ genetically from Europeans and others, so might be the severity of virus is not as much due to the genetic makeup.
2. Mutant strain of virus may be different in our set of population.
3. Malaria is endemic in our population due to unhygienic conditions and long standing water in localities. So at one time or other people in Pakistan had taken Chloroquine, as fever for two or more days with chills is mostly suspected as malaria in this part of world. Hydroxychloroquine is tested in primate cells by Wang's team and found that, it prevented SARS-CoV-2 replication like Chloroquine<sup>2,3</sup>. Chinese Clinical Trial Registry has registered seven clinical trials to test the drug's effectiveness against COVID-19 infection. Although some trials have concluded with non-recommendation of Hydroxychloroquine as prevention and treatment of COVID-19 patients due to serious side effects.
4. The people of Pakistan are exposed to all type of viruses due to limited hygienic conditions and pollution so they develop immunity against them. Under current circumstances, it may be one of the factors that although food is not readily available to all citizens and 25% live below poverty line and are malnourished but due to exposure to viruses, they have developed antibodies in their bodies.
5. BCG vaccination is given to the newborns in Pakistan as EPI protocol, which may be one of the factors in less severity of disease symptoms in Pakistani population. Study by Miller et al. proposed that difference in COVID-19 impact could be due to Bacillus Calmette–Guérin (BCG) childhood vaccination varied policy in different parts of world as it offers protection against respiratory infections. They observed that countries reported less number of cases who have longstanding BCG vaccination protocol<sup>1</sup>.
6. Children in Pakistan mostly of low socioeconomic status, play in soil and mud. Therefore, antiparasitic medications are given by doctors every now and then. Cell culture study done at Monash University has found that anti-parasitic drug Ivermectin is capable of killing the COVID-19 virus within 48 hours and severe reduction within 24 hours, but animal and human studies are yet to be carried out<sup>4</sup>.
7. Tourists are limited in Pakistan compared to the western world, which may be one of the reasons.
8. The average age of Pakistanis is 60 years compared to western countries, which is mostly 80, and above. As younger generation is more in Pakistan, which may be one of the factor as younger may develop resistance to infections more effectively.

Trials are being carried out in Pakistan to use plasma of Covid 19 recovered patients to treat severely ill patients, which is showing promising results. Anti-viral drugs and anti-Interleukin 6 injections are showing improvement in patients with moderate to severe symptoms. More epidemiological studies and clinical trials are needed to determine prevalence of the disease and reason of mild to moderate disease in Pakistan.

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