

Covid-19 and dengue fever combine infection, a dangerous combination for the health system of Pakistan

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ABSTRACT

As the world struggles to deal with the consequences of the COVID-19 pandemic, dengue fever endemic regions are facing the threat of a double pandemic that might totally overwhelm administrations of health care service. In Latin America and Asia, simultaneous epidemics of dengue and COVID-19, as well as possible instances of co-infections, have already begun. Because the healthcare system is already stretched enough, a fatal combination like this may devastate hospital emergency departments and the economy as a whole. Frontline clinicians must use precise epidemiological and contact history-taking techniques, as well as pay close attention to false-positive dengue serology and the possibility of co-infections, to tackle this apparently overwhelming obstacle.

Key words: Covid-19; Dengue fever; Co-infection; health system

INTRODUCTION

The current credible challenge to the globe is in the form COVID-19 (1). Firstly, Covid-19 was reported in December 2019 in Wuhan, China (3). In Pakistan, COVID-19 first case was confirmed by the Ministry of Health on 26 February, 2020 in Karachi while 2nd case of COVID-19 was confirmed in Islamabad on the same day (2). Across the world, COVID-19 outbreak has spread in 213 countries. Currently about 241 million people are infected with COVID-19 with about million global deaths (4). Dengue cases have risen in majority of dengue-endemic nations across the globe during the pandemic of COVID-19. As COVID19 is wreaking havoc around the globe, nations in Latin America and South Asia are facing a second epidemic: dengue fever (5). This year, dengue fever has spread in many South Asian nations, including India, Bangladesh, and Pakistan. Surprisingly, COVID19 is now wreaking havoc in nearly all of these nations as a result of the pandemic scenario (6).

The current confirmed cases of Covid-19 are about 12 million with about 28000 deaths in Pakistan (4). Dengue fever, a virus illness spread by *Aedes aegypti* and *Aedes albopictus* mosquitoes, is also on the rise in the country (7). Dengue infection has been on the rise in Pakistan for the last four years, according to the report of NIH Pakistan (8). (Figure 1 and Table 1) According to the National Institutes of Health, the number of cases began to increase in March and reached a high in September and October (8). Dengue fever has become much more common throughout the world, with estimates ranging from 100 to 400 million illnesses each year (9). During the rainy and summer seasons, a higher number of dengue cases are recorded (10). This coincidence has far-reaching implications for both the people and the economy. In such circumstances,

public and private health-care organizations must collaborate to address this health hazard.

Clinical symptoms and test findings from COVID-19 and Dengue fever make the diagnosis challenging (11). Several authors have described instances of people who were first misdiagnosed as having dengue fever but subsequently screened as Covid-19 positive (12). The health care system will be put to the test for a longer period of time by Covid-19, which has a significant effect on the global economy and has many possible unnoticed transmission pathways (13). Pakistan is on the verge of numerous socio-economic catastrophes, given the precarious state of its health sector and the complicated epidemiological situation. Due to a lack of precise diagnostic tests and late virus identification, viral importation may occur, making it challenging to prevent it from spreading and leaving unreported and undiagnosed positive cases. Virus infections may be considerably more common than currently reported because of this. Another major issue is the understaffed and underfunded public healthcare system. Pakistan is trying to deal with Covid-19 despite its economic and healthcare experts' limitations. Drastic efforts like substantial investments in diagnostic, epidemiological and development of vaccine research should be made to contain the epidemic. To identify and restrict virus transmission, active monitoring, viral identification tests, and cleaning large areas must be emphasized. Combining these approaches may assist identify the true number of affected people, allowing for the isolation of those people and this will eventually contain the viral spread.

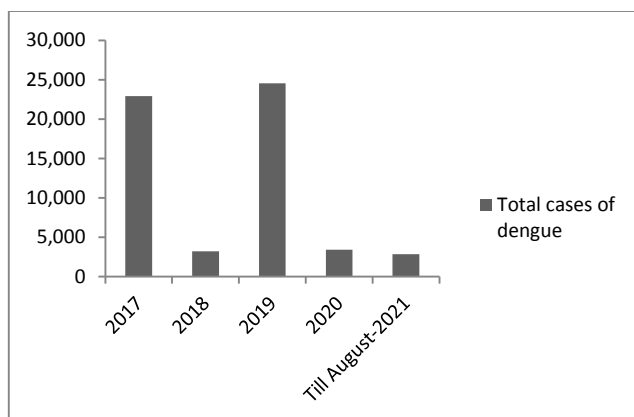


Figure 1: Positive cases of dengue fever in last four years in Pakistan

Table 1: Positive cases of dengue fever in last four years in different provinces of Pakistan

Province	Year	Total cases of dengue
KPK	2017	19263
	2018	507
	2019	6698
	2020	3
	Till August-2021	24
Punjab	2017	579
	2018	539
	2019	8826
	2020	38
	Till August-2021	9982
Sindh	2017	2884
	2018	2088
	2019	2937
	2020	2722
	Till August-2021	1488
Baluchistan	2017	86
	2018	69
	2019	2841
	2020	493
	Till August-2021	1363
Islamabad	2017	120
	2018	0
	2019	2847
	2020	184
	Till August-2021	0
AJK	2017	6
	2018	1
	2019	506
	2020	2
	Till August-2021	0

CONCLUSION

Currently the cases of dengue are increasing at alarming rate in Pakistan. Because the healthcare system is already stretched enough, a fatal combination of dengue and Covid-19 may devastate hospital emergency departments and the economy as a whole. Frontline clinicians must use precise epidemiological and contact history-taking

techniques, as well as pay close attention to false-positive dengue serology and the possibility of co-infections, to tackle this apparently overwhelming obstacle. Patients with undifferentiated acute febrile illness should be screened using reliable, quick point-of-care testing for COVID-19 in order to help separate those who test positive from those who have dengue, regardless their often deceiving clinical manifestations.

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