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Perspective

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A looming twindemic of COVID–19 and dengue on post–flood scenario in the developing countries

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Pakistan has recently faced a disastrous and lethal flooding across the country, affecting 33 million people and 1400 healthcare facilities, putting further strain on the nation's fragile healthcare system. The country faces widespread infectious diseases including dengue and COVID-19[1]. To date, SARS-CoV-2 has caused about 6.53 million deaths and spread globally, infecting about 612 million people. Throughout the developing world, infection rate is particularly high in Pakistan, causing 30 606 deaths so far[2]. As of September 2022, healthcare authorities claimed a continued rise in dengue cases due to heavy flood in the country. Till date, a total of 14 173 dengue cases have been reported, and the highest number of cases was documented in Sindh province (5 203), followed by Khyber Pakhtunkhwa (4 538), Punjab (3 101), and Islamabad with 1 331[3].

Studies suggest a large number of dengue cases, especially during the monsoon and post-monsoon seasons. Since this particular period is associated with escalated respiratory problems, the upcoming monsoon and post-monsoon seasons may be very critical for an abrupt increase in COVID-19 in Pakistan. This sequential coincidence suggests that these two diseases could occur at the same time and impact the population and economy. Given the greater overlap between the two epidemics in the upcoming period (September to October 2022), it will be difficult to distinguish COVID-19 and dengue fever from each other because they are similar in their clinical and laboratory manifestations[4]. In the current scenario of floods and infectious diseases including COVID-19, dengue epidemics in Pakistan may add pressure to the healthcare systems. In terms of epidemiological condition(s) and economic limitation, the country is falling behind. As previously claimed, the country has insufficient availability of healthcare workers, beds and intensive care units for patients[5].

Additionally, COVID-19 pandemic with the projected dengue epidemic may promote pandemic and epidemic, technological constraints and economic shortfall in Pakistan due to persistent inadequate health systems. To the best of our knowledge, the main challenges in this regard are COVID-19 pandemic and dengue epidemic in forecast (monsoon), which may lead to "twindemic" due to inadequate clinical facilities. The "twindemic" can be defined as an emerging situation where both COVID-19 pandemic and dengue epidemic may overlap. In fact, the expected period is more significant that present optimal temperature, favors multiplication of dengue larvae (*Aedes*), which can lead to a large-scale dengue epidemic in forecast. In addition, majority of the cases are asymptomatic. Therefore, it is suggested that both governmental and non-governmental machineries must pay close attention to the simultaneous control of COVID-19 and dengue infections. It is also important to consider proper monitoring of open-access water reservoirs, which play a major role in the growth and multiplication of dengue larvae, and development of novel control strategies[6]. The combination of all these measures can help to gain knowledge, de-escalate emerging cases and limit the spread of the virus in the developing world, including Pakistan.

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Authors' contributions

All authors contributed equally in the conceptualization, drafting, critical reading and revision of the manuscript, and gave final approval for publication.

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