

Forecasting Dengue and Typhoid Co-infection Using Clinical Parameters: A Predictive Model Approach

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Description

The concurrent infection with two different pathogens, leading to overlapping symptoms, can indeed pose a diagnostic challenge for healthcare providers. This is particularly true for diseases like dengue, which can present with symptoms that resemble those of various other infectious diseases. The co-infection of dengue with diseases such as typhoid (caused by *Salmonella Typhi*) can complicate the clinical picture and affect patient management. To address this diagnostic dilemma and understand the prevalence of co-infections, studies like the one you mentioned are essential. Research efforts to determine the current co-infection rates in a specific region, such as North Delhi, can provide valuable insights into the epidemiology of these diseases and help guide healthcare practices and policies. Researchers would design a study to investigate the occurrence of co-infections involving dengue and typhoid in the North Delhi region. This might involve collaboration with local healthcare facilities and laboratories. Timely diagnosis and appropriate treatment are crucial, especially for diseases like dengue and typhoid. Delayed or incorrect treatment can lead to complications and life-threatening consequences [1].

Patients presenting with symptoms that could be indicative of dengue, typhoid, or both would be recruited for the study. Informed consent from participants would be obtained. Diagnostic tests for both dengue and typhoid would be performed on the collected blood samples. This could include serological tests, polymerase chain reaction (PCR), and other relevant laboratory methods. Detailed clinical data, including symptoms, medical history, and demographic information, would be collected from each participant. This data would help establish the clinical profiles of co-infected individuals. Researchers would analyze the test results and clinical data to determine the prevalence of co-infections and the characteristics of co-infected patients. Statistical methods would be used to draw conclusions and identify any trends or risk factors associated with co-infections. Ethical considerations and patient confidentiality would be strictly adhered to throughout the study. The study's findings would be reported in scientific journals and shared with local healthcare authorities. This information could inform public health strategies, clinical guidelines, and diagnostic practices in the region. This retrospective study was done between August and November 2013. Medical records of 659 patients exhibiting febrile illness who visited Kasturba Hospital were studied. Dengue specific IgM antibodies were detected by Dengue IgM antibody capture ELISA test. Serodiagnosis of *Salmonella* infection was conducted by Widal test in the hospital.

Dengue typically presents with symptoms that overlap with many other diseases, such as fever, body aches, nausea, vomiting, and rashes. This makes it challenging to clinically differentiate dengue from other febrile illnesses. FI is a common clinical syndrome characterized by a sudden onset of fever. It can be caused by a wide range of infectious agents, including viruses, bacteria, and parasites. The non-specific nature of fever and other symptoms often makes it challenging to diagnose the underlying cause without appropriate testing. Several other infectious diseases, including leptospirosis, influenza A, typhoid (*Salmonella*

Typhi), Japanese encephalitis, chikungunya, and malaria, can manifest with similar symptoms. The coexistence of these diseases in the same geographic region complicates the diagnostic process. Given the overlapping symptoms and the potential severity of these diseases, laboratory confirmation through tests like serology, PCR, or blood cultures is essential for accurate diagnosis. Relying solely on clinical symptoms can lead to misdiagnosis and delayed treatment. In regions with distinct seasons, like the monsoon period in India, the prevalence of certain diseases may vary. Healthcare providers need to consider seasonal patterns when diagnosing and managing patients with fever [2-5].

In regions where multiple infectious diseases coexist, healthcare providers and public health authorities face the ongoing challenge of accurate diagnosis and timely intervention. Effective disease surveillance, diagnostic capacity building, and robust healthcare infrastructure are essential components of addressing these challenges and ensuring the well-being of affected communities. Public health campaigns and awareness programs can play a vital role in educating the public about the symptoms of these diseases and the importance of seeking medical attention promptly. Additionally, it underscores the importance of comprehensive diagnostic approaches when dealing with infectious diseases that share similar clinical presentations.

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Conflict of Interest

The authors declare that there is no conflict of interest associated with this manuscript.

References

- Hogendoorn, Sarika KL, Loïc Lhopitalier, Melissa Richard-Greenblatt and Estelle Tenisch, et al. "Clinical sign and biomarker-based algorithm to identify bacterial pneumonia among outpatients with lower respiratory tract infection in Tanzania." *BMC Infect Dis* 22 (2022): 39.
- Chaloemwong, Juthatip, Adisak Tantiworawit, Thanawat Rattanathammethee and Sasinee Hantrakool, et al. "Useful clinical features and hematological parameters for the diagnosis of dengue infection in patients with acute febrile illness: A retrospective study." *MC Hematol* 18 (2018): 1-10.
- Sa-Ngamuang, Chaitawat, Peter Haddawy, Viravarn Luvira and Watcharapong Piyaphanee, et al. "Accuracy of dengue clinical diagnosis with and without NS1 antigen rapid test: Comparison between human and Bayesian network model decision." *PLoS Negl Trop Dis* 12 (2018): e0006573.
- Mendonça, Vitor RR, Bruno B. Andrade, Ligia CL Souza and Belisa ML Magalhães, et al. "Unravelling the patterns of host immune responses in *Plasmodium vivax* malaria and dengue co-infection." *Malar J* 14 (2015): 1-10.
- Hosoglu, Salih, Mehmet Faruk Geyik, Serife Akalin and Celal Ayaz, et al. "A simple validated prediction rule to diagnose typhoid fever in Turkey." *Trans R Soc Trop Med Hyg* 100 (2006): 1068-1074.

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