

The Aftermath of Flood Crises- Diphtheria Outbreak in Sindh

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Dear Editor,

The recent floods in Pakistan have not only resulted in greater than 1290 deaths and 12500 flood-related injuries but also thousands of cases of communicable and non-communicable diseases [1]. One of the worrisome outbreaks is that of diphtheria; which in August-September 2022 resulted in 39 confirmed cases and 10 deaths in Sindh [2].

Corynebacterium diphtheriae is a bacterium causing diphtheria infection [3]. This bacterium is transmitted between humans *via* droplets, secretions, and direct contact with cutaneous lesions. The toxin produced can cause respiratory symptoms leading to airway obstruction, myocarditis, or nephritis. A judicious diagnosis is pivotal and treatment should be initiated immediately. Isolation of toxigenic bacteria confirms the diagnosis. Treatment includes anti-toxin and antibiotics. An effective vaccine is available against diphtheria which is included in our EPI program [4]. The death ratio among untreated patients ranges from 5% to 20% [5]. The incidence of diphtheria is reduced by the introduction of vaccines [5, 6]. However, diphtheria is still prevalent in some low-income countries [6]. Children over 5 years of age have more chances of acquiring diphtheria due to a lack of booster doses after primary series coverage [7]. Unfortunately, the full vaccination coverage for children under the age of two years is 76.1%, which contributes to high infant and child mortality [8]. The situation has become graver after the floods, where providing basic health amenities is a challenge. The flood-affected areas require proper disease assessment and vaccine drive. These outbreaks should be inspected, routine childhood immunization should be done at a quicker pace and additional booster Diphtheria-Pertussis-Tetanus (DPT) vaccine should be encompassed in the EPI program. We would also recommend initiating an outbreak response immunization campaign in the affected areas to stop this outbreak. The primary care physicians should counsel the parents and ensure that children are vaccinated appropriately to age.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

1. USAID Center for International Disaster Information. Cited 10th October, 2022, available at: <https://reliefweb.int/report/pakistan/pakistan-floods-fact-sheet-3-fiscal-year-fy-2022>
2. Diphtheria outbreak in Sindh kills 10 children. Cited 10th October 2022. Available at: <https://dailytimes.com.pk/1003512/diphtheria-outbreak-in-sindh-kills-10-children/>
3. *Corynebacterium diphtheriae*, pages 1458-61, Section 4: Gram Positive Bacterial Infection, infectious diseases. Nelson textbook of pediatrics 21st edition
4. Expanded program on Immunization in Pakistan. Cited 10th October, 2022, available at: <http://www.emro.who.int/pak-programmes/expanded-programme-on-immunization.html>
5. Hardy IR, Dittmann S, Sutter RW. Current situation and control strategies for resurgence of diphtheria in newly independent states of the former Soviet Union. *The Lancet* 1996;347(9017):1739–1744. DOI:10.1016/S0140-6736(96)90811-9.
6. Tiwari T, and Wharton M. Vaccines. In: Plotkin S, Orenstein W, editors. 7th ed. Philadelphia: W.B. Saunders Co; 2018.
7. Clarke KEN, MacNeil A, Hadler S, Scott C, Tiwari TSP, Cherian T. Global epidemiology of diphtheria, 2000-2017[1]. *Emerg Infect Dis* 2019;25(10):1834–1842. DOI:10.3201/eid2510.190271.
8. Vaccine coverage in Pakistan. Published 15th July, 2021. Cited 10th October, 2022, available at: https://www.aku.edu/news/Pages/News_Details.aspx?nid=NEWS-002588