

LETTER TO THE EDITOR

Prevention of Leptospirosis: The Need of the Hour

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In recent decades, several zoonotic diseases of diverse etiologies and epidemiological trend have emerged as well as reemerged in developing and developed nations. Leptospirosis, which is known by multiple names globally like cane's cutter fever, cane field fever, harvest fever, hemorrhagic jaundice, mud fever, rat's catcher disease, ricefield worker's fever, swamp fever, swine herd's disease, Weil's disease, is one of the most commonly occurring zoonotic diseases worldwide and also shows a wide range of morbidities and high mortality rates.¹ Leptospirosis which causes undifferentiated fever, especially in the tropical countries, is recognized to have epidemic potential as it has a significant impact on health of the affected people.² Concept of "One Health," i.e., the correlation and interaction between ecosystems, humans and animals can be extended to recuperate our understanding of a disease and to enhance control strategies and this dynamics is excellently displayed by leptospirosis.³

The causative bacterium of leptospirosis is *Leptospira interrogans* widely affecting animal species, both wild and domestic, which serve as sources of infection for humans where exposure through water and soil contaminated by the urine of infected animals is the most common route of transmission to people and domestic animals.⁴

GLOBAL BURDEN

Worldwide, 50,000 persons per year are affected with leptospirosis, although new estimations are being developed by an expert consultation group led by the World Health

Organization.⁵ Incidences range from approximately 0.1 to 10 per 100,000 per year but may reach over 50 per 10,000 during outbreaks.⁶

INDIA

Outbreaks were seen in Orissa (1999) and Mumbai (2000 and 2005).² Other endemic states are Gujarat, Kerala, Tamil Nadu, and Andaman and Nicobar Islands.⁶

MAHARASHTRA

Graph 1 gives the 5-year trend of case fatality rate of leptospirosis of a tertiary care hospital in Mumbai.⁷

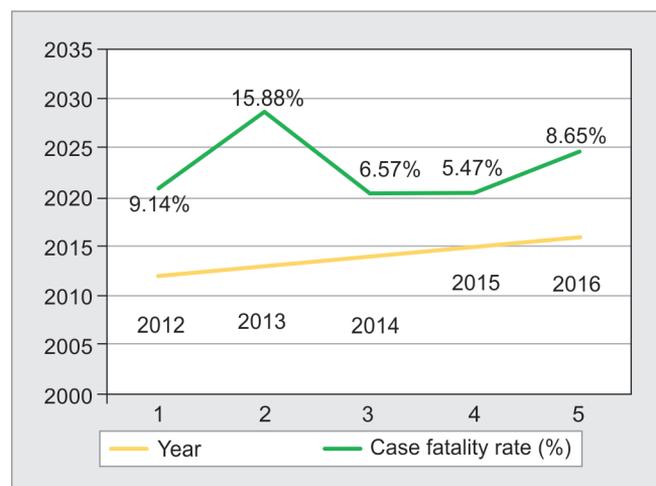
According to the Maharashtra Public Health Department, Maharashtra recorded 20 cases of leptospirosis from January to June 2018, while Mumbai recorded the maximum with 12 cases. The disease had claimed seven and nine lives in 2016 and 2017 respectively.

In the month of June 2018, Mumbai witnessed three deaths suspected of leptospirosis.⁸

Leptospirosis is overlooked and underreported, as it is present with a wide variety of clinical manifestations ranging from mild flu-like illness to serious and sometimes fatal disease.⁹ So, prevention of this disease is imperative from public health standpoint.

PREVENTION AND CONTROL

The complete elimination of disease seems impracticable, as several species of rodents serve as reservoir of infection (Table 1). Therefore, proper strategies for its prevention must be based on awareness of leptospirosis



Graph 1: Case fatality of leptospirosis

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Table 1: Treatment of pregnant females and children

Special groups	Risk	Prophylaxis
Pregnant women	Low	Tab Azithromycin (500) Once within 24–72 hrs
	Moderate	Tab Azithromycin (500) Once for 3 days
Children	Low	Syp Azithromycin (200) or Tb. Azithromycin (250) single dose within 24–72 hrs
	Moderate	Syp Azithromycin (200) or Tb. Azithromycin (250) once daily for 3 days

epidemiology and transmission mechanisms. Some significant preventive¹⁰ ways are as follows:

Personal Protection

Avoid direct or indirect contact of human with animal urine

- Swimming in contaminated water, and walking bare-foot in flood water should be avoided.
- Protective measures during walking in flooded area like rubber shoes and gloves.
- Cover the cut or abrasion injury with antiseptic ointment before entering and exiting flooded areas.

Health Education

Awareness in the community about the concept of leptospirosis disease and its preventive measures with the help of educational campaign, IEC templates/software (audio visual, print, press, and other electronic media, e.g., Facebook, WhatsApp, etc.)

Rodent Control

Four species of rodents are so far found to be reservoirs for this bacterium in India. Hence, controlling these reservoir species with appropriate strategy planning and management planning will moderate the incidence of the disease in the affected zones. Planning includes:

- Identifying the reservoir species of affected area.
- Delineating areas for antirodent activities.
- Completion of activities in premonsoon months.
- Embracing appropriate technology for antirodent operations.
- Capacity building with creation of awareness in community and community participation.
- Proper storage of canned food like cold drinks, etc., in shops, godowns, etc., so that rodents do not infect it.

Proper Drainage System

Mapping of water bodies and human activities can be done so that high-risk population can be found out and

necessary health education and prophylactic measures can be used.

Developmental Projects

Flood control projects.

Vaccination for Animal

Leptospiral vaccines confer a limited duration of immunity. Boosters are needed every 1 to 2 years.

Chemoprophylaxis

Peak transmission season, doxycycline 200 mg once a week to high-risk groups—agricultural workers, canal cleaning workers, or people from where clustering of cases has been reported.

Duration: 6 to 8 weeks.

POLICY FOR POSTEXPOSURE PROPHYLAXIS

In consultation with state officials and the head of medical colleges, Mumbai, and infectious disease specialist.¹¹

Low-risk Exposure

One single history of wading in flooded water without open cuts.

Cap. Doxycycline 200 mg (single dose) 24 to 72 hours from exposure.

Moderate-risk Exposure

One single history of wading in flooded water with open injury or accidental consumption of water.

Cap. doxycycline 200 mg (single dose) 24 to 72 hours from exposure for 3 days.

High-risk Exposure

Continuous exposure to contaminated water especially in urban areas, solid waste management workers, and other workers working in flooded water/marshy lands.

Cap doxycycline (200 mg) once a week for 6 weeks.

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