

Opinion Article

Diphtheria: A persistent threat for juvenile population

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DESCRIPTION

Diphtheria, a bacterial infection caused by *Corynebacterium diphtheriae*, is a disease that has plagued humanity for centuries. Although largely forgotten in many parts of the world due to successful vaccination programs, diphtheria remains a persistent threat in regions with limited healthcare access and low vaccination coverage. Understanding the nature of this disease and the importance of prevention is crucial to safeguarding public health.

Diphtheria is primarily transmitted through respiratory droplets, usually from person to person. It can also be spread through direct contact with skin lesions or by handling objects contaminated with the bacteria. The toxin produced by *C. diphtheriae* can cause severe damage to the respiratory system, heart, and other organs. While individuals of all ages can be affected, unvaccinated children and adults with waning immunity are particularly vulnerable.

The hallmark symptom of diphtheria is the formation of a grayish membrane, known as a pseudomembrane, in the throat and tonsils. This membrane can obstruct the airway, leading to difficulty breathing and potentially fatal complications. Other symptoms may include sore throat, fever, swollen lymph nodes, and weakness. In severe cases, the toxin can enter the bloodstream, causing systemic complications such as myocarditis, nerve damage, and organ failure.

Historically, diphtheria was a leading cause of death among children. However, the development and widespread use of the diphtheria toxoid vaccine, incorporated into routine immunization schedules, have significantly reduced the incidence of the disease. Vaccination not only protects individuals from diphtheria but also helps to limit the circulation of the bacteria in the community, contributing to

herd immunity.

The diphtheria vaccine is typically administered as part of a combination vaccine called the DTP (Diphtheria-Tetanus-Pertussis) vaccine in childhood. Booster doses are recommended in adolescence and adulthood to maintain immunity. Vaccination has been highly effective in controlling diphtheria, with countries that have maintained high coverage rates reporting very few cases. However, pockets of low vaccination coverage or lapses in immunization can create opportunities for the disease to resurface.

In regions where diphtheria remains endemic, efforts to improve vaccination coverage and strengthen healthcare systems are paramount. This includes ensuring the availability and accessibility of vaccines, educating healthcare providers and communities about the importance of immunization, and implementing surveillance systems to detect and respond to outbreaks swiftly. Enhanced laboratory capacity for diagnosing diphtheria is also crucial for accurate case identification and appropriate management.

Treating diphtheria requires a multifaceted approach. Prompt administration of diphtheria antitoxin, which neutralizes the circulating toxin, is essential to halt the progression of the disease. Antibiotics, such as penicillin or erythromycin, are administered to eradicate the bacteria and prevent its spread to others. Supportive care, including airway management and monitoring for complications, is vital, particularly in severe cases. Comprehensive treatment, along with vaccination, can lead to favorable outcomes and prevent the development of long-term sequelae.

The global effort to eliminate diphtheria continues, but challenges remain. Outbreaks can occur in vulnerable populations, including refugees, displaced individuals, and those living in poverty or in areas affected by armed

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conflict. Additionally, vaccine hesitancy and misinformation pose obstacles to achieving high vaccination coverage rates. Addressing these challenges requires collaboration between governments, international organizations, healthcare professionals, and communities to ensure that everyone has

access to the necessary tools and information to protect against diphtheria.

Diphtheria may have faded from public consciousness in many parts of the world, thanks to successful vaccination efforts.