

Diphthery outbreak in Indonesia in 2017

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EDITORIAL

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There are currently serious health problems in Indonesia related to the emergence of diphtheria outbreaks. According to data from the Ministry of Health at the end of 2017, there are 95 districts/ cities from 20 provinces who have reported diphtheria cases. To anticipate this, the government urges the public to check the immunization status of their sons and daughters whether their immunization status is up to date.¹

Diphtheria is an acute infection of *Corynebacterium diphtheria* which symptoms are caused by the toxins produced by the bacteria. The disease was first discovered in the 5th century and its causative bacteria was successfully isolated in 1883.² Diphtheria has been successfully eliminated since the development of diphtheria, pertussis and tetanus (DPT) vaccine, but is still endemic in developing countries such as Indonesia, Brazil, Philippines and African country.³

Corynebacterium diphtheria is transmitted through inhaled droplets or direct contact with infected skin lesions from an infected person. After entering the mouth, the bacteria will colonize in the pharynx and reside in the mucosal lining of the respiration or skin. The incubation period of diphtheria is about 2-5 days. Diphtheria toxin causes local tissue necrosis that causes inflammation, ulceration and tissue edema. In the respiratory tract, the bacteria will form a grayish pseudomembrane. Diphtheria toxin will enter the bloodstream causing various systemic effects including myocarditis, nephritis and peripheral neuritis.⁴

Diphtheria infection produces clinical manifestations on various mucosa. The most common symptoms of respiratory diphtheria are malaise, sore throat, anorexia, and mild fever. On examination of the pharynx, exudate and grayish pseudomembran can be found. The membrane will gradually become thick, firmly attached, and will bleed when exfoliate. In addition to that, anterior cervical lymph node enlargement is often found. If infection spreads to the larynx, hoarseness, dyspnea, stridor and barking cough can be found. Infection of the nasal mucosa results in mucopurulent and or bloody discharge, and a white membrane of the nose. Infections of the skin appear as ulcers.⁵ Diphtheria is a severe and lethal disease because it can cause complications such as pneumonia, myocarditis, neuritis, airway obstruction, septic arthritis, and osteomyelitis. The severity depends on the location of the infected mucosa and the extend of the membranous area formed by the causative bacteria.⁶

The diagnosis of diphtheria is based on clinical symptoms, physical examination of the respiratory or skin mucosa, and investigation of Gram staining or culture of the pharyngeal or skin swab. The data should also be supported by other diphtheria cases in the region.⁷ Diphtheria can be treated using metronidazole 15 mg/kg BW/day divided into 3 dosage, or erythromycin (oral or injection) for 14 days (40mg/kg BW per day with a maximum of 2 g/day), or procaine penicillin G intramuscularly for 14 days

(300,000 U/day for patients' weight < 10kg and 600,000 U/day for weight > 10kg). Patients allergic to penicillin G or erythromycin may be given rifampicin or clindamycin.⁸

The best prevention against diphtheria is through vaccination. Therefore, since this disease can cause death and is currently prevalent in Indonesia, it is advisable for all Indonesians to check their children's immunization status and to visit health facilities immediately if they have children who have not yet complete their DPT immunization.

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