Global eradication of guinea worm disease: Toward a newer milestone

Sir,

As one of the neglected tropical diseases, guinea worm disease will be the first parasitological disease to be targeted for eradication. Guinea worm disease had been known for centuries and described in the literature of India, Greece, and Middle East. Guinea worm disease otherwise called dracunculiasis is a crippling disease caused by *Dracunculus medinensis* transmitted through drinking contaminated water infected cyclops. About 1-year after consumption of contaminated drinking water, the adult worm will emerge through the skin of lower extremities which results in pain and secondary infection producing disabilities. There is no treatment or vaccine for this disease.[1]

From 20 endemic countries across Africa, Middle East, and Asia with 3.5 million cases in 1980s, the dracunculiasis burden was reduced to four endemic countries in Africa with just 148 cases reported in 2013. Currently, the endemic countries are Chad, Ethiopia, Mali, and South Sudan. Majority of the reported cases were from South Sudan, which contributed to 76% of cases in 2013. As of December 2013, 197 countries, territories, and areas were certified free of dracunculiasis. Côte d'Ivoire, Niger, Somalia, Nigeria, and South Africa were the latest to join the list of countries, certified free of the disease. Ghana, Kenya, and Sudan are currently in precertification stage of dracunculiasis eradication.[2]

United Nations had set Guinea worm eradication as an indicator for its "International Drinking Water Supply and Sanitation Decade" that was designated for the decade 1981-1990. World Health Organization (WHO) targets global interruption of transmission of guinea worm disease by 2015. The WHO, United Nation International Children Emergency Fund, The Carter Center, Centers for Disease Control and Prevention and Bill and Melinda Gates Foundation are actively involved in the global progress towards eradication of this disease.[3]

International Commission for the Certification of Dracunculiasis Eradication was established by WHO in 1995. To achieve eradication, a country should be free of indigenous cases for three consecutive years. Precertification stage will be reached after completion of one complete year free of indigenous case of Guinea worm disease (one incubation period for *D. medinensis)*. An indigenous case is defined as infection occurring in a person exhibiting a skin lesion or lesions with emergence of one or more Guinea worms in a person who had no history of travel outside his or her residential locality during the preceding year.[4]

Dracunculiasis is amenable to eradication for the following reasons: There is no animal reservoir, intermediate host that is, cyclops is restricted to stagnant water unlike mosquitoes, simple to diagnose, cost-effective interventions and its limited geographical distribution.[4] WHO has recommended intensifying case containment measures, mapping of endemic villages, improved surveillance, access to improved drinking water supply, treatment of water with temephos as well as providing filters for removal of cyclops and health education for behavioral change.[3]

Cash reward scheme was introduced for voluntary reporting of cases which increased the sensitivity of the surveillance system. On the other hand, insecurity over civil strife in South Sudan which accounts for 76% of cases impedes the surveillance, accessibility issues for remote rural areas, and unusual presentation of the disease in canine population are the main constraint in the eradication.[5]

On the verge of eradication, it needs sustained intensified surveillance, adequate research on canine population for possible threat for future outbreak and determination of all four endemic countries for exterminating the parasite from the world in the near future.

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