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Ibe Ogechi Precious

COMPARATIVE ANALYSIS OF THE EPIDEMIOLOGICAL SITUATION OF DIPHERIA IN UKRAINE AND NIGERIA

Department of Epidemiology
Kharkiv National Medical University,
Kharkiv, Ukraine
Supervisers – prof. T.Chumachenko, as. I. Nesvyzhska

Background. Diphtheria surveillance has been conducted in Ukraine since 1878. Vaccination programs against the disease were first introduced in the region in 1932, and incidence rates rapidly decreased. In Nigeria surveillance in the endemic areas was carried out for 1970-2013. Despite systemic weaknesses, Nigeria has made extraordinary progress in improving access to vaccination in recent years. According to WHO/UNICEF estimates, three-dose diphtheria, tetanus, and pertussis vaccine (DTP3) coverage more than doubled, increasing from 29 % to 69 % during this period. Surveillance, prompt investigation and vaccination direct to halt the spread of disease.

Aim: to study and compare the diphtheria epidemic situation in two countries – Ukraine and Nigeria.

Materials and methods. The study employed a descriptive statistical analysis of morbidity date of the Ministry of Health of Ukraine and Federal ministry of health Nigeria department of public health. Content analysis of scientific publication was performed.

Results/Discussion. Last epidemic of diphtheria in Ukraine was recognized in 1991 in the major urban areas of Kiev, Lviv, and Odessa, in the center, west, and south of the country, respectively. At the time, the susceptible population (i.e., those with neither naturally nor vaccine-acquired immunity) was estimated by serology surveys to be 41 % in rural areas and 44% in urban areas. Following a brief decline in the number of cases during the first half of 1994, a second epidemic wave hit the country in late 1994 and 1995. It is impossible to determine with certainty whether the decrease seen since late 1995 is solely due to vaccination during this period. However, the following observations strongly suggest that the immunization program has been effective. The incidence in Ukraine never approached the levels seen in neighboring Russia, although there is no apparent demographic or prior immunologic history to explain why Ukraine's experience should have been different; the incidence began to decrease within 6 months of the initiation of the mass campaigns, and the rate of decrease was greatest in the oblasts where mass campaigns had been conducted.

In Nigeria a diphtheria outbreak occurred from February to November 2011 in the village of northeastern Nigeria. Ninety-eight cases of diphtheria, overall case-fatality ratio was 21,4 %. In Nigeria was the long time period between the first cases of diphtheria (February, 2011) and the eventual recognition of the clinical syndrome as being diphtheria (September, 2011). As an uncommon disease, clinicians in the area were probably unfamiliar with its presentation. This led to subsequent delays in responses, including case management and vaccination activities, over 9 months after the first case was seen in the village. Some of this delay is also probably explained by the lack of access to healthcare in village. Low rates of immunization, delayed clinical recognition of diphtheria and absence of treatment with antitoxin and appropriate antibiotics contributed to this epidemic.

Conclusions. The epidemic in Ukraine started among children, who had been left vulnerable due to inadequate vaccination coverage, and then quickly spread to adequately protected adults. All available evidence suggests that Ukraine, with the assistance of the international community, was successful in controlling the diphtheria epidemic. The

diphtheria outbreak in northeastern Nigeria illustrates several prevailing challenges in providing care in isolated rural areas in many developing countries. These challenges include, but are not limited to, poor vaccination coverage, weak preventable disease surveillance systems, clinicians' unfamiliarity with uncommon diseases, and limited access to medical care. But the cost of prevention is far less than the cost of arresting an epidemic once it reaches the general population to healthcare facilities.

Joan Itua

EPIDEMIOLOGical CHARACTERISTICS OF HIV INFECTION IN NIGERIA

Department of Epidemiology
National Medical University, Kharkiv, Ukraine
Supervisers – prof. T.Chumachenko, as. I. Nesvyzhska

Background. Nigeria's population of 160 million and estimated HIV prevalence of 3.34% (2011) makes Nigeria the second highest HIV burden worldwide, with 3.2 million people living with HIV in 2013. In Nigeria, there are political structures for HIV control at all Government levels (Local, State and Federal) which are intended to execute comprehensive HIV control programs that include behavioural change communications and healthcare services. However, effectiveness has been limited due to poor coordination, political interference and inadequate political will as evidenced by underfunding by the government.

Aim: To study and analyze the characteristics of the epidemic process of HIV infection in Nigeria.

Materials and methods. The study employed a descriptive statistical analysis of morbidity. Content analysis of scientific publication were performed.

Results/Discussion. National ANC (Antenatal clinic) HIV prevalence rose from 1.8% (1991) to 5.8% (2001) and dropped to 4.1% (2010). Since 2001, states in the center, and south of Nigeria had higher prevalence than the rest, with Benue and Cross Rivers notable. Benue was highest in 2001 (14%), 2005 (10%), and 2010 (12.7%). Overall, eight states (21.6%) showed increased HIV prevalence while six states (16.2%) had an absolute reduction of at least 2% from 2001 to 2010. In 2010, Nigeria was estimated to have 3.19 million people living with HIV, with the general population prevalence projected to drop from 3.34% in 2011 to 3.27% in 2012. Geographic analyses revealed distinctive regional differences in the spatial pattern and intensity of HIV/AIDS infection within the country. Spatial autocorrelation analyses indicated that HIV/AIDS rates were strongly autocorrelated.

The HIV/AIDS epidemic is one of the major public health challenges faced by Nigeria. The HIV prevalence figures derived in these surveys conducted over the years are from pregnant women attending antenatal clinics, with a stabilizing prevalence of about 4% in the last three sentinel surveys. This has been used over the years as proxy for the HIV prevalence in the general population. In our examination of the HIV prevalence in Nigeria for the decade 2001 to 2010 using the 2010 ANC surveillance report and data, we found the following three key issues. First, the overall HIV prevalence in Nigeria plateaued between 4% and 5% in the second half of the decade. Second, there were important differences in the state to state comparisons, with some states maintaining a long term reduction of their HIV prevalence between 2001 and 2008 by 2010, while others showed a reversal of any gains they had made between 2001 and 2008 by 2010. Third, the number of HIV-infected people who will need care and treatment and by inference the number of Nigerians who will need prevention from being infected by HIV is expected to continue to rise.