

MEASLES IN ILORIN: AN EPIDEMIC IN THE MIDDLE OF ERADICATION PLANS

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Forty-one cases of measles were seen within 3 months period in Emergency Paediatric Unit (EPU) of the University of Ilorin Teaching Hospital (UITH) as against a recent report from the same center, which reported 52 cases over a 12 months period. More of the patients in this series needed hospitalization. Males were more affected, 17.1% were infants while 12.2% were older than 10 years. Coliforms were isolated from 40% of the positive blood cultures. Pneumonia was the leading complication and sultamycillin was the commonly used antibiotics. The mean duration of hospital stay was 6.3 days (SD=2.9) and case fatality was 14.6%. This pattern in the middle belt region of Nigeria represents an epidemic. This occurring at a time when a global eradication is being planned and anticipated, calls for a re-appraisal of the dynamics and logistics of the Expanded Programme on Immunization (EPI)

Keywords: Measles; Epidemics; Global Eradication.

INTRODUCTION

During the early 1980s, in the aftermath of smallpox eradication, some public health officials and scientists proposed that effort be directed towards global eradication of measles. However, few years after, the herd immunity required to interrupt measles virus transmission was much higher than obtained in most communities and prospect for eradication receded (1,2). The major obstacle to its eradication were the contagiousness of measles, the lack of a vaccine that is effective among children aged less than 9 months and the incorrect perception that measles is a mild illness (3).

Since the inception of Expanded Programme on Immunization (EPI) in 1974 the number of cases and deaths attributed to measles have declined substantially from an estimated 100 million cases and 5.8 million deaths in 1980 to an estimated 44 million cases and 1.1 million deaths in 1995. In 1974, only 5% of world's children aged 12-23 months

had been vaccinated against measles. By the middle of the 1980s, measles vaccination coverage among children of the same age group in developing countries had reached 42%. From 1985 through 1990, measles cases reported worldwide declined by 56% because of heightened efforts by governments and donor agencies (4). Despite these achievements, measles remain one of the leading causes of childhood mortality in developing countries, especially among the under 5 years old children from places of low vaccination coverage (5). Even countries that have recorded several years of low incidence frequently have experienced large measles outbreaks (6,7).

There had been anecdotal reports and personal communication that measles may be occurring in epidemic manner in other parts of Nigeria, which have not been previously documented in Ilorin, Nigeria. Ilorin, the capital of Kwara State has better immunization coverage when compared with

other parts of Nigeria. The State has won the national awards for leading in immunization coverage in the Poliomyelitis Eradication and if such performance would be extrapolated for other antigens, then one expect measles coverage to be optimal in Kwara State as well. I therefore, decided to study the occurrence of new cases (incidence), of measles prospectively in UITH Ilorin.

METHODS

Site

The University of Ilorin Teaching Hospital (UITH) is a referral center, which serves both as teaching institutions as well as general hospital in Kwara State. The hospital is made up of two wings namely general hospital wing where emergency paediatrics unit is located and maternity wing. The maternity wing consists of the Obstetrics and Gynaecology department and the Neonatal Intensive Care Unit. The hospital is centrally located within the middle belt zone of the country and serves patients from sub-urban and rural areas in at least six other states of Ekiti, Osun., Kogi, Oyo, Niger and Sokoto states. Ilorin being a state capital is multiethnic and multinational in composition.

Patient recruitment and logistic

All children presenting in the Emergency Paediatrics Unit (EPU) of the hospital within 3 consecutive months period (January 1st–March 31st 2000) who satisfied the World Health Organization (WHO) case definition for measles were recruited and prospectively studied. No viral studies were done for lack of facilities. The age, sex, weight, presenting clinical and immunization status were recorded. All the patients were managed in a standard way. Those with complications

were on admission while others were managed on out patient basis. Standard care consisted appropriate antibiotics, calamine lotion, adequate fluids and /or food, Vitamin A administration on days 1, 3 and 14. Patent on admission were reviewed during ward round twice daily (morning and evening ward rounds) and patients on out patient basis were seen every 72 hours.

RESULT

During the study period, a total number of 306 patients were admitted, 178(58.2%) were male while 128 (41.8%) were females. Within this study period, 41 cases of measles were seen out of which 22 (53.7%) were admitted. This constituted 7.2% of the total admission over the period.

The sex, age and admission status distribution of patients with measles were as shown on Table 1. Seven (17.1%) were infants, 26 (63.4%) were between 1 and 5 years old. The under-5 year old constituted 80.5% while 3 (7.3%) were 6-10 years of age and 5(12.2%) were above 10 years of age. Twenty-seven (65.9%) were males while 14 (34.1%) were females and 22 (53.7%) were admitted while 19 (46.3%) were treated on out patient basis.

All patients presented with fever (100%) while other presenting features were as shown on Tables II. Skin rash was seen in 23 (56.1%), cough in 17 (41.5%), diarrhoea in 12 (29.3%), eye discharge in 8 (19.5%), catarrh in 17 (17.1%), vomiting in 6 (14.6%), breathlessness in 5 (12.2%) while convulsion, restlessness, mouth ulcers, refusal of feeds and submental lymphadenopathy were present in 1 (2.4%) patient each.

The complications were as shown in Table III. Bronchopneumonia was seen in 18 (43.9%), diarrhoea disease in 12 (29.3%),

purulent conjunctivitis in 8 (19.5%), pharyngitis in 3 (7.3%), malnutrition (Kwashiokor), convulsion and mouth ulcers in 1 (2.4%) patient each.

The variety of generic antibiotics used in the cases of measles was as presented in Table IV. Sultamycillin was used in 22 (53.7%), Gentamycin in 19 (46.3%) patients while Ampicillin and Cloxacillin were used in 7 (17.1%) patients each. Chloramphenicol was used topically in 3 (7.3%) patients, crystalline penicillin in 2 (4.8%) patients while erythromycin was given to 1 (2.4%) patient.

Seventeen patients (41.5%) had blood culture done and isolates were grown in 5 (12.2%). The percentage culture yield was 29.4%. The organisms isolated were Coliforms 2 (40%), *Staphylococcus aureus* 1 (20%), viridian streptococcus 1 (20%) and Acinetobacter 1 (20%).

The mean duration of fever, the only constant symptom before presentation, was 6.3 days (SD = 2.9). The case fatality was 14.6% as 6 patients with measles died of one complication or another.

Table 1: Distribution of measles case by age, sex and admission study

PARAMETER AGE (YEARS)	NUMBER	PERCENTAGE (%)
>1	7	17.1
1 - 5	26	63.4
6 - 10	3	7.3
>10	5	12.2
Sex		
Males	27	65.9
Females	14	34.1
Admission Status		
Admitted	22	53.7
Not Admitted	19	46.3

Table 2: Presentation of 41 patients with Measles

PRESENTATION	NUMBER	PERCENTAGE (%)
Fever	41	100
Rash (skin)	23	56.1
Cough	17	41.5
Diarrhoea	12	29.3
Eye discharge	8	19.5
Catarrh	7	17.1
Vomiting	6	14.6
Breathlessness	5	12.2
Mouth ulcers	1	2.4
Convulsion	1	2.4
Restlessness	1	2.4
Refusal of feed	1	2.4
Submental Lymphadenopathy	1	2.4

Table 3: Complications in 41 patients with Measles

COMPLICATION	NUMBER	PERCENTAGE (%)
Brochopneumonia	18	43.9
Pharyngitis	3	7.3
Malnutrition	1	2.4
Diarrhea disease	12	29.3
Convulsion	1	2.4
Mouth ulcers	1	2.4
Purulent conjunctivitis	8	19.5

DISCUSSION

The incidence of measles had remarkably gone down worldwide until recently when an upsurge was noticed (6,8). In Nigeria, there have been anecdotal reports of probable epidemics in certain states of the country earlier on (9). This has not been previously documented in Ilorin. In a most recent report by Ojuawo *et al* (10), 52 patients were seen over a 12 months period showing a remarkable variation to this report where 41 cases were seen within just 3 months period. Incidences of 1.3% in Ojuawo's report and 7.2% in this report were incomparable. Also in Benin, Nigeria, 68 cases were reported over a 3-year period (1). Report in this study probably qualifies for an epidemic.

The age distribution was comparable to the previous study in the same centre (8). Infants constituted 17.1% of all the patients. A significant number of the patients were also older children. This is in contradistinction to other studies in Nigeria (12,13). The need for admission in this series was much more or higher than the previous study in Ilorin or other centers in Nigeria (8, 10 -13). This might suggest that the cases in this series were more

severe and probably have higher incidence of measles complications.

The variety of bacteria isolates grown in 5 patients form the baseline report from Ilorin. Except for *Acinetobacter*, all isolates were not unusual agents. The choice of antibiotics in treating bacterial infections complicating measles reflected on Table IV is also a foremost report from Ilorin. However, the antibiotics were within the usual range in other reports. Sultamycillin was mostly used probably because of its broader spectrum of activities against both Gram-positive and Gram-negative organisms. The mean duration of the most constant symptom, fever of 6.3 days, shows that majority of parents still do not consider fever as a major problem and hence the delay in seeking medical helps. Some might also have sought medical helps but with a missed diagnosis and later came to the emergency room when it became obvious that the first medication would not work. The 14.6% case fatality was remarkably higher than previous report from our center and from Benin, Nigeria. This might be due to severity of the illness and the heavy patients load that over stretch our facility.

With the present status of measles in Ilorin and occurrence of epidemics involving

older patients, a constant surveillance is advised. Also a re-immunization with measles vaccine should be considered. The sources of our vaccine must be carefully chosen and cold chain meticulously maintained for potency preservation. Also, with the occurrence of measles in children below 9 months, there is need to consider the use of Edmondson-Zegreb vaccine, which could be used in spite of the presence of the maternal immunity in Nigeria.

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