Pediatric Emergencies Seen in a Tertiary Hospital in Uyo, Akwa Ibom State of Nigeria: A two Year Review

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Abstract

Introduction: The trend in major causes of childhood illnesses and deaths may evolve or change over time, even within the same community. It is, therefore, important to perform periodic evaluations on the patterns of morbidity and deaths. This could bring to highlight emerging public health challenges and help to guide priority health-care planning and delivery.

Purpose: To determine the causes of hospitalization and deaths in children admitted to the children emergency unit (CHEU) of the University of Uyo Teaching Hospital, Uyo, Akwa Ibom State in a 2-year period.

Materials and Methods: A retrospective study, with review of the records of all children, from 7 weeks of age to 17 years, admitted and managed in the CHEU, between November 2012 and October 2014.

Results: There were a total of 2533 children, age ranged from 7 weeks to 17 years admitted in the 2-year study period, with a male/female ratio of 1.2:1. The leading causes of illnesses included malaria (29.6%), broncho-pneumonia (9.6%), diarrhea (9.0%), septicemia (8.5%), surgical emergencies (5.8%), trauma (4.6%), and sickle cell disease (4.0%). Others included meningitis (2.7%), measles (1.5%), poisoning (0.7%), and tetanus (0.5%). The month of March recorded the highest number of admissions. A majority (92.6%) of the patients were discharged with a mortality rate of 2.7%. The patients that left against medical advice constituted 4.7% of the total admissions.

Conclusion: The major causes of morbidity in these children were infective illnesses such as malaria, bronchopneumonia, and diarrhea. The trend showed a rising incidence of surgical emergencies, sickle cell disease, and trauma while measles and tetanus were noted to be on the decline.

Key words: Emergencies, Nigeria, Pediatric, Uyo

INTRODUCTION

The childhood period is fraught with various illnesses requiring hospitalization. Some may lead to deaths of affected children if not properly managed. This is especially so in children living within resource-poor countries, where health-care delivery is still sub-optimal, and a relatively high child-to-pediatrician ratio persists in most of the regions.1

Surveillance of the common illnesses and causes of deaths in children living in these settings becomes imperative if child mortality reduction targets must be achieved.1,2 Periodic evaluations of disease patterns for different localities even within the same country are necessary for informed priority setting. It helps to quantify progress against explicit health targets and evaluate which programs are working or not. Emerging public health challenges can also be easily identified.

Infectious and communicable diseases have been largely responsible for a greater percentage of childhood illnesses and mortality in developing countries in the last recent decades.3 These include malaria, respiratory infections, diarrhea, measles, and malnutrition.3 Furthermore, trauma and non-communicable diseases were a noticeable emerging trend.3,4 However, the global burden of disease
2010 reported substantial decreases in child mortality driven by reductions in diarrhea, lower respiratory tract infections, and more recently malaria. These health statistics, which are based on various studies and data generated from several countries, may be inadequate to serve every population. It, therefore, behoves that indigenous studies are undertaken, to reveal better, what diseases prevail within each community.

This study was aimed at reviewing the pattern of pediatric emergencies seen in children older than 6 weeks of age, managed in the children emergency unit (CHEU) of the University of Uyo Teaching Hospital, Uyo, Nigeria. Moreover, to compare the present result from an erstwhile study done in the same unit over 5 years ago, to assess if any changing trend. This would help re-prioritize interventions and health-care planning strategies.

**MATERIALS AND METHODS**

This study is retrospective and descriptive in design. It covered a period of 2-year, from November 2012 to October 2014. The records of all children aged 7 weeks to 17 years, as documented in the register were reviewed. The children from the 1st day of life to the age of 6 weeks are managed in the neonatal wards of this facility and were therefore excluded. Furthermore, any child with incomplete data entry was excluded. Information extracted from the records included age, gender, final diagnosis, duration, and outcome of the treatment.

The University of Uyo Teaching Hospital is one of the tertiary health-care facilities in Akwa Ibom State, located in the outskirts of Uyo about 6 km from the center of the city. The hospital is a 355 bed health-care facility and serves as a referral center, also accepting self-reported cases. The Department of Pediatrics provides in-patient and out-patient services for all children.

The CHEU has a 22 bed capacity with an average admission rate of 120 children/month. It is manned by a full complement of staff that includes consultants, resident doctors, interns, and nursing staff with 24 h shift duty coverage on all categories of staff. It undertakes basic resuscitation, treatment, and management of all children presenting there. A side room laboratory, diarrhea treatment unit, and pharmacy are also a functional part of the unit.

The definitive diagnosis documented was as made by the unit consultants. This was based on the presenting clinical features, with or without results of laboratory tests. The diagnosis of malaria, for instance, was supported by the presence of malaria parasites in the blood film. Anemia was diagnosed on clinical grounds, supported by a hemoglobin estimation and sickle cell disease by hemoglobin electrophoresis. Measles was based on clinical features, and septicemia/meningitis was diagnosed based on clinical features, with or without a positive blood culture or abnormal cerebrospinal fluid analysis. The patients with pneumonia were diagnosed either clinically or with chest radiographs or both. HIV/AIDS were diagnosed based on positive ELISA test on a patient with features of the World Health Organization clinical case definition, confirmed by the western blot test. The good clinical response to certain medications by some patients was used to assign the final diagnosis in some cases.

The outcome was classified as discharged, left against medical advice (LAMA), and death.

The data obtained was analyzed using the bar chart, frequency tabulations, and cross tabulations of the Microsoft Excel.

**RESULTS**

A total of 2533 children were managed in the 2-year period. The total number of males being 1470 (54.7%) and females 1216 (45.3%), giving a male:female ratio of 1.2:1. The leading causes of illnesses included malaria 29.6%, broncho-pneumonia 9.6%, diarrhea 9.0%, septicemia 8.5%, surgical emergencies 5.8%, trauma 4.6%, and sickle cell disease 4.0%. Others included meningitis 2.7%, measles 1.5%, poisoning 0.7%, and tetanus (0.5%). This is represented in Table 1.

The number of admissions per month is represented in Figure 1, and this shows that the months of March (310), February (274), and January (260) recorded the highest number of admissions.

Table 2 shows that children <5 years constituted over half of the total admissions in this study (51.0%), and also had the highest burden of infective illnesses, especially bronchopneumonia (87.2%), diarrheal diseases (79.9%) and malaria (27.3%).

The outcome of admissions showed a greater percentage (92.6) being discharged in satisfactory condition, with a low mortality percentage (2.7) as seen in Table 3.

**DISCUSSION**

This study revealed infectious diseases, especially malaria as the highest cause for hospital admissions in the CHEU.
This is similar to observations from other tertiary hospitals across the eastern and western parts of Nigeria. It is also comparable to an erstwhile study in the same center and unit that was documented over 5 years ago. The difference between both studies in the same center lies in the reduced percentage of malarial incidence in the past 2 years of study (29.6%), compared to the previous study, which was 56.6%. The reduction in the total incidence of malarial admissions may be related to the millions of long-lasting insecticide treated nets which have been distributed as part of the global malaria control strategy. In addition, over-the-counter usage of artemisinin-based combination drugs, which are widely available and user-friendly must be sustained to reduce malarial associated illnesses and deaths in children, especially under-fives.

Pneumonia constituted 9.6% of total admissions in this study which is higher than observations from some other centers in Nigeria. With the commencement of the pentavalent vaccine which gives immunity against some pneumococcal strains, this trend should be monitored and evaluated to assess the success of its recent inclusion in the schedule of the National Programme for Immunization. A reduction in the incidences of measles and tetanus may be as a result of improved vaccine coverage and uptake in the state.

Strikingly, childhood poisoning has remained at the rate of 0.7% of total admissions, as was recorded in the previous study in this center. There is still need for sustained community enlightenment campaigns on the prevention of accidental childhood poisoning.

The month of March recorded the highest number of admissions. The rainy season usually starts about this month in Uyo, Akwa Ibom State of Nigeria. This is the period during which an increase in the incidence of malaria, pneumonia, diarrheal disease, and water-borne diseases is observed.

The children aged <5 years constituted over half of total admissions during the period under review in this study.
study. This pattern is similar to the findings from other centers.10,15,16

A majority of the patients were discharged with a mortality rate of 2.7% observed in this study. This is lower than the 5.1% reported by Toma et al. in Jos Nigeria,16 and the rate of 10.0% recorded by Anyanwu et al. in Abakaliki, Nigeria.17

The common causes of death in this study included septicemia, bronchopneumonia, and malaria. This agrees with reports that pneumonia, diarrhea, and malaria rank high among the causes of pediatric deaths, particularly in children aged 1-59 months.17,18

The rate of “LAMA” observed in this study (4.7%) is higher than the rates of 2.0% observed by Ndukwu and Onah19 2.1% by Toma et al.16 and 3.8% observed by Anyanwu et al.,17 respectively. Some of the common reasons for LAMA include lack of acceptance of the treatment modalities20 and financial constraints.21

CONCLUSION

This study revealed that infectious diseases, particularly malaria and pneumonia, are common causes of morbidity and mortality in children presenting in our center. The outcome of the admissions in the CHEU of this facility is observed to be good, with the vast majority of children being discharged, and relatively low rates of mortality and LAMA. However, there is still need for continuous improvement and sustenance of the quality of health services provided, as well as community enlightenment on the common childhood diseases.

REFERENCES