Print ISSN: 2321-6379
Online ISSN: 2321-595X
DOI: 10.17354/ijss/2016/371

Original Article

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

Eno-Obong Udomobong Bassey, Echey Ijezie

Consultant, Department of Pediatrics, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria

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 sup-optimal, and a relatively high child-to-pediatrician ratio persists in most of the regions.[1]

Access this article online

www.ijss-sn.com

Month of Submission : 05-2016
Month of Peer Review : 06-2016
Month of Acceptance : 07-2016
Month of Publishing : 07-2016

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

Corresponding Author: Dr. Eno-Obong Udomobong Bassey, Department of Pediatrics, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria. Phone: +234-8064087511. E-mail: utukenoobong@yahoo.com

2010 reported substantial decreases in child mortality driven by reductions in diarrhea, lower respiratory tract infections, and more recently malaria.[5] These health statistics, which are based on various studies and data generated from several countries, may be inadequate to serve every population. It, therefore, behaves 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,[4] 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.

Table 1: Pattern of admission over the study period

Disease	Number of patients (%)
Malaria	750 (29.6)
Bronchopneumonia	242 (9.6)
Diarrhea	229 (9.0)
Septicemia	216 (8.5)
Surgical emergencies	147 (5.8)
Trauma	117 (4.6)
Sickle cell disease	102 (4.0)
Meningitis	65 (2.7)
Measles	39 (1.5)
Poisoining	17 (0.7)
Tetanus	13 (0.5)
Others	596 (23.5)
Total	2533 (100.0)

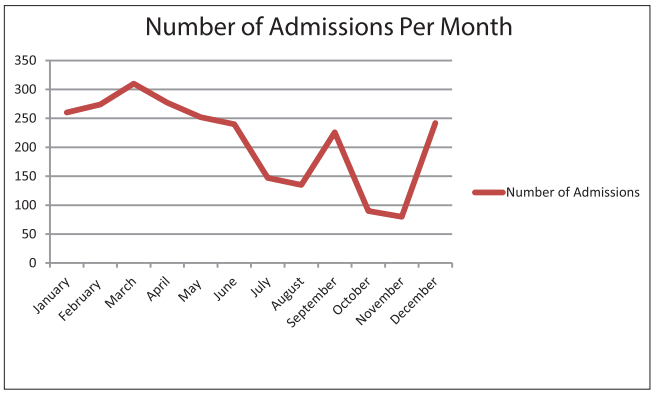

Figure 1: Number of admissions per month. Health workers industrial strike involving nurses and other paramedics occurred during the months of July and August

Table 2: Age distribution of the patients

Diagnosis	*N* (%)			
	<5 years	5-10 years	>10 years	Total
Malaria	295 (39.3)	250 (33.3)	205 (27.3)	750 (100.0)
Bronchopneumonia	211 (87.2)	31 (12.8)	0 (0.0)	242 (100.0)
Diarrhea	183 (79.9)	31 (13.5)	15 (6.6)	229 (100.0)
Septicemia	115 (53.2)	76 (35.2)	25 (11.6)	216 (100.0)
Surgical emergencies	68 (46.3)	49 (33.3)	30 (20.4)	147 (100.0)
Trauma	70 (59.8)	31 (26.5)	16 (13.7)	117 (100.0)
Sickle cell disease	36 (35.3)	51 (50.0)	15 (14.7)	102 (100.0)
Meningitis	29 (44.6)	27 (41.5)	9 (13.9)	65 (100.0)
Measles	37 (94.9)	2 (5.1)	0 (0.0)	39 (100.0)
Poisoning	12 (70.6)	4 (23.5)	1 (5.9)	17 (100.0)
Tetanus	1 (7.7)	11 (84.6)	1 (7.7)	13 (100.0)
Others	236 (39.6)	202 (33.9)	158 (26.5)	596 (100.0)
Total	1293 (51.0)	765 (30.2)	475 (18.8)	2533 (100.0)

Table 3: Outcome of admissions

Diagnosis	*N*			
	Discharged	LAMA	Died	Total
Malaria	720	24	6	750
Bronchopneumonia	220	15	7	242
Diarrhea	217	8	4	229
Septicemia	183	19	14	21
Surgical emergencies	134	7	6	147
Trauma	101	9	7	117
Sickle cell disease	97	5	0	102
Meningitis	53	7	5	65
Measles	37	0	2	39
Poisoning	11	3	3	17
Tetanus	10	1	2	13
Others	520	22	16	596
Total (%)	2346 (92.6)	119 (4.7)	68 (2.7)	2533 (100)

LAMA: Left against medical advice

This is similar to observations from other tertiary hospitals across the eastern and western parts of Nigeria.[5-8] It is also comparable to an erstwhile study in the same center and unit that was documented over 5 years ago.[4] 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.[9] 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.[6,10-12] 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.[4] 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.[13,14]

The children aged <5 years constituted over half of total admissions during the period under review in this

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 Onah[19] 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 modalities[20] 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

1. Ekure EN, Esezobor CI, Balogun MR, Woo JG, Muktar-Yola M, Ojo OO, *et al*. Paediatrician workforce in Nigeria and impact on child health. Niger J Paed 2013;40:112-4.
2. Burden of disease unit. The global burden of diseases. Havard link title to 2000. Available from: http://www.hsps.havard.edu/organizations. [Last accessed on 2016 May 02].
3. Deen JL, Vos T, Huttly SR, Tulloch J. Injuries and noncommunicable diseases: Emerging health problems of children in developing countries. Bull World Health Organ 1999;77:518-24.
4. Enobong EI, Eno-Obong EU. Pattern of paediatric emergencies and outcome as seen in a tertiary hospital: A five year review. Sahel Med J 2009;12:73-7.
5. Naghavi M, Wang H, Lozano R, Davis A, Liang X, Zhou M, *et al*. Global, regional and national age-sex specificall cause and cause-specific mortality for 240 causes of death, 1990-2013: A systematic analysis for the global burden of disease study 2013. Lancet 2015;385:117-71.
6. Edelu BO, Eze BN, Oguonu T, Ndu IK. Morbidity and mortality pattern in the children emergency unit of the University of Nigeria Teaching Hospital, Enugu. Morbidity and mortality in children. Orient J Med 2014;26:73-5.
7. Elusiyan JB, Obiajunwa PO, Adejuyigbe EA, Olowu WA, Adeodu OO, Owa JA, *et al*. Pattern of morbidity and mortality among children hospitalized at the Obafemi Awolowo University Teaching Hospital, Ile-Ife. Niger J Paed 2009;36:22-8.
8. Ojukwu JN, Ogbu CN, Nnebe-Agumadu UH. Post neonatal medical admissions into the paediatric ward of Ebonyi State University Teaching Hospital, Abakaliki: The initial experience and outcome. Niger J Paed 2004;13:79-86.
9. Russell CL, Sallau A, Emukah E, Graves PM, Noland GS, Ngondi JM, *et al*. Determinants of bed net use in Southeast Nigeria following mass distribution of LLINs: Implications for social behavior change interventions. PLoS One 2015;10:e0139447.
10. Bilkisu GI, Aminu MS, Sunday OO, Bassey E, Smart A, Muyideen AB. Pattern of medical childhood morbidity and mortality in a new specialist hospital in Gusau, Nigeria. Ann Niger Med 2014;8:15-9.
11. Ugwu GIM. Pattern of morbidity and mortality in the newborn special care unit in a tertiary institution in the Niger Delta region of Nigeria: A two year prospective study. Glob Adv Res J Med Med Sci 2012;1:133-8.
12. Abhulimhen-Iyoha BI, Okolo AA. Morbidity and mortality of childhood illnesses at the emergency paediatric unit of the University of Benin Teaching Hospital, Benin City. Niger J Paed 2012;39:71-4.
13. Mouneke UV, Ibekwe RC, Eke CB, Ibekwe MU, Chinawa JM. Mortality among paediatric inpatients in Mile 4 Mission hospital Abakaliki, South-Eastern Nigeria: A retrospective study. Niger J Paed 2013;40:259-63.
14. Ijezie E, Okpokowuruk FS. Mortality audit in the paediatrics department of the University of Uyo teaching hospital, Uyo, Nigeria. Int J Res Med Sci 2016;4:615-20.
15. Chukwu BF, Chinawa JM, Ikefuna AN, Emodi IJ. Pattern and outcome of paediatric medical admissions at the University of Nigeria Teaching Hospital (UNTH), Ituku-Ozalla, Enugu: A five year retrospective review (2007-11). Niger J Paed 2013;40:354-3.
16. Toma BO, Gyang M, Abdu H, Shwe D, Ekere IA, Ihekaike M. Paediatric morbidity and mortality in a Suburban Hospital in Jos, North-Central Nigeria. Int J Trop Dis Health 2015;5:156-64.
17. Anyanwu OU, Ezeanosike OB, Ezeonu CT. Pattern and outcome of admissions at the children emergency room at the federal teaching hospital Abakaliki. Afr J Med Health Sci 2014;13:6-10.
18. Liu L, Oza S, Hogan D, Perin J, Rudan I, Lawn JE, *et al*. Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: An updated systematic analysis. Lancet 2015;385:430-40.
19. Ndukwu CI, Onah SK. Pattern and outcome of postneonatal pediatric emergencies in Nnamdi Azikiwe University Teaching Hospital, Nnewi, South East Nigeria. Niger J Clin Pract 2015;18:348-53.
20. Ndukwu CU, Ogbuagu CN, Ihegihu CC, Ugezu AI, Chukwuka CN. Discharge against medical advice amongst orthopaedic patients in Nnewi, South-East Nigeria, and its public health implications. Orient J Med 2014;26:9-15.
21. Onyiriuka AN. Pediatric discharge against medical advice: Experience from a Niger secondary healthcare institution. Med J Islam Repub Iran 2011;25:194-9.

How to cite this article: Bassey EU, Ijezie E. Pediatric Emergencies Seen in a Tertiary Hospital in Uyo, Akwa Ibom State of Nigeria: A two Year Review. Int J Sci Stud 2016;4(4):42-45.
Source of Support: Nil, **Conflict of Interest:** None declared.