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Original Research Article

Pattern of Paediatric Admissions in Emergency Paediatric Unit of a Tertiary Health Facility in North Central Nigeria: A Two Years Retrospective Study

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ABSTRACT

Background: Emergency care is one of the services, which improves patient's chances of survival. The knowledge of the common causes of morbidity is important for understanding the epidemiological profile of disease in a population. The information obtained is beneficial in evaluating services, the pattern of illnesses and deaths.
Objective: To determine the pattern of Paediatric admissions in emergency Paediatric unit of Benue State University Teaching Hospital (BSUTH), Makurdi, during the first two years of the institution.
Methodology: The study was a retrospective study of all admissions into the EPU between January 2013 to December 2014.All the case files of the patients were retrieved and information on age, sex, diagnosis and outcome were retrieved. The children were between one month to 15 years who were admitted into the emergency Paediatric unit of BSUTH. Statistical analysis was done using Statistical Packages for Social Sciences (SPSS) version 20.0
Results: A total of 679 admission cases were reviewed within the study period. Of these 291(42.9%) admissions was in 2013 and 388(57.1%) was recorded in 2014.The principal diagnosis in 2013 were malaria 85(29.2%), febrile convulsion 28(7.2%), bronchopneumonia 39(13.3%), Septiceamia 25(8.6%) and sickle cell disease 20(6.9%) as compared to malaria 90(23.2%), diarrheoa 88(22.7%), Septiceamia 47(12.1%) and bronchopneumonia 18(4.6%) in 2014.Among the neoplastic diseases seen acute lymphoblastic leukemia was commonest (0.7%).
Conclusion: Malaria, bronchopneumonia and diarrheoa diseases are the most prevalent causes of childhood morbidity presented in emergency Paediatric unit of the hospital. There is need for effective control measures for the prevention of these diseases.

Keywords: Emergency Paediatric admissions, Makurdi, Nigeria

INTRODUCTION

The aim of the World Health Assembly by the Millennium development goal is to improve the quality of life of individuals and their survival through improved health care amongst others. [1] Emergency care is one of the services which improve patient's chances of survival. [1] The Paediatric emergency unit (EPU) as a key area of service in every tertiary health

institution is an example of the various emergency services rendered to patient. Due to the peculiar nature of the categories of patient involved, EPU is usually a busy service area with a high patient turnover in most health facilities [1]

Approximately 12 million children die annually before reaching the age of five years in developing countries. [2] Under- five mortality rate for Nigeria as at the end of 2013 is 117 per 1000 live births while the Millennium development target for under five mortality by 2015 is 71 per 1000 live births. [3] Several studies indicate that children in Nigeria and other less developed countries may suffer from virulent attacks of infectious and parasitic diseases and die. [4,5] Many of the causes of such deaths are preventable. Infections and communicable diseases such as respiratory diseases, diarrheoa, malaria, measles and malnutrition account for 70 percent of the deaths. [6,7] Majority of the published health statistics in Nigeria are hospital based, and it is well recognized that these are inadequate source of information for the entire population.

Despite these limitations, hospital records of morbidity and mortality patterns serve as pointers to what exist in the population. The information obtained from such studies may form a basis for health care planning, improving existing facilities and patient care. [8] There have been earlier reports on the pattern of childhood morbidity and mortality from centers in the country but none has being reported from Makurdi; these predated the upsurge of HIV infection. [2-6] There has not been any report from Benue State University Teaching Hospital (BSUTH), Makurdi, Benue State which describes the pattern of admissions into the EPU. In this report we describe our experience on pattern of childhood morbidity in our EPU within the first two years of commencement of clinical services at BSUTH to see if it's comparable with what is obtainable in other centers in the country.

MATERIALS AND METHODS

The study was undertaken at BSUTH, Makurdi, which became functional in the year 2012. It is a State owned tertiary health facility that serves the whole citizen of Benue State and its environs. The Paediatric unit of the hospital has staff strength of sixty-five comprising of consultants, registrars, nurses and other ancillary staffs. The unit renders inpatient and outpatient services and emergency services.

The study was a retrospective study covering January 2013 to December 2014. The subjects consisted of children aged one month to fifteen years admitted into the emergency Paediatric unit (EPU) within the study period. The patients whose information was incomplete were excluded from the study. A total of 679 eligible cases of admissions in the EPU during the study period were reviewed. The information collected included the age, sex, final diagnosis, investigations and outcome of hospitalization. The final diagnosis was based on the assessment by the managing unit, which was based on the clinical features with or without laboratory investigations.

Data analysis:

Data collected was checked for errors and analyzed using Statistical Packages for Social Sciences (SPSS) version 20.0. The variables were summarized and presented as tables and charts.

Ethical approval

Ethical approval for the surveys was sought from the Benue State University teaching hospital research ethics committee, before the commencement of the study.

RESULTS

Table 1: Disease distribution by sex, 2013(n=291)

Disease	Frequency (%)	Sex	
		Male Freq. (%)	Female Freq. (%)
Malaria	85(29.2)	53(62.4)	32(37.6)
BPN	39(13.4)	23(59.0)	16(41.0)
Septicemia	25(8.6)	16(64.0)	9(36.0)
SCD	20(6.9)	8(40.0)	12(60.0)
Diarrhoea	28(9.6)	16(57.1)	12(42.9)
Meningitis	10(3.4)	10(100.0)	0(0.0)
Pharyngotonsillitis	10(3.4)	7(70.0)	3(30.0)
Febrile convulsion	9(3.1)	6(66.7)	3(33.3)
Poisoning	7(2.4)	3(42.9)	4(57.1)
Bronchial asthma	5(1.7)	2(40.0)	3(60.0)
Nephrotic syndrome	5(1.7)	2(40.0)	3(60.0)
HIV/AIDS	5(1.7)	2(40.0)	3(60.0)
UTI	4(1.4)	1(25.0)	3(75.0)
AGN	4(1.4)	2(50.0)	2(50.0)
Seizure disorder	4(1.4)	1(25.0)	3(75.0)
Bronchiolitis	4(1.4)	2(50.0)	2(50.0)
HEART failure	5(1.7)	2(40.0)	3(60.0)
Aspiration pneumonia	3(1.0)	0(0.0)	3(100.0)
Measles	2(0.7)	0(0.0)	2(100.0)
Viral hepatitis	2(0.7)	1(50.0)	1(50.0)
Otitis media	2(0.7)	1(50.0)	1(50.0)
Acute lymphoblastic leukemia	2(0.7)	2(100.0)	0(0.0)
Near drowning	1(0.3)	0(0.0)	1(100.0)
Tetanus	1(0.3)	1(100.0)	0(0.0)
Hodgkins lymphoma	1(0.3)	1(100.0)	0(0.0)
Dog bite	1(0.3)	1(100.0)	0(0.0)
DKA	1(0.3)	0(0.0)	1(100.0)
Acute gastritis	1(0.3)	1(100.0)	0(0.0)
Others	5(1.7)	2(40.0)	3(60.0)
Total	291(100.0)	166(57.0)	125(43.0)

Of the total 679 admissions cases reviewed, there were 291(42.9%) admissions in 2013 and 388(57.1%) in 2014. The number of Males admitted in 2013 was 166(57.0%) and Females were 125(43.0%) (m:f 1:1.3) while in 2014 Males accounted for 211(54.4%) and Females 177(45.6%) (m:f=1:1.2). The principal diagnosis in 2013 were Malaria 85(29.2%), Broncho-pneumonia 39(13.4%), Septicemia 25(8.6%), Sickle Cell Disease 20(6.9%), Diarrhoea 28(9.6%), meningitis 10(3.4%) and febrile convulsion 9(3.1%). Among the neoplastic diseases, acute lymphoblastic leukemia constitutes the highest (0.7%), followed by Hodgkins lymphoma (0.3%) (Table 1). Comparatively, in 2014, the prevalent cases were malaria 90(23.2%), Diarrhea 88(22.7%), Septicemia 47(12.1%), febrile convulsion 28(7.2%), Bronchopneumonia 18(4.6%), Pharyngoton-sillitis 17(4.6%) and sickle cell disease 15(3.9%). Rheumatoid arthritis, Nephro-blastoma, and Rhabdomyosarcoma all constitutes 0.3% each (Table 2).

Table 2: Disease distribution by sex, 2014 (n=388)

Diseases	Frequency (%)	Sex	
		Male Freq. (%)	Female Freq. (%)
Malaria	90(23.2)	59(65.6)	31(34.4)
Diarrhoea	88(22.7)	53(60.2)	35(39.8)
Septiceamia	47(12.1)	21(44.7)	26(55.3)
Febrile convulsion	28(7.2)	10(35.7)	18 (64.3)
BPN	18(4.6)	8(44.4)	10(55.6)
Pharyngotonsillitis	17(4.4)	11(64.7)	6(35.3)
SCD	15(3.9)	7(46.7)	8(53.3)
Meningitis	11(2.8)	9(81.8)	2(18.2)
UTI	9(2.3)	3(33.3)	6(66.7)
Pulmonary TB	8(2.1)	3(37.5)	5(62.5)
Heart failure	7(1.8)	4(57.1)	3(42.9)
Poisoning	6(1.5)	2(33.3)	4(66.7)
Bronchial asthma	6(1.5)	2(33.3)	4(66.7)
HIV/AIDS	6(1.5)	3(50.0)	3(50.0)
Septic shock	3(0.8)	1(33.3)	2(66.7)
ARF secondary to HUS	3(0.8)	2(66.7)	1(33.3)
Snake bite	3(0.8)	1(33.3)	2(66.7)
PEM	3(0.8)	1(33.3)	2(66.7)
Otitis media	2(0.5)	0(0.0)	2(100.0)
AGN	2(0.5)	1(50.0)	1(50.0)
Fungal dermatitis	2(0.5)	1(50.0)	1(50.0)
Bronchiolitis	2(0.5)	1(50.0)	1(50.0)
Juvenile rheumatoid arthritis	1(0.3)	0(0.0)	1(100.0)
Hepatitis	1(0.3)	1(100.0)	0(0.0)
Nephroblastoma	1(0.3)	1(100.0)	0(0.0)
Rhabdomyosarcoma	1(0.3)	1(100.0)	0(0.0)
Mumps	1(0.3)	1(100.0)	0(100.0)
Others	7(1.8)	4(57.1)	3(42.9)
Total	388	211(54.4)	177(45.6)

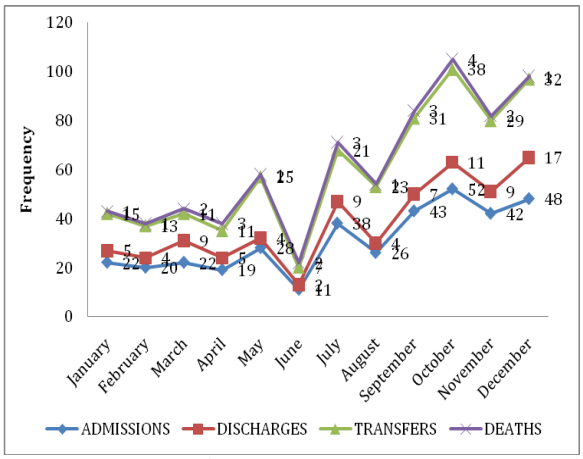

Figure 1: Trend of Monthly admission and outcome of treatment, 2013

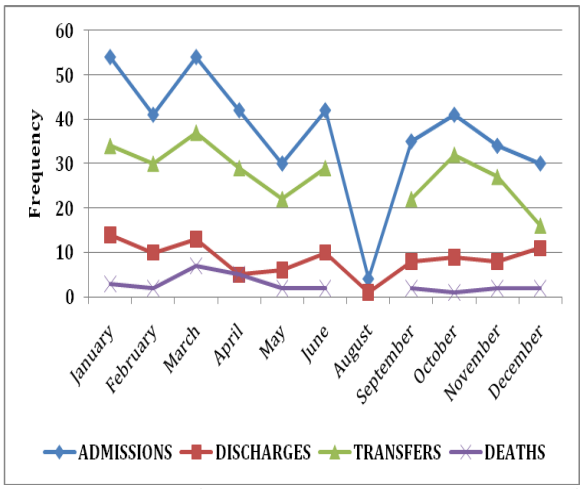

Figure 2: Trend of Monthly admission and outcome of treatment, 2014

Figure 1and 2 shows the trend of admissions and outcome within the two years reviewed. In 2013, admissions were highest between the months of October and December (figure 1), while in 2014 admissions were highest in January and March (figure 2). There were no admissions in July, 2014 as a result of the Industrial Action. In 2013 we had a total of 24 (8.2%) mortalities as compared to 28 (7.2%) in 2014.

DISCUSSION

This study has shown that in overall, malaria was the commonest cause of admission into the EPU of Benue State University Teaching Hospital (BSUTH). This is comparable with reports from other centers within the country [2,7,9 -11] which also showed that malaria was the commonest cause for admission. However, it is at variance with the report by Oruambo which ranked malaria very low as causes of hospital admission. [12] A possible explanation could be the changing pattern of malaria with increasing incidence of resistance to various anti-malarial drugs in recent years. [13] The pattern of childhood diseases in Nigeria has remained largely unchanged. [2,6] This is in contrast to the study from Lagos [14] and Benin [6] where respiratory infections and diarrheoa disease were the commonest causes of admission. The resurgence of malaria and lower levels of vaccination coverage and health care utilization are also contributing to the reversal in child survival trends. Also in this study, no disease was recorded in July 2014, due to industrial action in the state. In situation where diseases like tuberculosis are present the total absence of hospital services recorded here could act as a serious threat to management since multidrug resistant issues could arise.

Our study also showed that more males were seen than females and this is similar with other studies. [15] Lower respiratory tract infection especially bronchopneumonia were the commonest respiratory disease seen in our study. This is similar to studies in other places. [16-18]

The world health organization recognizes diarrheoa diseases and acute respiratory tract infections as the leading causes of childhood morbidities and similar findings were documented in this study. [19] This is at variance with the study by Mc Gil Ugwu which documented respiratory system involvement as the commonest reason for admission. [20] This is because the cause of diarrheoa disease has remained high in developing countries. These infections are preventable and curable with minimal cost if recognized early. These preventable diseases are proving difficult to eradicate probably because of deteriorating environmental conditions, ignorance and worsening socioeconomic situation in Nigeria as a result of frequent communal conflicts and insurgency. Diarrhoea disease is partly due to inadequate sanitation and poor water supply. Despite the provision of low osmolar Oral Rehydration Salts (ORS) children still die from Diarrhoea due to poor reconstitution of ORS.

The upsurge in the HIV/AIDS pandemic is complicating the picture. This

study has documented HIV infection as one of the reasons for admission and comparable to other studies. [18] Urinary tract infection was the most common renal disease in this study, while Nephrotic syndrome was common in other centers. [21] Sickle cell anaemia was the most common hematological presentation, this accounted for 15% of the cases. This is similar to studies elsewhere. [22] The neoplastic diseases seen in our study were different from that reported by Ojukwu et al [9] and George in Port Harcourt. [16] By implication, different neoplastic conditions are emerging among paediatrics in different regions of the country; hence further research is needed to determine the correlates of these conditions.

CONCLUSION

The study has shown that infections are the commonest causes of admissions in children in the study area. Therefore there is need for stronger preventive measures against this group of disorders. Parents should be educated about the importance of seeking early treatment for childhood illnesses. Health professionals should make early case detection and appropriate management with follow up of children.

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