

AN AUDIT OF CASES ADMITTED IN THE CHILDREN EMERGENCY WARD IN A NIGERIAN TERTIARY HOSPITAL

George IO¹, Tabansi PN²

ABSTRACT

Objective: Knowledge of cause-specific morbidity and mortality is essential for understanding the overall epidemiological profile of disease in a population. The aim of this study was to audit the morbidity and mortality pattern of cases admitted into the children emergency ward of the University of Port Harcourt Teaching (UPTH), Port Harcourt, Nigeria.

Methodology: This was a prospective cross sectional study of children from one month to 16 years who were admitted into the children emergency ward of the UPTH from 1st January 2008 to 31st December 2008. Information collected included age, gender, presenting features, diagnosis, complications and outcome. Data collected was entered into a spread sheet using SPSS 15.0 for Windows[®] statistical software which was also used for analysis.

Results: A total of 2,009 children comprising of 1,105(55%) males and 904(45%) females were admitted to the Children emergency during the study period. Common diagnoses, were malaria 452(22.5%), diarrhoeal diseases 276(13.7%) and bronchopneumonia 261(12.9%). Fever, fast breathing, anaemia and convulsions were the most frequently documented clinical features. The overall mortality was 4.5%. More than 80% of the deaths occurred in children below the age of five years. Malaria and HIV infections were responsible for more than one third of the deaths in the emergency ward.

Conclusion: Malaria, Diarrhoeal diseases and HIV are important causes of childhood morbidity and mortality. There is need for effective control measures for prevention of these diseases.

KEY WORDS: Mortality, Childhood, Emergency ward, Malaria, HIV/AIDS.

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1. IO George,
 2. PN Tabansi
- 1-2: Department of Paediatrics,
University of Port Harcourt Teaching Hospital,
Port-Harcourt,
Nigeria.

Correspondence:

Dr. IO George,
Department of Paediatrics,
University of Port Harcourt Teaching Hospital,
Port Harcourt,
Nigeria.
E-mail: geonosdemed@yahoo.com

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INTRODUCTION

Childhood morbidity and mortality in developing countries is still high and may reach up to 100 deaths/1000 live births.¹ Several studies^{2,3} indicate that children in Nigeria and less developed countries may suffer from virulent attacks of infectious and parasitic diseases and die. Many such deaths are preventable with available health technology. The most common killers of children in these countries are identified to be diarrhoea and other vaccine preventable diseases such as measles, tetanus, polio; tuberculosis and diphtheria. Infant and childhood mortality in Nigeria is nearly ninety seven

per thousand (97/1000) live births compared with Botswana (85 per 1000), Mauritius (28 per 1000) and developed region (16 per 1000).⁴ This clearly shows that Nigeria has a very high infant and child mortality.

In most developing countries diseases are under-reported and the data are usually based on case reports. Also, the reporting system in Nigeria is not satisfactory enough to produce good quality information. It is in this respect that an audit of hospital admissions was undertaken to evaluate morbidity and mortality pattern of diseases admitted into the children emergency ward of the University of Port Harcourt Teaching (UPTH), Port Harcourt, Nigeria.

METHODOLOGY

This was a prospective cross sectional study of children from one month to 16 years who were admitted into the children emergency ward of the UPTH, Port Harcourt, Nigeria from 1st January 2008 to 31st December 2008. It is the only tertiary hospital located in the metropolis of Port Harcourt, catering a population of about 541,115.⁶ The hospital serves as a general and referral centre for neighboring states. A structured questionnaire was used to collect data which included age, gender, presenting features, diagnosis, complications and outcome. The reason for admission of the children is regarded as the principal diagnosis. Data collected was collected manually onto a proforma and analysed with SPSS 15.0 for Windows[®] statistical software. Descriptive statistics was used.

RESULTS

There were a total of 2,009 admissions during the study period. Of these 1,105(55%) were males and 904(45%) females. The male to female ratio was 1.2:1. The main reasons for admissions were fever 1,365(67.9%), anaemia 506(25.2%), fast breathing 281(14.0%), diarrhoea 276(13.7%) and convulsions 123(6.1%). The principal diagnoses were severe malaria 452(22.5%), diarrhoea 276(13.7%), bronchopneumonia 261(12.9%) and HIV/AIDS 85(4.2%) as shown in Table-I. The main presenting features for HIV/AIDS were:

Failure to thrive 76(89%), oral candidiasis 52 (61.2%), cough 50(58.8%) and diarrhoea 47(55.3%).

Most commonly associated complications of malaria were hyperpyrexia 356(78.8%), haemoglobinuria 176(38.9%), anaemia 121(26.8%), cerebral malaria 52(11.5%) and jaundice 48(10.6%). There were 90(4.5%) deaths

Table-I: Principal diagnosis of children admitted into Children emergency ward (n = 2009)

<i>Diagnosis</i>	<i>No.</i>	<i>%</i>
Severe malaria	452	22.50
Diarrhoea	276	13.74
Bronchopneumonia	261	12.99
Tonsillitis	168	8.36
Septicaemia	108	5.37
Meningitis	100	4.98
HIV/AIDS	85	4.23
Sickle cell crisis	83	4.13
Bronchiolitis	41	2.04
Acute asthma	34	1.69
AGN	27	1.34
CHD	24	1.20
Epilepsy	23	1.14
Intestinal obstruction	17	0.85
Abscess	17	0.85
UTI	14	0.70
Chronic renal failure	12	0.60
Cellulitis	12	0.60
Kerosine poisoning	12	0.60
Disseminated TB	11	0.55
Wims tumour	9	0.45
Foreign body aspiration	8	0.40
Orbital cellulitis	7	0.35
Marasmus	7	0.35
Oncological emergencies	6	0.30
Acute renal failure	6	0.30
ALL	6	0.30
Typhoid	5	0.25
Appendicitis	5	0.25
Meningomyelocoele	5	0.25
Impetigo	5	0.25
Mastitis	4	0.20
Adenoid hypertrophy	4	0.20
Burkitt lymphoma	4	0.20
Tetanus	3	0.15
Septic arthritis	3	0.15
Measles	3	0.15
Intususception	3	0.15
Others	139	6.92

Key: AGN- Acute glomerulonephritis, CHD-Congenital heart disease, UTI- Urinary tract infection, TB- Tuberculosis, ALL- Acute lymphoblastic leukaemia.

comprising 62(68.9%) males and 28(37.1%) females (Figure 2). Malaria, HIV/AIDS and meningitis were the commonest causes of death accounting for 27.8%, 21.1% and 11.1% respectively (Figure 2). Thirty nine (43.3%) of the deaths occurred within 24 hours. Others were: Between 24 hours to 48 hours 21(23.3%); b 48 hours to 72 hours 10(11.1%); 72 hours to 96 hours 13(14.4%) and more than 96 hours 7(7.8%). Fifty eight (64.4%) of deaths in the emergency ward were among infants. Twenty two (24.4%) of the children between the ages of 1- 5 years died while 11(12.2%) children whose ages were above 5 died in the emergency ward.

DISCUSSION

There were more males (1,105) than females (904) admitted into the children emergency ward of our hospital, which could be related to the biological vulnerability of males to infections. The male preponderance of admission has been documented in various studies.^{7,8}

The overall mortality was 4.5%, that is lower than 9.9% reported by Aihkionbare et al⁹ and 12.1% reported by Abdurrahman¹⁰ in Kaduna, northern Nigeria. In this study, more than three quarter of the deaths were seen in children under five years. This is consistent with previous reports in Nigeria.⁷⁻⁹

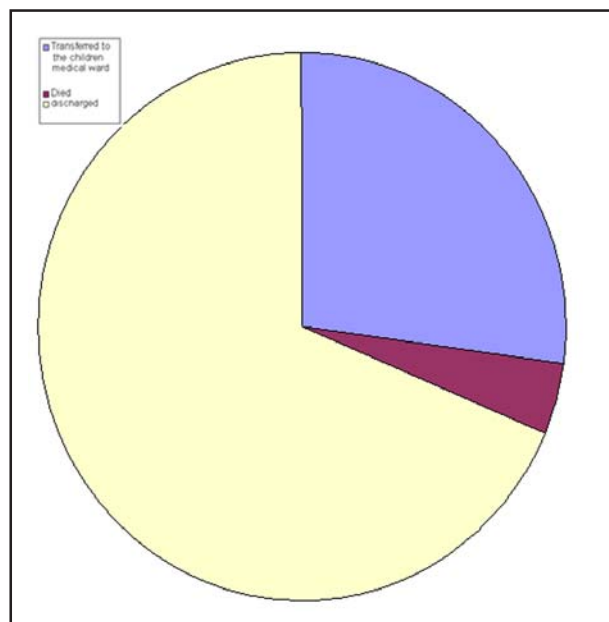


Figure-1: Outcome of admission into CHEW.

We observed that 43.3% of the deaths in the emergency ward occurred within 24 hours of admission. This could be attributed to delay in care-seeking and referral to the hospital. Also limited personnel and admission procedures such as opening of folders, payment of admission deposit may increase mortality within 24 hours of admission. Our finding is similar to the 43.7% reported by Chawla et al¹¹ from Zimbabwe but lower than the 57.6% reported by Aikhionbare et al⁹ and 64.9% by Menge et al³ from Kenya.

HIV/AIDS was the commonest cause of death in our study. We found pneumonia, diarrhoea and TB co-infection as major contributory causes of death in our patients. A number of studies^{8,12,13} have pointed to increased child mortality as a result of the AIDS epidemic. This is a natural conclusion based on the evidence that vertical transmission of HIV occurs in approximately 32 percent of births to HIV infected mothers in countries where breastfeeding is prevalent¹² and 60 percent of children who are infected with HIV will die before their fifth birthday.¹³ It is evident that some of the increase in child mortality is due to direct transmission from mother to child, and some of it is caused by indirect effects due to maternal illness or

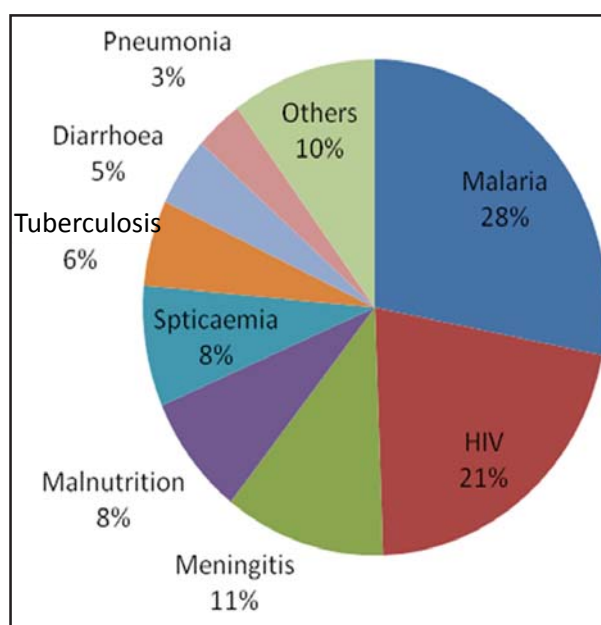


Figure-2: Causes of death among the children admitted into the emergency ward

maternal death.¹⁴ The resurgence of malaria and lower levels of vaccination coverage and health care utilization are also contributing to the reversal in child survival trends.¹⁵ These negative trends in high prevalence settings could be due to an overload on health resources due to AIDS. Malaria infection was one of the commonest causes of morbidity and mortality in this series. This has been documented by other investigators in African.^{10,16} The major causes of death identified were late presentation to the hospital, anaemia and cerebral malaria. In a study conducted by oruamabo¹⁷ many years ago in the same centre; it was noted that malaria ranked very low as the reason for childhood hospital admissions which is at variance with our finding. A possible explanation is the changing pattern of malaria with increasing incidence of resistance to various anti-malarial drugs in recent years.¹⁸

Most of the rural areas do not have access to good health care systems. Usually there are no accessible roads to the health centers, which in turn are poorly equipped and have inadequate drugs for malaria treatment. Drug resistant malaria is common and anti malarial drugs are becoming less effective as the plasmodium parasite develops resistance to affordable drugs. This poses a serious threat to clinical management and treatment of malaria. Children wear little clothing during the day and at night due to heat and humidity, thus leaving their bodies exposed to mosquito bites. Rural dwellers cannot afford to purchase bed nets. Houses are poorly constructed and are surrounded by bushes. Water is collected from streams and wells and left standing in open clay pots since there are usually no running taps.

In conclusion, the implication is that any health intervention to reduce childhood mortality rate must address the prevention and control of this two disease entities. Parents should be informed of the importance of early treatment seeking for any health problem seen in their young children. Health professionals should make timely case detection, appropriate management and follow up of young children.

REFERENCES

1. Singhi S, Gupta G, Jain V. Comparison of pediatric emergency patients in a tertiary care hospital vs. a community hospital. *Indian Pediatr* 2004;41:67-72.
2. Ibeziako SN, Ibekwe RC. Pattern and out come of admission in the children emergency room of the University of Nigeria Teaching Hospital, Enugu. *Nigerian J Paediatrics* 2002;29:103-107.
3. Menge I, Esamai F, Van Reken D, Anabwani G. Paediatric morbidity and mortality at the Eldoret District Hospital, Kenya. *East Afr Med J* 1995;72:165-169.
4. Adebayo SB, Fahrmiel L. Analysing child mortality in Nigeria with geoaddivitive discrete-time survival models. *Statistics in medicine* 2005;24:709-728.
5. Otaigbe BE, Ugwu RO. Pattern of communicable diseases admitted into the paediatric ward of the University of Port-Harcourt Teaching Hospital. *Port Harcourt Med J* 2007;1:151-155.
6. National Population Commission 2006. Population Distribution in LGAs by sex and number of household. Port Harcourt Office, Port Harcourt, Nigeria.
7. Lawal OM, Temiye EO. Pattern of preschool children's admission and mortality in a private health facility in Lagos, Nigeria. *Nig Med Pract* 1998;35(3/4):42-46.
8. George IO, Alex-Hart BA, Frank-Briggs AI. Mortality pattern in children: A hospital based study in Nigeria. *Int J Biomed Sci* 2009;5(4):369-372.
9. Aikhionbare HA, Yakubu AM, Naida AM. Mortality pattern in the emergency paediatric unit of Ahmadu Bello University Teaching Hospital Zaria. *Cent Afr J Med* 1989;35:393-396.
10. Abdurrahman MB. Why our children die: A study of mortality pattern in an emergency paediatric unit in Kaduna, Nigeria. *Nigerian Medical Practitioner* 1983;5:157-162.
11. Chawla V, Hauton B. Pattern of childhood mortality at Harare central hospital, Zimbabwe. *East Afr Med J* 1988;65:238-245.
12. Walker N, Peter G. Proportion of child mortality attributable to HIV. Presented at Meeting on the Empirical Evidence for the Demographic and Socio-Economic Impact of AIDS. Durban, South Africa, March 26-28, 2003.
13. Spira R, Lepage P, Mselati P, P Van de Perre, Leroy V, Simonon A, et al. Natural history of human immunodeficiency virus type 1 infection in children: A five year prospective study in Rwanda. Mother to Child Transmission Study Group. *Pediatrics* 1999;104(5)
14. Ng'weshemi J, Urassa M, Isingo R, Mwaluko G, Ngalula J, Boerma T, et al. HIV impact on mother and child mortality in rural Tanzania. *J Acquired Immune Deficiency Syndrome* 2003;33(3):393-404.
15. Rutstein, Shea. Factors associated with trends in infant and child mortality in developing countries during the 1990s. *Bulletin of the World Health Organisation (Geneva)*, 2000;78(10):1256-1270.
16. Muhe L, Byass P, Freij L, Sandstrom A, Wall S. A one-year community study of under-fives in rural Ethiopia: Patterns of morbidity and public health risk factors. *Public Health* 1995;109:99-109.
17. Orumabo RS. Analysis of paediatric medical cases admitted into the University of Port Harcourt Teaching Hospital, Nigeria. *East Afr Med J* 1987;64:520-526.
18. Whitty CJM, Allan R, Wiseman V, Ochola S, Nakyanzi-Mugisha MV, Vonhm B, et al. Averting a malaria disaster in Africa - where does the bulk stop? *Bull Wld Hlth Org* 2004;82(5):381-384.