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Childhood malignancies in University of Abuja Teaching Hospital Gwagwalada, Abuja, Nigeria.

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Abstract: *Background:* Mortality from malignancies in children remains high. Creating awareness of the disease and advocacy for funding of a cancer research center are pertinent.
Objective: To determine the incidence and outcome of children with cancers at the University of Abuja Teaching Hospital, Gwagwaglada, Abuja- FCT, Nigeria
Method: This was a 5 year prospective study of all diagnosed cancer patients admitted into the paediatric ward. The type of cancer, method of diagnosis, clinical staging and outcomes were entered and frequency tables generated on Microsoft Excel.
Results: Forty-six patients were diagnosed with cancer within the study period. Burkitt's lymphoma was the highest encountred malignancy, while medulloblastoma was least occurring. Only 36.9 percent (N=17) of patients received chemotherapy. Of these, 6.5 percent (n=3) completed therapy. Twenty nine percent of patients died. 4 percent of those that died had commenced chemotherapy. There was a 70 percent treatment default rate. One patient was referred on request to another tertiary center. All other patients were lost to follow up.
Conclusion: Management of childhood cancers still poses a problem. Poverty, ignorance and lack of cancer research units contributed to our poor outcome. The greater involvement of government and international non-governmental organizations (NGO) which assist health sector is advocated in the establishment of cancer research centers and the provision of free chemotherapeutic agents.

Key words: Cancers, mortality, Advocacy

Introduction

Cancers in children make up a small proportion of the total admissions in paediatric wards, however the mortality rates from this disease is high. Poverty, ignorance and superstition and poorly equipped health facilities are factors that continue to contribute to the poor outcome of patients with this disease.[1,2,3]

In Nigeria, the management of cancers is still froth with the problems of poor diagnostic facilities, high cost of drugs, coupled with ignorance, late presentation and poverty leading to continuing poor patient outcome. Furthermore, there are few paediatric oncologists and cancer research and treatment units which makes cancer care a problem for the general practice paediatrician. This also hinders research in cancers.

While mortality rates in developed nations are improving due to better management techniques, newer, more potent drugs and adjuvant therapies, mortality has remained high in developing countries. It is estimated that 2 out of 3 children with cancers treated in western countries will be cured, but with the cost of therapy being out of the reach of many children, death from disease is likely to occur in African children.[4]

This study carried out in a hospital in north central region of Nigeria to determine the incidence and outcome of cancers in children seen and to highlights the difficulties encountered in the management of paediatric cancers.

Method

This is a 5- year prospective study carried out in the Department of Paediatrics University of Abuja Teaching Hospital (UATH) Gwagwalada between May 2000 to May 2005. The peaditric department has 110 beds and

offers all levels of care. The age limit in the department is 15years.

All paediatric patients with presumed malignancies admitted into the paediatric ward were recruited in the study. There were no exclusion criteria. Consent was obtained from the medical ethics committee of the hospital.

The cancer type, method of diagnosis, treatment (based on exsisting protocol), and outcome and follow up findings were entered into a data sheet. Clinical examination, surgical findings, radiological films and histology were used in the staging of cancer where possible.

Counseling of patient's caregiver was done in the primary language of communication once a diagnosis was made and before the commencement of treatment. Counseling included an explanation of what cancers were, the stage of patient's cancers, the pre - chemotherapy requirements, management of complications that could arise as a result of chemotherapy and the need to complete chemotherapy. The possible outcomes and monetary implications were also discussed.

The main method of tissue sampling was by fine needle aspiration biopsy (FNAB). Bone marrow aspiration and tissue biopsy were done where possible. Full blood counts, and radiologic films were also used as tools of diagnosis.
Data was entered into microsoft excel 2007. Results were displayed as frequency tables.

Results

There were 53 children admitted for persumed cancers, only forty-six (46) had confirmed malignancies. FNAB was used to diagnose 23 patients, bone marrow aspiration five, tissue biopsy in 15 and radiologic investigations provided diagnosis in two while one had diagnosis confirmed with blood film picture.

There were 17 females and 29 males. The over-all M:F ratio was 1.7:1. Their ages ranged between 0.6 years to 14 years with an average age of 6.6 years.
Table 1 shows the types of cancers and the frequency of their occurrence. Lymphomas made up 58.7 percent (n=27) of the cancers with Burkitts accounting for 74 percent of this while it accounted for 43.5 percent of the total cancers recorded. The two others had histologic reports of blue cell tumors without definitive diagnosis of cancer type. Eleven (23%) children presented with early stages of disease. Among these were eight with stage A Burkitts lymphoma (Zigler's classification), one with L2 leukemia (FAB classification) and two with stage I and II of Nephroblastoma (the National Wilms Tumor Study Group) .

Table 1: Incidence of Cancers in Children

Cancer type	Number	%(n=46)
Burkitts	20	43.5
Non Hodgkins	4	8.7
Hodgkins	3	6.5
Nephroblastoma	7	15.2
Neuroblastoma	1	2.2
Acute leukemia	6	13.0
Retinoblastoma	1	2.2
Osteogenic sarcoma	1	2.2
Medulloblastoma	1	2.2
Others	2	4.3

Seventeen patients (36.9 percent) received chemotherapy, of which three (17.6 percent) completed their course and 11 (70.5 percent) defaulted from treatment while three died (17.6 percent). No patient attended follow-up in the oncology clinic. Table 2 summarizes the patient outcome.

Of the 29 patients who did not receive treatment, 22 (75.9 percent) left against medical advice. None presented for re-admission or to the Oncology clinic.

Ten (21.7 percent) children died, seven before the commencement of chemotherapy and three after the commencement chemotherapy.

Table 2: Overview of patient treatment and outcome (N=46)

	Number of patients	%
Patients who received chemotherapy	17	36.9
Patients who did not receive	29	63.0
Patients that left against medical advice without treatment	22	47.8
Number who died while on admission	10	21.7

Discussion

In this 5-year study, the number of cases diagnosed was comparable to studies done in other regions of Nigeria (most of which were done more than a decade ago).[1-7,12] These numbers are considerably lower however than the number of new cases per year seen in some developed countries.[8,9] The existence of a National cancer registry in those countries helps greatly to kept accurate statistic of the disease burden.

Issues of ignorance, poverty or superstition, which may cause parents to seek alternative forms of therapy thus

not presenting in hospitals, further mitigates against the capturing of accurate statistics. Lack of diagnostic facilities with death occurring before diagnosis or non-diagnosis, also compounds the numbers of missed cases. During this study period, there were several industrial actions which further affected the number of patients enrolled.

The pattern of childhood cancers in Nigeria has remained largely unchanged over the last 40 years with Burkitts lymphoma being the predominant cancer in Nigerian children[1,3,4,7,12]. This was also shown in this study. The mortality rate in this study though low may not be a true rate. Within the period of study, many parents withdrew their children from hospital while an equally high number never returned to complete treatment. Death at home or in seeking alternative therapy would also have occurred in most cases.

Paediatric cancer patients pose a lot of concern to paediatricians.[2,11-12] As in other studies[1-6,14] late presentations with advanced disease compounded by delays in establishing a diagnosis and starting treatment were also problems encountered in management in this study.

The major mode of diagnosis was percutaneous fine needle aspiration. This method is a quick effective and inexpensive alternative to open biopsy.[15,16] Proper staging was incomplete in most patients. This was due both to a lack of facilities and death.

The default rate in this study was quite high. This is not however uncommon in other studies [1,2]. With such a high default rate, less than 8% of patients benefited from drug therapy. The high default rates recorded maybe again attributable to poverty and in some cases parental fatigue. Patients defaulting from treatment makes it difficult to determine whether drugs and regimens are effective in the treatment of childhood cancers in this region and thus difficult to determine cure rates in this environment.

Counseling is known to effectively engage patient in care.[17] However despite pretreatment counceling, the desired outcome did not occur in this study as default rates and rates of discharge without the benefit of therapy was high.

Cancer is a health problem in Nigeria which continues to suffer neglect. As in most developing countries, it is considered a low priority disease as it grapples for finacial resources with communicable diseases and environmental sanitation.[18] With the involvement of many donor agencies in the eradication of childhood diseases, the setting up of cancer research and treatment centers is strongly advocated. Also policies that would support free treatment for children are recommended.

Conflict of interest : None
Funding : None

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