IBOM MEDICAL JOURNAL
Vol.17 No.2 | May - August, 2024 | Pages 292 - 294
www.ibommedicaljournal.org

Childhood Wilm's tumour in Aba, South East Nigeria

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Abstract

Background: Wilm's tumour is still a problem to paediatric oncologist in developing countries due to poverty, late presentation, high cost of chemotherapeutic drugs, ignorance and religious beliefs.
Objective: To review the clinical presentation, management and outcome of Wilm's tumour in Aba, South East Nigeria.
Methods: The Demography, clinical presentation, investigation results, operative findings and outcome of patients less than 15 years old managed for Wilm's tumour at the paediatric surgery unit of the Abia State University Aba, South East Nigeria from 2010 to 2020 were retrospectively reviewed.
Results: There were 30 children (M: F 2 :1) with histological confirmed nephroblastoma over the 10 year period. Their median age was 5. Age range 4-15years. Palpable abdominal mass was the main presentation in all the patients. Treatment consisted of nephro-ureterectomy followed by adjuvant chemotherapy with Vincristine, Cyclophosphamide and Actinomycin D. Adriamycin was added for metastatic disease and anaplasia. Fifteen of the patients had stage III disease, 10 had stage II disease and 5 had stage IV disease. Stage I disease was not encountered. Five patients had inoperable tumour requiring preoperative chemotherapy. Five patients died from the complication of chemotherapy treatment. Seven relapsed with poor outcome, with a mean follow up of 20 months, 20months survival rate is 40%.
Conclusion: There is high rate of morbidity and mortality from nephroblastoma in our environment due to late presentation, poverty, ignorance and poor compliance to treatment. The outcome will be improved through health enlightenment and healthcare funding.

Keywords: Wilm's tumour, Childhood.

Introduction

Wilm's tumour is the most common malignant neoplasm in the urinary tract of children accounting for 95% of all paediatric tumours of the kidney. Nephroblastoma is the fifth most common paediatric malignancy.[1] The embryonal tumour develops from the remnant of persistent metanephric tissue which is made up of histologic elements: blastemal, stromal and epithelial cells.[2] Nephroblastoma is relatively more common in blacks than in whites and is associated with a number of syndromes such as WAGR syndrome, Beckwith- Wiedemann syndrome, and Denys-Drash syndrome.[3]

The Wilm's tumour usually present as a painless abdominal mass which may be associated with haematuria, hypertension, and fever. The peak age of incidence is 4 years. Incidence beyond 5 years of age is rare.[4] The prognosis of Wilm's tumour depends on the tumour stage, biological factors and histological subtype. Treatment of nephroblastoma is multimodal which includes surgery, chemotherapy and/or radiotherapy.[5] The study was to review the clinical presentation, management and outcome of Wilm's tumour in Aba, South East

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DOI: 10.61386/imj.v17i2.438

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Methods

The Demography, clinical presentation, investigation results, operative findings and outcome of patients less than 15 years old managed for Wilm's tumour at the paediatric surgery unit of the Abia State University Aba Nigeria from 2010 to 2020 were retrospectively reviewed from the clinical notes and theatre records.

Results

There were 30 children, 20 boys and 10 girls with a boys to girls ratio of 2:1 with histological confirmed nephroblastoma over the 10 year period. Their median age was 5. Age range 4-15years.

Clinical presentation: All the children presented with abdominal mass. The average duration of symptoms before presentation is 3months (1-6months). Fever, weight loss and haematuria were present 18, 10 and 2 respectively.

Evaluation: Computerised tomography, Ultrasound, intravenous urography and chest radiograph were carried out in all the patients. The results showed right kidney tumour in 18 children and left kidney tumour in 12 children. Computerised tomography and ultrasound showed liver involvement in 6 children. Chest radiograph showed lung metastasis in 4 children at presentation. Definitive diagnosis was based on histopathological evaluation of specimen obtained during surgery.

Treatment: Nephro-ureterectomy was the definitive treatment in all the patients. 5 patients had preoperative chemotherapy to downstage the tumour before surgery. The adjuvant chemotherapy was with Vincristine, Cyclophosphamide and Actinomycin D, Adriamyccin was added for systemic metastasis. Fifteen patients had stage III disease, ten patients had stage 11 disease and five patients had stage IV disease. Stage I disease was not encountered. Five patients had inoperable tumour requiring preoperative chemotherapy. Five patients died from the complication of chemotherapy treatment. Seven patients relapsed with poor outcome, with a mean follow up of 20 months, 20months survival rate is 40%.

Discussion

The number of patients in this study may not be a true representation of children with nephroblastoma in Aba and its surrounding towns of South East Nigeria. A good number of patients go to the churches, prayer houses and herbalists due to poverty, ignorance and local beliefs.[6]

The demography is similar to other studies done in this sub-region. However, the distribution of the stages is at variance to what is obtainable in developed countries.[7] Most of the patients in this study are mainly stage II and III while stage I was not encountered due to late presentation. Late presentation which is a common problem in many developing countries may be related to ignorance and poverty. Most of the children are usually managed at primary health care centres with lack of qualified personnel and diagnostic facilities for diagnosis leading to late presentation.[8]

Nephroblastoma is regarded as one of the successes of pediatric oncology with long term survival approaching 90% and 70% for localized and metastatic diseases respectively. The overall outcome of treatment of nephroblastoma in this study of 40% is very poor.[8]

Multidisciplinary collaboration among surgeons, paediatricians, pathologist and radiation oncologist have led to excellent outcome in the management of nephroblastoma in developed world. The improvement in collaboration between different specialists involved in the management of nephroblastoma in our sub-region will enhance the survival rate of our patients.[8]

Anyanwu and co–workers in Kano, Nigeria provided solution in their centre by providing services, including sale of drugs, to all paediatric age groups at half of adult prices. Secondly, the drugs are purchased directly from representatives of companies that produce these drugs or import them, thereby eliminating the middleman and added marginal cost. Thirdly the Drug Manufacturing Unit of the Pharmacy Department produces some paediatric medications for example haematinics which are then sold to patients at minimal cost.[9]

However, other far reaching measures need to be adopted. These include institutional evaluation of generics of branded anticancer drugs and if found efficacious to switch to these generics.[10] This solution was adopted in a study in Kantarjian and

co- workers in United States of America authorised by FDA resulting within a week in the reduction in the price of a branded anticancer drug by 50%.[11]

Conclusion

There is high rate of morbidity and mortality from nephroblastoma in our environment due to late presentation, poverty, ignorance and poor compliance to treatment. The outcome will be improved through health enlightenment and health funding.

Acknowledgement: We want to use this medium to thank our patients that made the research possible. The nurses, medical students, residents, theatre staff and pathological anatomy departmental staff that contributed to the success of this project.

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