

Epidemiological Profile of Retinoblastoma in Nampula Central Hospital, Mozambique

Abstract

Retinoblastoma is a malignant tumor developed from retinal photo receptor cells of the retina. It occurs in most cases in young children and accounts for 3% of tumors endured by children under 7 years. The work aims to evaluate the Nampula Central Hospital the epidemiology of retinoblastoma in children younger than 4 years to compare to several other corners of the world the incidence is lower, equal or higher than in Mozambique, the same way it is intended establish education strategies for specific population in prevention of this disease and the latest treatments. Materials and methods was to use was the gathering of data in Nampula Central Hospital, descriptive and observational cross-section study.

Results: It was found the mayor percentage in males and the ages from 3 to 4 years old, are most affected by the disease.

Conclusion: We can observed that this disease its really high in nampula, the results it can be seen that the disease primarily affects male children of 3-4years, and many of them arrive at the final stage of the disease. It may also be noted that with each passing year the number of cases is increasing so unfortunate in children; we can continue to investigate the number of cases and development promotional health programs in the hospital.

Keywords: Retinoblastoma; Epidemiological profile; Oncology; Children; Mozambique

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Ângela Joana Efécio^{1,2}, Silvia Marcela Escobar Durán^{1,2*} and Yolanda Mapolone^{2,3}

¹Department of optometry advance and visual health sciences, Mozambique

²Department of optometry, Lúrio University, Mozambique

³Ophthalmologist, Nampula's central hospital, Mozambique

***Corresponding author:** Silvia Marcela Escobar Durán, Department of optometry, Lúrio University, Nampula City, Mozambique, Tel: 258821863522; E-mail: silmaesco@gmail.com

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Introduction

The Retinoblastoma is the most common primary intraocular cancer in children and a rare disease; is characterized by a malignant tumor, which originates in the unripe retinoblasts. Its distribution is 3% of deaths in children, the age is essentially because 95% of the retinoblastoma's have been detected, or diagnosed before the age of 5 years. The males were a high predisposition and the tumor can presented in both eyes equally [1]. In the study is intended to create a demographic table indicating the number of people identified in HCN, who suffer from this condition. Will be referenced the Age, Gender, Race, Heredity It is intended to record the Percentage of children affected by this disease by gender and age presentation. The world epidemiology of retinoblastoma said that approximately 63% of retinoblastoma diagnoses occur before 2 years and about 95 % up to 5 years [2].

The data indicate that the delay diagnosis for more than 6 months from the first clinical symptom is associated with a 70% mortality [3]. Although intraocular be highly curable disease and good prognosis, 93% of life 5 years in developing countries that have socio-economic constraints and limited access to medical care resulting in delayed diagnosis and diagnosed in advanced stages where there is extra ocular spread, mortality attributed to retinoblastoma is higher [4]. The Incidence of retinoblastoma in the United States 90% of retinoblastoma cases was identified and 97% were histologically confirmed. The incidence of retinoblastoma was 11.2 per million children 5 years of age.

According to the distribution of cases by age 63 cases (90%) patients were 5 years of age and 22 cases (31%) patients were diagnosed in the first year of life [5].

African epidemiology

The 5-year event-free survival for children with cancer is 75% to 79% in high-income countries (HIC). However, 80% of the world's children live in a low-income countries such Mozambique (LIC), where poverty, lack of public health infrastructure, high mortality rates in children under the age of 5 years, and low childhood cancer cure rates are pervasive. In such settings, studies of cancer epidemiology may seem to be an unaffordable luxury because the cost of the treatments is really high [6]. Outcomes are still very poor in sub-Saharan Africa. Previous studies found that about 52 cases of retinoblastoma were seen in University College Hospital, Ibadan over 5 years. There were 36 cases of retinoblastoma in ten years in Benin. The tumor may be unilateral (75%) or bilateral (25%) and presented with a hereditary or sporadic pattern. The trilateral retinoblastoma syndrome is well recognized that retinoblastoma is unilateral or bilateral linear germinated associated with an intracranial neuroblastic tumor, usually discovered before 5 years of age and affects 3% to 10% of children diagnosed with retinoblastoma. Signs of retinoblastoma vary in each patient, being the most common presenting the leukocoria. Another sign Strabismus is common, especially when their involvement of the macular area [7].

In Nigeria the clinical and histological features analyzed using the patient's case folder and surgical pathology records. There were 20 patients, 9 males and 11 females, the age range from 5½ months to 6 years with 23 eyeball tumours histologically confirmed retinoblastoma during the study period. Proptosis with chemosis was the most common clinical presentation (84.6%). Bilaterality was 15% in this study. Enucleation and exenteration combined with chemotherapy were offered to 15 (75%) and 5 (25%) patients respectively. A poorly differentiated type with extensive areas of tumour necrosis was the commonest histological pattern. Thirteen (65%) of the patients died before completing the course of chemotherapy [8].

Local epidemiology

In Maputo Central Hospital were diagnosed 61 cases of cancer among children 0-14 years old. Most diagnoses was based on the histology of biopsy samples and surgical specimens (67%) and cytology /aspiration cytology fine needle (31%), while less than 2% were based on clinic autopsies. From 2009-2010, there was a two to threefold increase in the proportion of Kaposi's sarcoma cases and nephroblastomas [9]. Also during 2009-2010, 34 types of cancer were recorded among children: sarcomas, lymphomas, retinoblastomas, nephroblastomas and represented 29.4%, 23.5%, 8.8% and 8.8% of all diagnoses respectively; epithelial neoplasm's, malignant melanomas, and lymphomas were more frequent around 10 years old, while retinoblastoma, rhabdomyosarcoma, neuroblastoma and nephroblastoma affected more often children [10].

Objectives

- Understand the epidemiological profile of Retinoblastoma in patients treated at Nampula Central Hospital between years 2011-2012.
- Identify the number of children affected with this disease
- Identify what is the most affected age group and gender
- List the types of treatments used
- Identify what is the most frequent time of diagnosis.

Materials and Methods

It is a retrospective, cross-sectional and observational study. There search was conducted during 2011 to 2012 in Nampula Central Hospital. The sample was 50 children of both gender diagnosed with Retinoblastoma lodged in the same facility. The information was get it by clinic history of the patients, and for the statistical analysis used the Epi info and Microsoft excel for the graphics.

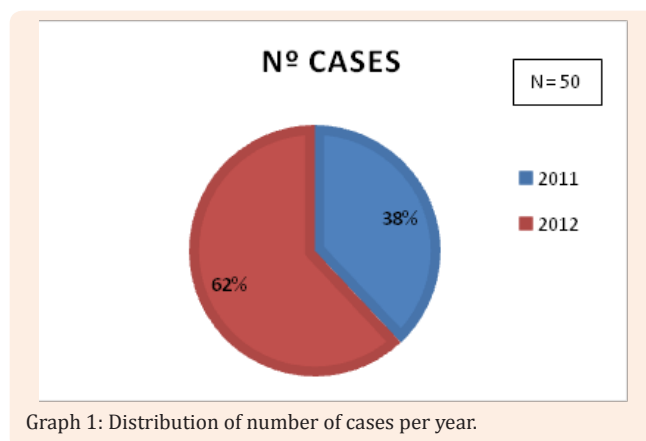
Construction of the sample

Under went about 50 patients in the study. The confirmations of the cases of retinoblastoma were made by computerized axial tomography and by biopsy. The study was covered for children from 0 to 7 of age admitted to the surgery block 3. Of hospitalized patients will use the exclusion criteria inpatients without Leukocoria (white pupil). The study was conducted based on the type of case and control study (retrospective).

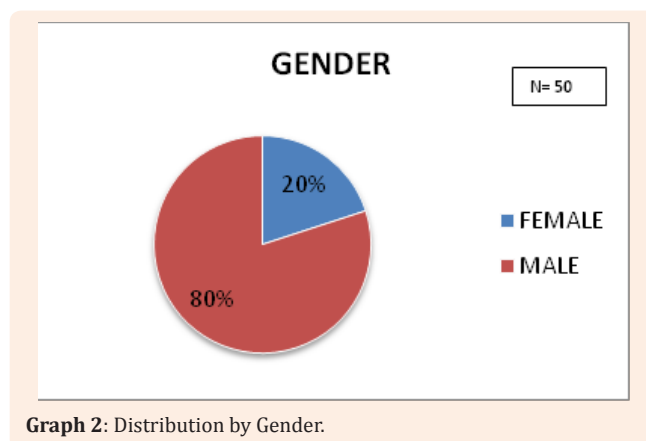
Results

Worldwide: 1/20.000births; In Nampula Province there are approximately 4,000,000 habitants according to the 2007 census. In Nampula Central Hospital were diagnosed 50 cases from January 2011 to May 2012. According to the chart above indicates that in the 2012 period was presented the most cases of retinoblastoma. From the above graph indicates that the males have 80% and the remaining 20% were female.

According to the chart above, 24% of patients had 4 years of age, 18% had 5 years, 16% were 3 years, 12% were 2 years, 6 years were 10%, 8% had 1 year, 8% had other 7 years and the remaining 4% were 8 years. The disease attacked mostly of children 3-4 years old. According to the chart above, regarding the treatment of the 50 patients submitted to the study 34% were inoperable cases, enucleation 22%, 17% underwent chemotherapy, another 17% abandoned treatment because of the socioeconomic conditions and the remaining 10% died because they did not with stand the treatment (Graph 1-4).



Graph 1: Distribution of number of cases per year.

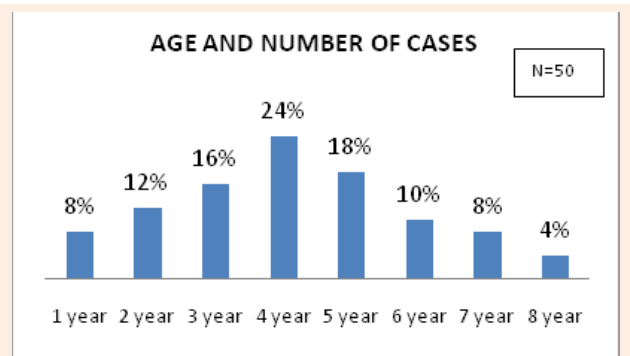


Graph 2: Distribution by Gender.

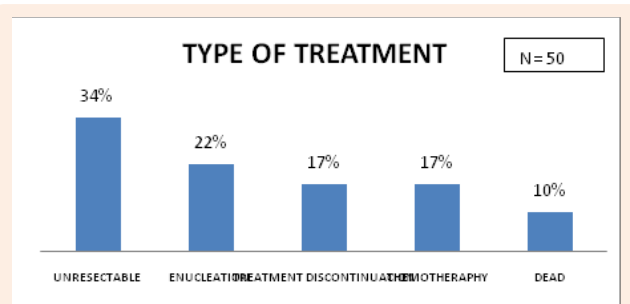
Discussion

This paper considers only patients who attend one of the two major eye centers in Nampula reference therefore only partial data about the number of cases. It should be noted that Mozambique as a developing country there are many factors (low educational level of the mother, no access to primary care) that

explain not only a late consultation of these patients, but also lack of consultation. Probably there is also a lot that even attends a Primary spotlight. The intraocular retinoblastoma tumor and one that presents more frequently in preschool, finding the same distribution in the study with 78% of cases diagnosed before them for the 6 years old. We found predilection for sex with a difference of 80% male and 20% female.



Graph 3: Distribution of patients according to age and number of cases.



Graph 4: Treatments made in HCN.

Studies done in several countries show that the treatment carried out is chemotherapy, since this study cases are in operable others suffer enucleation. As noted several children who have this disease come from various districts of the north, that is, seek medical treatment too late. The first measure to think that parents are seeing the child in this situation is to take the child to a traditional healer who is the first line of health care for the population of poorer localities. As the traditional doctor does not know it, he gives several types of treatment for the child; therefore, the child has just finally developing the disease. With this duty would create a program to promote the disease to traditional healers and for families but the communities affected, so people would be aware that the disease can come to kill if not treated early.

Conclusion

We can find that the number of cases increased more in 2012 with respect to the 2011. The retinoblastoma presented more in males and the age with more cases was 4 years old. The big problem is that the majority of children come to the hospital in advance stage of the disease and the professionals can no longer do anything for them. Although advances in technology and the use of new treatments for the management of retinoblastoma, enucleation remains a frequent indication. This is due to the delay on delivery to the eye doctor and therefore in their diagnosis and secondary to this, the presentation in advanced stages. The implementation of national or institutional providing for the education and health medical surveillance, prevention and development of more and better research, become a necessity to make the diagnosis as early as possible and with this initiate early treatment and, as, effectively, which becomes vital key to increasing survival and the opportunity to retain useful vision.

References

1. Donaldson S (1997) Retinoblastoma. In: Pizzo PA, Poplack DG (Eds.), Principles and practice of pediatric oncology. (3rd edn), Philadelphia: Lippcott-Haven, USA.
2. Parkin DM, Stiller CA, Draper GJ, Bieber CA (1988) The international incidence of childhood cancer. *Int J Cancer* 42(4): 511-520.
3. Sasco AJ, Jaquet A, Boidin E, Ekouevi DK, Thouillot F, et al. (2010) The challenge of AIDS-related malignancies in sub-Saharan Africa. *PLoS One* 5(1): e8621.
4. Silva, da Luisa Ferreira (2002) Promoção da Saude. Universidade Aberta Lisboa.
5. Thomas W Pendergrass, Scott Davis (1980) Incidence of Retinoblastoma in the United States. *Arch Ophthalmol* 98(7): 1204-1210.
6. Howard SC, Metzger ML, Wilimas JA, Quintana Y, Pui C, et al. (2008) Childhood cancer epidemiology in low-income countries. *Cancer* 112(3): 461-472.
7. Kingham TP, Alatisse OI, Vanderpuye V, Casper C, Abantanga FA, et al. (2013) Treatment of cancer in sub-Saharan Africa. *Lancet Oncol* 14(4): e158-e167.
8. Owuoye JF, Afolayan EA, Ademola-Popoola DS (2006) Retinoblastoma-a clinico-pathological study in Ilorin, Nigeria. *Afr J Health Sci* 13(1): 117-123.
9. Vaz P (2010) Paediatric HIV infection in Maputo, Mozambique: Horizontal transmission, treatment outcomes and drug resistance. *Institution enförmikrobiologi, tumör-ochcellbiologi/Department of Microbiology, Tumor and Cell Biology.*
10. Carreira H, Lorenzoni C, Carrilho C, Ferro J, Sultane T, et al. (2014) Spectrum of pediatric cancers in Mozambique: An analysis of hospital and population-based data. *Pediatr Hematol Oncol* 31(6): 498-508.