

**ORIGINAL RESEARCH ARTICLE****PREVALENCE OF PTERYGIUM IN A TERTIARY HOSPITAL IN NORTH-WESTERN NIGERIA**KF Monsudi <sup>1\*</sup>, IR Azonobi <sup>2</sup>, FO Olatunji <sup>3</sup>, ES Saka <sup>1</sup><sup>1</sup> Department of Ophthalmology, Federal Medical Centre, Birnin Kebbi, Nigeria<sup>2</sup> Department of ophthalmology, Niger Delta University Teaching Hospital, Okolobiri, Nigeria<sup>3</sup> Department of ophthalmology, University of Ilorin Teaching Hospital, Ilorin, Nigeria*\*Correspondence to: Dr. Monsudi Kehinde Fasasi, Department of Ophthalmology, Federal Medical Centre, PMB 1126, Birnin Kebbi, Nigeria.**Email: kfmshood@yahoo.com***ABSTRACT**

Pterygium is a wing shaped conjunctival growth that encroaches onto the cornea. It was initially believed to be a conjunctival degeneration arising from pincuecula. However, it is now believed to be an active invasive inflammatory process leading to fibrovascular proliferation. The ocular symptoms of pterygium includes: tearing, redness, foreign body sensation and blurring of vision. Treatment option includes use of steroid and non-steroidal anti-inflammatory drug and various surgical options. A retrospective study was conducted from 1st January 2014- 31st December 2014. Folders of patients seen over this period were retrieved and reviewed. The following information were extracted; socio-demographics (age, gender, occupation, tribe), complaints, visual acuity at presentation, grade of pterygium, treatment offered, history of pterygium surgery, laterality and use of antimetabolites during surgery. The data was recorded and analysed using SPSS version 18. Out of 2760 patients, 98 patients presented with pterygium with a prevalence of 3.6%. Among these, 60.2% were males and 39.8% were females with a range of 22years-73 years (mean 40.28 ± 11.78years). Majority of the patients (31.6%) were between 30years to 39years. Most of the patients were house wives (31.6%) and Hausa (79.6%) by tribe. Most of them had bi-lateral pterygium (66.5%). Majority of the pterygium (46.9%) were of grade 1 followed by 39.8% grade 2. Only 9.2% had surgical procedure and intraoperative application of 5 Fulourouracil (5FU). Three out of 9 cases operated had recurrent pterygium. The prevalence of pterygium is low in this population, majority of cases affecting young and middle age population.

**Key words:** *Antimetabolites, Nigeria, Prevalence, Pterygium, Ultraviolet sunlight.***DOI:** <http://dx.doi.org/10.3126/jcmc.v5i3.16525>**INTRODUCTION**

Pterygium is a triangular shape growth of conjunctival tissue that encroaches onto the cornea. The initial believe that pterygium was a conjunctival degeneration arising from pinquecula was disapproved by various studies.<sup>1,2,3</sup> However, it is now believed to be an inflammatory process leading to fibrovascular proliferation.<sup>4,5</sup> The formation of pterygium has been linked to minute conjunctival and corneal trauma caused by exposure to ultraviolet radiation and dust particle.<sup>6,7,8</sup> Worldwide, the prevalence of pterygium varies with age, occupation and geographical location.<sup>9,10</sup> The prevalence of pterygium increases as one get closer to the equator.<sup>11</sup> The pterygium belt was mapped by Cameran to be between 37<sup>o</sup>north and south of equator.<sup>11</sup>

The ocular symptoms of pterygium include tearing, redness, foreign body sensation, blurring of vision and visual impairment in advanced stages (grade III and IV). The risk factors for pterygium includes ultraviolet radiation exposure, dry climatic conditions and genetics.<sup>1,6,7,9</sup>

Indication for the treatment of pterygium includes; symptomatic pterygium, reduction in vision especially in advanced pterygium and cosmetic/unacceptable appearance of the patient. There are various treatment options for pterygium depending on a host of factors<sup>12,13,14</sup>. Following surgery, pterygium has a high risk of recurrence but various options have been advocated to prevent it<sup>15-19</sup>. This study aims to determine the pattern and prevalence of pterygium in a tertiary eye hospital in north-western Nigeria.

## MATERIALS AND METHODS

A one year retrospective study was conducted from 1<sup>st</sup> January 2014-31<sup>st</sup> December 2014. It involved all consecutive patients that presented to the eye clinic directly or through the Accident and Emergency unit of the Federal Medical Centre, Birnin Kebbi. Folders of patients with pterygium were retrieved through the hospital medical record unit and the following information were extracted; socio-demographics (age, gender, occupation and tribe), presentation, laterality, visual acuity (VA) at presentation, treatment offered, history of recurrence, past history of surgery and use of antimetabolites. The folders with

incomplete information were not used. In this study, pterygium is staged as grade 1 when it encroaches on the limbus, as grade 2 when pterygium advances onto the cornea and half the distance between the limbus and pupillary margin, while it is staged as grade 3 when pterygium reach pupillary margin and grade 4 is when it crosses the visual axis to the other side of the cornea.

All the patients were examined by an ophthalmologist using a pen touch and slit lamp biomicroscopy. The VA was also assessed using a LogMAR or an illiterate E chart as necessary by an ophthalmic nurse.

The data was double entered and analyzed using SPSS version 18 statistical software (SPSS Inc., Chicago, IL, USA). Simple descriptive variables were analyzed.

The ethical clearance for the study was obtained from the Ethics and Research Committee of Federal Medical Centre, Birnin Kebbi.

## RESULTS

Of 2760 patients seen at our eye clinic during the study period, 3.6% of them presented on account of pterygium. There were 60.2% males and 39.8% females (M:F=1.5:1). Their ages ranged from 22 years to 73 years with mean of  $40.28 \pm 11.78$  years. Majority of the patients 31.6% were within the age group of 30 to 39years. (Table 1)

**Table 1: Age and Sex Distribution of patients**

Age (Years)	Sex (n %)		Total (n %)
	Male	Female	
20 – 29	0(16.9)	9(23.1)	19(19.4)
30 - 39	20(33.9)	11(28.2)	31(31.6)
40 - 49	15(25.4)	7(17.9)	22(22.4)
50 – 59	13(22.1)	7(17.9)	20(20.4)
60 – 69	1(1.7)	2(5.2)	3(3.1)
70 – 79	0	3(7.7)	3(3.1)
Total	59(100)	39(100)	98(100)

Most of the patients were house wives 31.6% followed by civil servants 26.5%. (Table 2).

**Table 2: Occupation of Participants**

Occupation	Number	Percent (%)
Civil servants	26	26.5
Farmer	16	16.3
House wife	31	31.6
Stunned	10	10.2
Artisan	1	1.0
Business	14	14.3
Total	98	100.0

Most of the patients 79.6% were Hausa. (Table 3)

**Table 3: Racial Distribution of Pterygium**

Tribe	Number	Percent
Hausa	78	79.6
Fulani	14	14.3
Ibo	5	5.1
Yoruba	1	1.0
Total	98	100.0

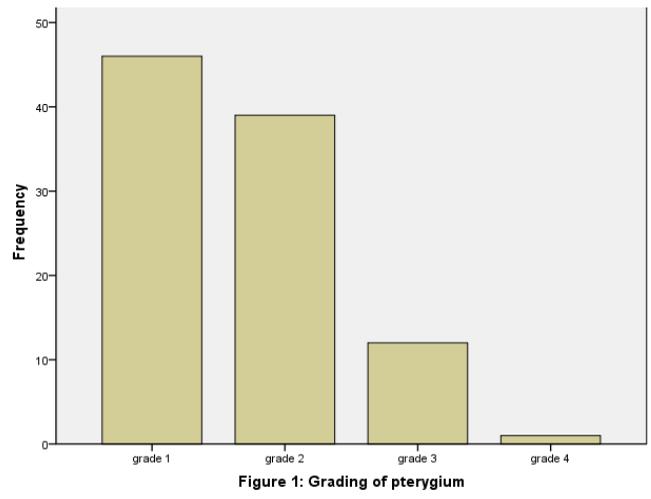
Unilateral pterygium was found in 33.7% cases and bilateral in 66.3% cases. Isolated nasal and temporal pterygia were found in 32.7% cases and 1% case respectively. Combined nasal and temporal pterygia were seen in 32 of the cases.

Majority of the pterygium (46.9%) were grade 1 followed by grade 2 in 39.8% (Figure 1 grading of pterygium). Most of the patients 46.9% presented

with visual acuity better or equal to 6/18 and 39.8% patients had VA <6/18 to 6/60 (Table 4).

**Table 4: Presenting Visual acuity of the patients**

Presented VA	Frequency	Percent
6/6-6/18	46	46.9
<6/18-6/60	39	39.8
<6/60-3/60	12	12.2
<3/60-PL	1	1.0
Total	98	100.0



**DISCUSSION**

In this study, the prevalence of pterygium was found to be 3.6%. This is little more than the findings of Fotouhi et al<sup>20</sup> in Tehran with a prevalence of 1.3% and at variance with a higher prevalence recorded by Panchapakesan et al<sup>21</sup> in Australia (7.3%) and those of Zhong<sup>22</sup> et al in China (39.0%). The prevalence of pterygium in males (2.1%) is also found to be higher than those for females in this study (1.5%). This is consistent with the findings of Fotouhi et al,<sup>20</sup> and Panchapakesan and co-workers<sup>21</sup> and at variance with those of Zhong<sup>22</sup> et al. where a higher prevalence was found in females (27.3% Vs 11.7%). The prevalence of pterygium varies from one place to the other due

to a complex interplay of environmental and other risk factors. This may explain the variation of our findings from those of previous authors.

The peak age prevalence of pterygium in this study was found in the 30 years–39 years age range with increasing prevalence up to the 50years–59 years age range. Afterwards the prevalence was found to decrease. In a systematic review and met-analysis of 20 different studies on pterygium by Lei<sup>23</sup> et al, the prevalence of pterygium was found to increase steadily with age from 40 years upwards. This is also consistent with the findings of Marmamula et al in India.<sup>24</sup> The reason for this observation is not known but may not be unrelated to the cumulative effect of exposure to environmental and other risk factors attributable to pterygium with advancing years.

Of the four different tribes that participated in the study, the prevalence of pterygium was higher among the Hausa tribe (79.6%). Although Birnin Kebbi is a predominantly Hausa population, the higher prevalence of pterygium among the Hausa tribes compared to other tribes may be due to a complex interplay of hereditary and environmental factors.<sup>25,26</sup> This is similar to the findings of Anget al.<sup>27</sup> where the prevalence of pterygium was found to be higher among the Malays race compared to Chinese and Indians. The cases of pterygium found in this study were predominantly nasal in laterality (99%). This is consistent with the findings of Krishnaram<sup>28</sup> where all

the cases were nasal pterygium. The predominance of pterygium cases on the nasal conjunctiva is thought to be due to reflection of ultraviolet light from the nose onto the nasal conjunctiva.<sup>29</sup> This may be responsible for the predominance of nasal pterygium in our study.

### **Limitation of the study**

Being not a community based study, the findings of the study may not be exactly representative of the study population. However, in the absence of a community based study, findings of this research may be useful for the purpose of planning eye care services in the community.

### **CONCLUSION**

The prevalence of pterygium is low in our study population with a peak age incidence at 30 – 39 years of age, commoner among the Hausa tribes and predominantly nasal in laterality.

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