

Tonometric profile of patients at Kara University Teaching Hospital in Togo

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ABSTRACT

Aim: Our study aimed to describe the tonometric profile of patients consulting in the Ophthalmology department of University Teaching Hospital of Kara (UTH Kara).

Study method: This is a descriptive cross-sectional retrospective study on the files of patients who consulted in the ophthalmology department of the CHU Kara and who performed a tonometric examination over the period from January 1, 2019 to June 30, 2021 i.e. a period of 02 and a half years.

Results: During this 30-month study period, 225 patients consulted in the ophthalmology department of University Teaching Hospital of Kara, which corresponds to a six-monthly frequency of 20% (45 patients). The mean age of our patients was 29.78 ± 13.39 years with extremes of 5 and 69 years. The 11 to 21 age group was in the majority. The female sex was predominant (65.78%) with an M / F ratio of 0.52. Pupils / students (48.90%) and civil servants (31.20%) were the majority of the consultants. Eye pain (23.6%), blurring of vision (21.3%), Headache (17.8%) and reduced visual acuity (13.3%) were the main reasons for consultation. The mean intraocular pressure of our patients was 15.46 mm Hg. It was $15.52 \text{ mm Hg} \pm 4.26$ in the right eye (OD) and $15.41 \text{ mm Hg} \pm 4.70$ in the left eye (OG). In 4.4% of cases, ocular hypertonia between 22 and 29 mmHg was noted.

Conclusion: The prevention of the occurrence of glaucoma in isolated hypertonia and better management of known glaucomatous patients seem to justify rigorous tonometric monitoring at all ages.

Keywords

Tonometry, hospital environment, ophthalmology, CHU Kara.

Introduction

Intraocular pressure is the pressure existing inside the eyeball [1]. Its clinical measurement is tonometry. It is a major risk factor for ophthalmic pathologies, including glaucoma [2]. Ocular hypertension is a widespread condition in developed countries. Its consequences can go as far as complete blindness. This is

why it is carefully monitored, especially in subjects at risk for glaucoma [3]. Glaucoma is considered to be the second leading factor in blindness after cataracts. It affects approximately 60 million people worldwide and 6 million of them are condemned to blindness [4].

In France, this eye disease affects nearly 1.2 million people [5]. The prevalence of glaucoma increases from the age of 40. It is multiplied by 10 above 75 years. Glaucoma is four times more

common in black populations. The risk is twofold if one of the parents is affected [5].

According to a study carried out in 2003 in Cotonou, Benin by Tchabi et al. aimed at describing the main characteristics of intraocular pressure in Beninese, the frequency of ocular hypertension and primary open-angle glaucoma; it appears that the IOP peak was low and that glaucoma appeared prematurely in the Beninese population. Regardless of gender, the distribution of ocular tone followed approximately a "bell" curve, peaking between 11-13 mm Hg. The frequency of ocular hypertonias was 3.8% with a steady increase with age. Of the ocular hypertonia cases, 41.6% were isolated hypertonia and 58.4% were established primary open-angle glaucomas [6]. In Togo in a study carried out in southern Togo by Balo et al, the prevalence of bilateral blindness is estimated at 2.47%, that of unilateral blindness at 2.65%. Glaucoma was the second blinding eye condition encountered after cataracts [7].

In Togo, few studies have been carried out to determine the tonometric profile of patients consulting in ophthalmology in general. A survey carried out by Balo et al. in 2005 in the ophthalmology service of the Sylvanus Olympio University Teaching Hospital of Lomé which aimed to describe the characteristics of intraocular pressure (IOP) in a Togolese population; the mean intraocular pressure was 17.05 ± 5.93 mm Hg [8]. Thus, carrying out this study could bring out results that could beneficially improve the profile of ophthalmology patients, especially those at risk of developing glaucoma. It therefore seemed relevant to us to initiate the present study, the aim of which is to describe the distribution of patients according to intraocular pressures.

Patients and Methods

This was a descriptive cross-sectional retrospective study on the files of patients who consulted in the ophthalmology department of the University Teaching Hospital of Kara and who performed a tonometry over the period from January 1, 2019 to June 30, 2021, i.e. a period of 02 and a half years old. We included in our study by random sampling, the files of patients who had consulted in the ophthalmology department of the CHU Kara over the period from January 1, 2019 to June 30, 2021. In the end, 225 files of patients who had performed tonometry, were been selected.

After the authorization obtained from the Director University Teaching Hospital of Kara, the head of the ophthalmology department and the supervisor, we obtained access to the files of patients who consulted in the ophthalmology department of the University Teaching Hospital Kara over the period of January 1, 2019 until June 30, 2021.

We therefore randomly selected the patient charts where intraocular pressure was measured. We have collected the following information, socio-demographic data, namely age, sex, profession, nationality; antecedents; the reason for consultation; functional signs; visual acuity and average eye pressure

We analyzed and processed the data collected by Epi Info software, Microsoft Word and Excel 2013, SPSS (Statistical Package for the Social Sciences).

Results

Distribution of patients by age and sex

During this 30-month study period, tonometric examination was performed on 225 patients in the ophthalmology department of Kara University Hospital Center, corresponding to a six-monthly frequency of 20% (45 patients).

The mean age of our patients was 29.78 ± 13.39 years with extremes of 5 and 69 years. The average age was different depending on the sex; it is 25.04 ± 12.19 years with extremes of 5 and 69 years for the female sex and 34.52 ± 13.99 years with extremes of 8 and 69 years for the male sex ($p = 0.0511$) The distribution of patients by age group and sex is shown in Table 1.

Profession

Pupils, students and civil servants were represented by 110 patients and 70 patients respectively, ie 48.9% and 31.2%. Table II shows the distribution of patients by profession.

Reason for Consultation

Eye pain (23.6%), visual blurring (21.3%) and Headache (17.8%) were the main reasons for consultation. Table III shows the distribution of patients according to the reason for consultation.

Visual acuity

Two hundred and twenty-five (225) patients were studied in our series and visual acuity was $<5/10$ in 15.1% of cases and between $20/40$ and $20/25$ in 51.1% of cases. Thus 149 patients, or 66.2%, then presented with a decrease in visual acuity.

Papillary excavation

Seventeen (17) patients or 7.5% presented papillary excavations greater than 0.3.

Intra ocular pressure

The mean intraocular pressure of our patients was 15.52 mm Hg ± 4.26 in the right eye (RE) and 15.41 mm Hg ± 4.70 in the left eye (LE). It is 15.46 mm Hg for both eyes. 51.8% of patients had an intraocular pressure between 16 and 21mm Hg.

Table 3 shows the distribution of the eyes as a function of the intraocular pressure.

Table 1: Distribution of patients by age and sex.

Age groups	Feminine	Male	Total Percentage	
0- 10	5	1	6	2.7
11- 20	67	11	78	34.7
21 -30	25	13	38	16.9
31 - 40	22	18	40	17.8
41 – 50	21	21	42	18.6
51 – 60	7	9	16	7.1
>60	1	4	5	2.2
Total	148	77	225	100

Table 2: Distribution of patients according to the reason for consultation.

IOP	RE n	%	LE n	%	Total n	%
0-9 mm Hg	3	1.4	1	0.4	4	0.9
10-15 mm Hg	97	43.1	96	42.6	193	42.9
16-21 mm Hg	115	51.1	118	52.5	233	51.8
22-29 mm Hg	10	4.4	10	4.4	20	4.4
Total	225	100	225	100	450	100.0

Table 3: Distribution of the eyes according to intraocular pressure.

Size	Frequency (%)
Decreased Vision	30 13.3
Headache	40 17.8
Ocular pain	53 23.6
Blurred vision	48 21.3
Tearing	10 4.4
Tingling	5 2.2
Photophobia	8 3.7
Itching	15 6.7
Ocular redness	12 5.3
Others	4 1.7
Total	225 100.0

Discussion

Method

Our work consisted of a descriptive retrospective study on the files of patients who consulted in the ophthalmology department of the CHU Kara and who performed the tonometric examination over the period from January 1, 2019 to June 30, 2021, i.e. a period of 02 years. and a half and aimed to assess the tonometric profile of patients over this period.

Frequency

During the period of our study, 225 patients received in ophthalmology from University Teaching Hospital of Kara had carried out the tonometry, ie a six-monthly frequency of 45 patients. This relatively low frequency in our series is explained by the absence of consultation, the poverty of the population, ignorance, the scarcity of ophthalmologists, the absence of an appropriate technical platform and the practice of traditional medicine by the inhabitants. of this region. All these different factors can explain this drop in the frequency of consultations in this environment.

Distribution of patients by age

The Togolese population is young like all populations in developing countries. The average age of our series of 29.78 years reflects this demographic evidence. The age group of 11 to 21 years was the majority with 78 patients or 34.7% of patients. On the other hand, this mean age is estimated at 41 years in the series of Balo et al. in Togo [8]; at 52.4 years in the series of Diomandé et al. in Bouaké [9] and at 53.3 years in the series of Ellong et al. in Cameroon [10]. In Benin, the 41 to 50 age group was the most represented (30.1%) in the series by Tchabi et al. [6]. This decrease could be explained by the fact that our study concerned all age groups without clinical particularities whereas in the series of Diomandé et al. the study only concerned patients with ocular hypertension and in the series of Tchabi et al. al the study involved patients over 20 years of age.

Distribution of patients by sex

The predominance of women was clear. We counted 148 female (65.78%) and 77 male (34.2%) patients, i.e. an M / F sex ratio of 0.52. This female predominance was also revealed by a study carried out in France by Santiago et al. which included 56.2% of women and 43.8% of men, ie a sex ratio of 0.78 [11]. On the other hand, other authors have revealed a predominance of men: at Bouaké University Teaching Hospital in Ivory Coast, Diomandé et al. in their study found 55.2% of male patients against 44.8% of female [9]. In a study carried out in Benin by Tchabi-Hounou et al, the male sex predominated 57% against 43% for the female sex, with a sex ratio of 1.3 [2].

The predominance of female subjects in our study could be explained by the greater attendance of women in consultations compared to men. In fact, in our developing countries, women are mainly considered as those who have to take care of household chores and the education of children, therefore regaining sight is essential for women in order to be able to carry out their adequate activity guaranteeing a healthy life. socio-family stability. Our result could also be explained by the reluctance of men to see a doctor for mild symptoms in our study setting where the majority of consultants are literate (pupils / students and civil servants).

Distribution by occupation

Pupils or students and civil servants were the most represented 48.9% and 31.2% respectively. This high percentage is explained by the high attendance of health centers by these educated social classes and who know the usefulness of consulting a specialist for adequate care. Also, this high rate could be explained by the fact that the majority of these social strata have health insurance, in particular the National Institute of Health Insurance. The low percentage of traders and farmers is explained by the low attendance of health centers by these low-income and poorly educated social strata. Indeed, Togo is part of the last group of low-income countries according to the classification of the World Bank [12]. This is indeed a population that has retained for generations an activity based mainly on cultivating the land and domestic household activities [13].

Reason for consultation

Eye pain (23.6%), blurring of vision (21.3%), headache (17.8%) and reduced visual acuity (13.3%) were the main reasons for consultation. Iyaba et al. in Congo found inflammation of the ocular region as the main reasons for consultation 30%; refractive errors 31%; eye pain and discomfort 22% [14]. In Traoré's series in Mali, the main reason for consultation was a 40% decrease in visual acuity [15]. In the series by Agrinier et al. at the Nancy University Hospital, the main reasons for consultation were red eye (32.6%), eye pain (30.0%), trauma (26.1%), and visual disturbance (23.3%) [16]. These are frequent reasons for consultation in ophthalmology.

Visual acuity

Our study showed that 66.2% of patients had a decrease in visual acuity. Visual impairment is the essential functional sign generally motivating an ophthalmology consultation. Indeed, the

delay in consultation, the poverty of the population, ignorance, fear of surgery, the scarcity of ophthalmologists, the absence of an appropriate technical platform and the practice of traditional medicine are various factors that can explain this delay. consultation at this stage of reduced visual acuity leading to blindness.

Papillary excavation

In our study, 7.5% of patients presented papillary excavations greater than 0.3. Our results are lower than those reported by Ayéna et al. in a study in northern Togo where papillary excavations greater than 0.3 represented more than 12% [17]; by Balo et al. in a rural population of southern Togo where excavations greater than 0.3 represented more than 29% [18] and those by Ayéna et al. carried out in Bassar where 23.1% of young subjects had a large papillary excavation [19]. This could be explained by the fact that the study of Balo concerned a sample aged 40 years and more therefore at risk of developing an excavation much more quickly and that of Ayéna, a sample aged 20 to 40 years while our study concerned all age groups.

Intraocular pressure

The mean intraocular pressure of our patients was 15.52 mm Hg +/- 4.26 in the right eye (OD) and 15.41 mm Hg +/- 4.70 in the left eye (OG). It is 15.46 mm Hg for both eyes. 51.8% of patients had an intraocular pressure between 16 and 21 mm Hg. Balo et al. in Togo, in a study carried out in 2005 in the Ophthalmology department of the Sylvanus Olympio University Teaching Hospital, which found an average intraocular pressure of 17.05 ± 5.93 mm Hg [8]. Our result is high to that reported by Tchabi et al. in a Beninese population which finds a low value between 11 to 13 mm Hg from the mean peak of eye tone [6]. This difference can be explained by the method of recruiting our patients.

Conclusion

Ocular hypertension is a very common condition around the world. Its consequences can go as far as complete blindness. This is why it is the subject of careful monitoring, by measuring tonometry, especially in at-risk subjects (glaucomatous). Our study was descriptive cross-sectional retrospective on a random sampling of patients who consulted in the Ophthalmology department University Teaching Hospital of Kara over the period from January 1, 2019 to June 30, 2021 and whose tonometry was carried out, ie 225. The difficulty Major was the incompleteness of certain data in the files. The mean age of our study was 29.78 years and the female sex was predominant (65.78%) with an M / F ratio of 0.52. Pupils / students (48.90%) and civil servants (31.20%) were the majority of the consultants. Eye pain (23.6%), blurring of vision (21.3%), Headache (17.8%) and reduced visual acuity (13.3%) were the main reasons for consultation. 66.2% of patients then presented with reduced visual acuity. The mean intraocular pressure of our patients was 15.46 mm Hg. It was 15.52 mm Hg in the right eye (OD) and 15.41 mm Hg in the left eye (OG) and 4, 4% of patients presented ocular hypertension.

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