

Research Article

Epidemio-clinical Aspects of Presbyopia at the University Hospital of Bouake

Ouattara Y¹, Bilé PEFK^{1*}, Diabaté Z¹, Godé LE¹, Babayeju ROI¹, Koné M², Goulé M¹, Diomandé GF¹, Diomandé IA¹

¹Ophthalmology Department, University Hospital Centre (CHU) Bouaké, 01 BP 1174 Bouaké 01, Côte d'Ivoire

²Investigator, Stomatology Department, University Hospital Center (CHU) Bouaké, 01 BP 1174 Bouaké 01, Côte d'Ivoire

*Correspondence author: Philippe EFK BILE, Ophthalmology Department, University Hospital Centre (CHU) Bouaké, 01 BP 1174 Bouaké 01, Côte d'Ivoire;
Email: Philippebile@yahoo.fr

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Abstract

Aim of this study was to contribute towards a better understanding of presbyopia in the subject, with a view to improving its management.

Materials and methods: This was a descriptive and analytical retrospective study of the medical records of patients who were received and followed up in the ophthalmology department of the CHU de Bouaké for presbyopia. It took place from January 1, 2013, to December 31, 2017, a period of 5 years.

Results: The prevalence was 09.16%. %. The mean age of patients was 51.62 years with extremes of 40 and 86 years. Females predominated (55.61%), with a sex ratio of 0.8. Craftsmen were the most represented socio-professional group (30.49%). Of the total number of patients seen, 34.98% were already wearing corrective lenses. The age of first presbyopia correction was 50.39 years, with extremes of 40 and 82 years for males. For women, it was 51.49 years, with extremes of 40 and 86 years (Table 3). For the 637 male patients, the mean addition value for near vision was 2.02 diopters, with extremes of 1.00 and 5.00 diopters. For the 798 female patients, it was 2.11 diopters, with extremes of 0.75 and 7.50 diopters (Table 4). Presbyopia was isolated in 5.64% of patients.

Keywords: Presbyopia; Prevalence; Africa

Introduction

Presbyopia is an age-related loss of accommodation of the crystalline lens. It leads to an inability of the eye to focus images of close objects and is clinically manifested by a progressive decline in near visual acuity [1]. This decline in near visual acuity manifests itself as visual blur [2].

Presbyopia generally occurs between the ages of 38 and 45 with 100% prevalence at the age of

55 [3]. It poses a public health problem. Indeed, according to UNDESA, 21% of the world's population aged 60 or over will have presbyopia by 2050 [4]. Articles published in Africa and Asia on uncorrected ametropia show that in some countries up to 94.00% of people with presbyopia have no optical correction at all [2,3,5]. However, very little data has been collected on presbyopia in the Bouaké region. Hence the interest of this study, the aim of which was to contribute to a better understanding of presbyopia in the subject, with a view to improving its management.

Materials and Methods

This was a descriptive and analytical retrospective study of the medical records of patients who were received and followed up in the ophthalmology department of the CHU de Bouaké for presbyopia. It took place from January 1, 2013, to December 31, 2017, a period of 5 years. The variables studied were sociodemographic characteristics (age, gender, profession), reason for consultation, refractive errors, nature of static ametropia for distance vision and addition value for near vision. Data analysis was performed using EPI INFO software version 7.0. Figures were produced in Excel 2016. Tables and data entry were carried

out in Word 2016. Quantitative variables were expressed as means and extreme values. Qualitative variables were expressed as proportions.

Results

During the study period, 1,435 cases of presbyopia were reported out of 1,5657 medical records of patients seen in consultation, representing a prevalence of 09.16%. The average age was 51.62 years, with extremes of 40 and 86 years (Fig. 1). Females accounted for 55.61% of patients, i.e., a sex ratio of 0.8. Craftsmen were the most represented socio-professional group (Table 1). The main reasons for consultation were reduced near visual acuity (30.49%), followed by reduced distance visual acuity (23.93%) (Table 2). Of the total number of patients seen, 34.98% were already wearing corrective lenses. Of these, 70.92% already benefited from previous correction of presbyopia. For these patients, the average age of these patients was 43.77 years, with extremes of 40 and 79 years. The age of first presbyopia correction was 50.39 years, with extremes of 40 and 82 years for males. For women, it was 51.49 years, with extremes of 40 and 86 years (Table 3). For the 637 male patients, the mean addition value for near vision was 2.02 diopters, with extremes of 1.00 and 5.00 diopters. For the 798 female patients, it was 2.11 diopters, with extremes of 0.75 and 7.50 diopters (Table 4). Presbyopia was isolated in 5.64% of patients. It was associated with ametropia, including myopia (11.15%), hyperopia (31.50%), astigmatism (51.71%), simple compound (32.47%) or mixed (19.24%).

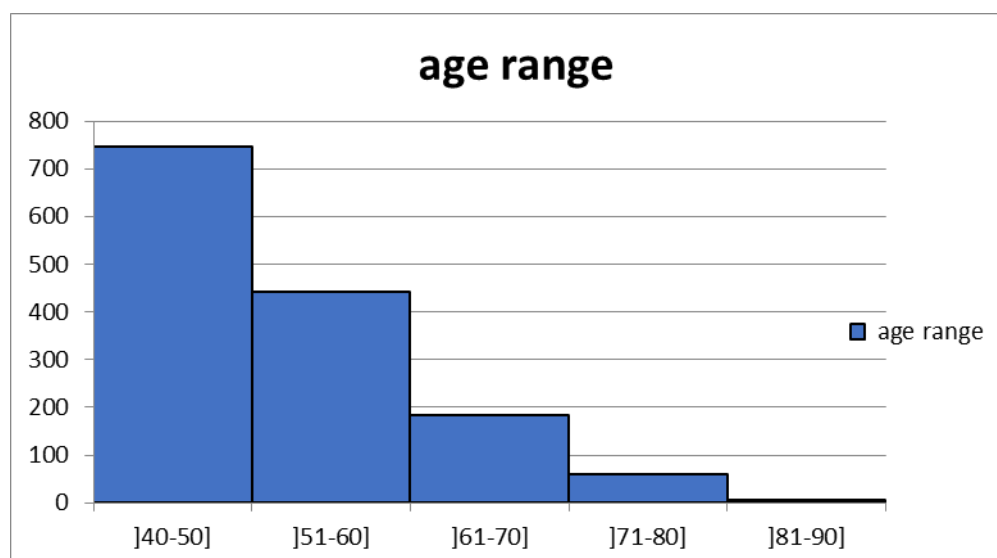


Figure 1: Patient distribution by age group.

Category Socio-Professional	Number	Percentage
Players in the agricultural sector	48	3,34
Craftsmen	301	20,97
Shopkeepers	197	13,72
Teachers	230	16,03
Students	03	0,21
Civil servants	199	13,87
Housewives	88	6,13
Retired	121	8,43
Private-sector employees	215	14,98
Unemployed	20	1,40
Unspecified	13	0,91
Total	1435	100

Table 1: Distribution of patients by socio-professional category.

Motifs de Consultation	Number	Percentage
Visual Acuity Decrease Pres	497	30,49
Visual Acuity Decrease Far	390	23,93
Visual Acuity Decrease Pres +Far	236	13,68
Oculalgia	272	16,69
Headache	354	21,72
Eye burning	25	1,53
Tingling eyes	97	5,95
Tearing	297	18,22
Photophobia	349	21,41
Diplopia	6	0,37
Ocular pruritus	319	19,57
Blurred vision	223	13,38
Sand grain sensation	66	4,05
Foreign body sensation	30	1,84
Ocular redness	132	8,10
Difficulty reading	18	1,10
Waking up with eyelids pressed together	53	3,25
Renewal of corrective lens	254	14,36
Morning secretion on waking	70	4,29
Other (Vertigo, hypertension, diabetes, sickle cell disease migraine, phosphene)	200	12,24

Table 2: Distribution of reasons for consultation according to frequency.

Age of Presbyopia Correction	Average Ages	Variances	Numbers	P
Male	50,39	94,67	637	<0,0001
Female	51,49	100,66	798	

Table 3: Comparison of ages of first presbyopia correction, by gender.

Sex	Addition Value Averages for Near Vision	Variances	Numbers	P
Male	2,02	0,56	637	<0,0001
Female	2,11	0,56	798	

Table 4: Comparison of mean addition values and variances for near vision by gender.

Discussion

Persbyopia is a universal age-related phenomenon, with a prevalence close to 100% in older subjects, as reported in our study as well as in the literature. Indeed, we found a prevalence of 09.16%. In contrast, Muhammad, et al., found a prevalence of presbyopia of 53.4% in adults aged 40 and over in their study carried out in the rural area of Gwagwalada, Nigeria [5]. A population survey of presbyopia in rural Tanzania revealed a prevalence of 61.4% [6]. The respondents were young adults. The mean age was 51.62 years, with extremes ranging from 40 to 86 years. The 40-50 age group accounted for 40.61%. Similar studies reported results like ours, such as those by Ouattara Y, et al., in their study carried out in Abidjan, Côte d'Ivoire, where the 40-59 age group was the most represented [7]. For Abdu, et al., in their study carried out in Nigeria, the age bracket between 40 and 49 was the highest [8]. In terms of socio-professional category, the most frequent in terms of proportion were craftsmen (20.97%), followed by teachers (16.03%). Artisans are the informal sector workers who make considerable demands on their near vision and would logically represent the highest frequency in our study population. This justifies the distinction between physiological and functional presbyopia proposed by Nirmalan PK [5]. Applied to our study, this distinction would allow us to define functional presbyopia as a decline in near visual acuity, sufficiently impeding professional activity to require optical correction for near vision. Reasons for consultation were dominated by reduced near visual acuity (30.49%), followed by reduced distance visual acuity (23.93%). Consultation is therefore motivated by a perceived need for correction of near vision, for the performance

of certain leisure or professional tasks such as reading. The drop in distance visual acuity mentioned by a large proportion of patients is always associated with a drop in near visual acuity. This may be explained by the fact that weak static ametropias are well tolerated if they do not interfere with professional activities. Among presbyopes, 62.02% were prescribed corrective lenses for the first time in our department and only 34.98% had received them previously. In more developed countries, the population without corrective lenses was less than 16.00%, compared with 61-70.00% in developing countries and 74-94.00% in less developed countries. Some 670 million people worldwide are blind or visually impaired simply because they do not have access to an eye test. Among former corrective lens wearers, the average age was 50.39 for men and 51.49 for women. The average age of first presbyopia correction is higher in women than in men. For some authors, presbyopia occurred earlier in women than in men [9]. The mean addition value for near vision was 2.11 δ in men and 2.02 δ in women, with $P < 0.0001$ indicating a statistically significant correlation between addition value and sex. Ouattara, et al., made the same finding in his study. According to him, since the average age of women is lower than that of men, the comparison of means shows no significant difference between the value of the addition in men and women. However, it can be estimated that for an average age of 51, the mean value of addition is 2.00 δ [7]. In our series, astigmatism (51.71%) was the most common refractive error, followed by hyperopia (31.50%) and myopia (11.15%). This was in line with studies carried out by Abdu L, et al., in Nigeria and Claudia M, et al., in Brazil, where the most common refractive error was found to be astigmatism, i.e., 51.71%, 41% and 49.4% respectively [8,10]. This confirms our findings. Indeed, since the amplitude of accommodation is greater in myopes than in hypermetropes, presbyopia would manifest itself later in myopes, according to Mc Brien, et al., after a study of the amplitude of accommodation in students aged 18 to 22 [11]. On the other hand, Schaeffel, et al., have shown that refractive disorders do not influence the dynamics of natural accommodation [12]. Abraham, et al., studied the phenomenon in subjects aged 35 to 50, whom they called "peri-presbyopic" subjects [13]. The accommodative amplitude of myopes was greater than that of emmetropes and hypermetropes, but before the age of 45. At this age and beyond, they found no significant differences between the accommodative amplitudes of these different groups; this could not be confirmed in our study. In addition, index myopias caused by incipient nuclear cataracts, which improve presbyopic near vision, occur earlier in the tropics and may therefore underestimate the prevalence of presbyopia [14]. The average age of first correction of presbyopia according to the type of associated ametropia is 52.44 for myopia, 52.66 for hyperopia, 51.49 for simple astigmatism and 52.49 for mixed astigmatism. Analysis of this table shows that the average age at which presbyopia is first corrected depends not only on the type of ametropia with which it is associated, but also on the patient's sex. These data are consistent with the fact that, on the one hand, myopes have a greater amplitude of accommodation than emmetropes before the age of 45 and on the other hand, the formation of a nuclear cataract after this age and presbyopes improve their near vision [14].

Conclusion

Presbyopia occurs around the age of fifty. Craftsmen and teachers were the most affected. Presbyopia generally manifests itself as a decline in near visual acuity and is more common in women than in men. It is most often associated with astigmatism. There is a statistically significant relationship between the value of addition and gender, as well as between the average age at which presbyopia is first corrected and the type of ametropia with which it is associated.

Conflict of Interest

The authors have no conflict of interest to declare.

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