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Research Article

Knowledge and Experience of Glaucomatous Patients Facing COVID 19 in 2021 in Conakry

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Abstract

Purpose: Describe the knowledge and experience of glaucomatous patients on COVID-19 in Conakry, Guinea.

Patients and Methods: This was a three-month cross-sectional study conducted at the Bartimaeus Ophthalmological Clinic in Conakry. Glaucoma patients undergoing medical treatment in the context of the COVID-19 pandemic were included. Recruitment was extensive, with consenting patients recruited consecutively. The Khi-deux of Person was used to compare categorical variables by gender.

Results: Of the 500 patients followed at the Bartimée clinic, 150 were glaucomatous (30%). In our study population, 94.6% heard about COVID-19 and respondents were aware of its contagious nature. However, their perceptions of the means of prevention and the ways of contamination were wrong. The telephone was the most accessible means of communication for patients (48.7%) while 44% went directly to the clinic. The cost of anti-glaucomatous drugs was considered expensive by 58.0% of respondents and affordable by 38.7% of them. The doctor-patient relationship was considered good in 70% of cases. Half of the patients felt that COVID-19 had an impact on treatment, including fear of being infected (68.8%), high cost of living (68.0%) and lockdown (68.8%). The high cost of living and the means of communication with the doctor were the factors that significantly influenced the doctor-patient relationship.

Conclusion: This study shows that glaucomatous patients had misperceptions about the means of prevention and the ways of infection of COVID-19. It is necessary to integrate information and advice sessions on COVID-19 into consultations with glaucomatous patients but also with other pathologies in clinics and ophthalmological services.

Keywords: Knowledge; Lived; Glaucoma; COVID-19; Guinea

Abbreviations

COVID 19: Coronavirus Disease 2019; POAG: Primary Open-Angle Glaucoma; SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2; UHC: University Hospital Center; CERTIG: Center for Research and Training in Infectiology of Guinea; ACE-PCCD: Africa Center of Excellence for the Prevention and Control of Communicable Diseases

Introduction

Primary open-angle glaucoma (POAG) being a chronic optic neuropathy, long asymptomatic [1] corresponding to a loss of retinal ganglion cells and characterized by morphological changes in the optic nerve head (or papilla) associated with typical impairment of the visual field [2]. It is a pathology for which age is a preponderant risk factor and which in the vast majority of cases has a slow evolution. The epidemiological profile of patients with COVID-19 shows that the elderly (60 years and over) remain a population at risk, often developing complications [3]. Moreover, these elderly patients are also the most fragile and the most affected by eye conditions because of many underlying diseases such as metabolic and cardiovascular diseases of which they are often victims. These elderly people are therefore at increased risk of serious complications related to COVID-19 if they contract this disease at the health center or during their journey [4], It was recommended to postpone the majority of non-urgent consultations, especially at the start of the pandemic [3]. This is the case of the follow-up of glaucomatous patients at advanced ages. This postponement has a negative impact on the evolution of the glaucomatous disease, the follow-up of which is a pillar of therapeutic observance [5]. In Guinea, the first case of Covid-19 was declared on March 13, 2020 [9]. Ophthalmological services must be reconfigured in the event of an epidemic or pandemic, as is the case at the moment. This includes deciding which patients should be seen in consultation and which appointments should be rescheduled. We must balance the short- and long-term eye health needs of our patients with the risk of developing complications from COVID-19 that threaten their health and well-being. vital prognosis [4]. In France, in a study conducted with the Markettiers polling institute, the laboratory specializing in ophthalmology Health reports that 32% of respondents voluntarily chose not to go to the office, for fear of being contaminated [10]. In India in 2020, according to Subathra., *et al*., the main barriers to treatment adherence related to the COVID 19 context were non-availability of drugs (54.81%), financial difficulties (30.29%) [11]. In Congo, Nanfack., *et al*. in 2020 reported that out of a total of 24 patients, 2 stopped their antiglaucoma treatment for financial reasons due to COVID 19 [5]. Thus, knowing the morbidity and mortality linked to COVID-19, especially in elderly subjects with comorbidity, that glaucoma being a pathology of the elderly subject and the impact that Covid-19 can have on the follow-up of glaucomatous patients, which is a pillar of the medical treatment of glaucoma, it seemed interesting to us to know the level of knowledge of glaucomatous patients about COVID 19 and the strategies used to reduce the impact of COVID-19 on the monitoring of antiglaucoma treatment.

Methods

This was a descriptive and analytical cross-sectional study lasting three months from March 1 to May 31, 2021. It took place in the Bartimée Ophthalmological Clinic, which is a second-degree and specialized hospital establishment. in ophthalmology. The clinic is located in the Nongo district, sector I, commune of Ratoma in Conakry, the capital of Guinea. A total of 150 glaucomatous patients seen in consultations during the study period were included in the study. Included in this study were all glaucomatous patients undergoing medical treatment during the study period. Were excluded from this study, all glaucomatous patients in whom free and informed consent was not obtained. We proceeded to an exhaustive recruitment according to the selection criteria and the inclusion was consecutive, as the patients were received. The data was collected using a semi-structured questionnaire which was protested to five non-glaucoma patients. Data collection was carried out by the principal investigator and an assistant physician. The data collected on a survey sheet focused on socio-demographic characteristics, patient knowledge of COVID-19 and patient perception of their experience of COVID-19. The Stata software, version 15 (Stata Corporation, College Texas, USA) was used for data analysis. Data were summarized as a proportion for categorical variables and the median (with its interquartile range) was used to summarize age. Person's chi-square was used to compare categorical variables by gender. The Krussal-Wallis test was used to compare the medians. A value of $p < 0.05$ was considered statistically significant.

Ethical considerations

The study protocol was approved by the scientific committee of the Faculty of Health Sciences and Technologies of Gamal Abdel Nasser University in Conakry. We ensured the confidentiality of the data and the free and informed consent of the participants was obtained before any inclusion.

Results

Of the 500 patients followed at the Bartimée clinic during the study period, 150 were glaucomatous, a frequency of 30%.

The median age in the sample was 51.0 years (34.8-57.3 years) and the majority of patients (70%) were aged 40 and over. We noted a male predominance in the sample (62%) and six out of ten patients lived in Conakry (Table 1). Civil servants/retired persons and married people were the most represented. Slightly more than half of the respondents (52.7%) had no schooling (Table 1).

Sociodemographic characteristics	Effective	Percentage
Age in years: median age 51,0 (34,8-57,3)		
< 40 years	45	30,0
≥ 40 years	105	70,0
Sex		
Be	93	62,0
Femal	57	38,0
Occupation		
Tradel/worker	43	28,7
Official/Retirement	39	26,0
Household	29	19,3
Student/pupil	20	13,3
Farmar/Breeder/Other	19	12,7
Marital status		
Married	85	56,7
Bachelor	35	23,3
Widower	19	12,7
Divorce	11	7,3
Educational level		
Unschooled	79	52,7
educated	71	47,3
Origin		
Conakry	91	60,7
Interior of the country	59	39,3

Table 1: Sociodemographic characteristics of glaucomatous patients followed during COVID-19 at the Bartimée clinic in Conakry, Guinea in 2021.

Knowledge of glaucomatous patients on COVID 19

Almost all of our study population (95%) had heard of COVID-19. However, the perception of the means of prevention and the routes of contamination of the COVID-19 virus were incorrect (Table 2). Thus, around 99% thought that we catch COVID-19 by going to the hospital and 97% believed that COVID-19 is caught by using products from Europe. There was no statistically significant difference between men and women in terms of knowledge about COVID-19, or P-value > 0.05.

Variable	Together N = 150	Men 93	Women 57	P value
Have you heard of Covid-19				
YES	143 (95,3)	88 (94,6)	55 (96,5)	0,599
NO	7 (4,7)	5 (5,4)	2 (3,5)	
Knowledge of contamination routes				
Going to the hospital				
YES	148 (98,7)	91 (97,8)	57 (100,0)	0,265
NO	2 (1,3)	2 (2,2)	0 (0,0)	
By touching a patient with COVID-19				
YES	66 (44,0)	42 (45,2)	24 (42,1)	0,714
NO	84 (56,0)	51 (54,8)	33 (57,9)	
By using products from Europe				
YES	145 (96,7)	90 (96,8)	55 (96,5)	0,925
NO	5 (3,3)	3 (3,2)	2 (3,5)	
Knowledge of means of prevention				
By staying at home				
YES	67 (44,7)	45 (48,4)	22 (38,6)	0,242
NO	83 (55,3)	48 (51,6)	35 (61,4)	
By respecting barrier gestures				

YES	144 (96,0)	91 (97,8)	53 (93,0)	0,140
NO	6 (4,0)	2 (2,2)	4 (7,0)	
By avoiding contact with products from Europe				
YES	143 (95,3)	90 (96,8)	53 (93,0)	0,285
NO	7 (4,7)	3 (3,2)	4 (7,0)	

Table 2: Knowledge of glaucomatous patients about COVID-19 at the Bartimée clinic in Conakry, Guinea in 2021.

Experience of patients vis-à-vis COVID-19

The telephone was the means of communication most used by patients to receive advice from their attending physician (approximately 49%). The majority of respondents (85%) said that COVID-19 has been a barrier to treatment adherence. The reasons given were the fear of being contaminated, confinement (69%) and the high cost of living (68%). The cost of antiglaucoma drugs was perceived as expensive (58% of patients). The doctor-patient relationship was perceived as good by 70% of respondents (Table 3).

Variable	Effective	Percentage
Has COVID been a barrier to treatment adherence?		
YES	128	85,3
NO	22	14,7
How has COVID affected treatment adherence? (N=128)		
Fear of being infected	88	68,8
Cost of living	87	68,0
Confinement	88	68,8
Means of communication with the doctor		
Phone	73	48,7
Face-to-face (Clinical)	66	44,0
Internet	11	7,3
Drug cost assessment		
Expensive	88	58,0
Affordable	62	42
Assessment of the doctor-patient relationship		
Good	105	70
Not good	45	30

Table 3: Experience of glaucomatous patients with regard to COVID-19 at the Bartimée clinic in Conakry, Guinea in 2021.

Factors influencing the doctor-patient relationship

The cost of living and the means of communication with the doctor were the only statistically significant factors associated with the doctor-patient relationship. Thus, patients who reported that the high cost of living during COVID-19 was an obstacle to treatment compliance were more likely to perceive the doctor-patient relationship as less good compared to those who estimated that the cost of life was affordable (p = 0.013).

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Variable	Doctor-patient relationship		P value
	Good	Not good	
Sex			0,152
Female	36 (63,2)	21 (36,8)	
Male	69 (74,2)	24 (25,8)	
Marital status			0,144
Bachelor	26 (74,3)	9 (25,7)	
Divorce	5 (45,4)	6 (54,5)	
Married	58 (68,2)	27 (31,7)	
Widower	16 (84,2)	3 (15,8)	
Educational level			0,803
Schooled	49 (69,0)	22 (30,4)	
Unschooled	56 (70,9)	23 (29,1)	
Origin			0,402
Conakry	66 (72,5)	25 (27,4)	
Intérior in contry	39 (66,1)	20 (33,9)	
Has COVID 19 been a barrier to treatment adherence			0,420
NO	17 (77,2)	5 (22,7)	
YES	88 (68,7)	40 (31,2)	
The fear of being infected			0,219
NO	40 (64,5)	22 (35,4)	
YES	65 (73,8)	23 (26,1)	

The cost of living			0,013
Expensive	54 (62,0)	33 (37,9)	
Affordable	51 (80,9)	12 (19,0)	
containment			0,219
NO	40 (64,5)	22 (35,5)	
YES	65 (73,8)	23 (26,1)	
Means of communication with the doctor			0,010
Phone	59 (80,8)	14 (19,2)	
Clinic	41 (62,1)	25 (37,8)	
Internet	5 (45,4)	6 (54,5)	
Drug cost assessment			0,885
Expensive	62 (70,4)	26 (29,5)	
Affordable	43 (69,3)	19 (30,6)	

Table 4

Discussion

Almost all of our study population (95%) has heard of COVID-19. However, the perception on the means of prevention and the ways of contamination of the COVID-19 virus were incorrect as the majority thought that one catches the COVID-19 by going to the hospital and believed that the COVID-19 is caught using products from Europe. The telephone was the means of communication most used by patients to receive advice from their attending physician. The majority of respondents said that COVID-19 has been a barrier to treatment adherence. The reasons given were the fear of being contaminated, confinement and the high cost of living. The cost of antiglaucoma drugs was perceived as expensive in 70.4% of patients. The doctor-patient relationship was perceived as good by the majority of respondents. This study has the advantage of being descriptive and analytical (chi calculated with error $\alpha = 0.05$) in a specific context of the pandemic due to COVID-19. It only has a limit, we were only able to interview glaucomatous patients under medical treatment. Of 500 patients seen at the clinic, 150 were glaucomatous, a frequency of 30%. More than half of our patients knew themselves to be glaucomatous and had an approximate knowledge of glaucoma. Our result is different from that of Ayena KD., *et al*. [12] who reported that 230 cases or 77.7% of their study population were unaware of their glaucoma status. This denotes the fact that most of our respondents were glaucomatous patients formerly followed and under treatment. According to the literature, one becomes infected with the SARS-CoV-2 coronavirus through an infected person who exhales small droplets and particles containing the virus, in contact with the eyes, nose or mouth, in particular during a splash and spray like a cough or sneeze or when touching eyes, nose or mouth with soiled hands [7]. In our series, almost all of our patients have heard of COVID-19, almost all think that we become infected by going to the hospital, by using products from Europe. Contrary, less than half only think that one is contaminated by touching a patient of COVID-19. According to the WHO, for the prevention of the spread of Coronavirus, it is necessary to maintain a physical distance from others, wear a mask, ventilate rooms well, avoid gatherings, wash your hands, and cough into your bent elbow or a tissue [13]. In our series, almost all glaucomatous people think that we prevent COVID-19 by staying at home, respecting barrier gestures and avoiding products from Europe. Our results could be explained by the effort made by the health authorities of the country in relation to the maximum possible communication as well as the implementation of vigorous awareness-raising actions and the repressive measures undertaken by the police. In our series, more than half of the patients believe that COVID-19 has had an impact on treatment for fear of being contaminated, the high cost of living and confinement, certainly with the consequences linked to the restrictions. The laboratory specializing in ophthalmology Santen with the Markettiers polling institute in France, report that domestic or family obligations due to Covid-19 prevented 41% of respondents from going to collect their treatment and that a third or 32% of respondents voluntarily chose not to go to the office, for fear of being contaminated [10]. During our study, half of the glaucomatous patients managed to communicate with the doctor by telephone, nearly half of the patients went to the clinic to see the doctor and 11 communicated via the Internet. According to Nanfack NC., *et al*. [5]. in Yaoundé, 21 patients, either 87.50%, experienced no difficulty in meeting their doctor for glaucoma follow-up. Regarding the cost of drugs, 58% agree that anti-glaucoma drugs are expensive and 42% consider it affordable (see Table III). Our results are different from those of Nanfack., *et al*. [5]. who reported that 22 out of 24 patients continued to follow their antiglaucoma treatment regularly. The 2

patients who stopped their treatment mentioned financial reasons. Our result could be explained by the lack of health coverage in the country but also the pandemic context. The doctor-patient relationship is judged by the quality of the information delivered when the diagnosis is announced, which must be simple, clear and specific, because a lack of information represents a major factor of anxiety for the patient. It must be renewed regularly [14]. In our series, the Doctor-Patient relationship is considered good by 105 patients, while 45 patients said it was not good. The cost of living and the means of communication with the doctor were the only statistically significant factors associated with the doctor-patient relationship. Thus, patients who reported that the high cost of living during COVID-19 was an obstacle to treatment compliance were more likely to perceive the doctor-patient relationship as less good compared to those who estimated that the cost of life was affordable (p=0.013). Patients who used the telephone as a means of communication with the doctor were more likely to perceive the doctor-patient relationship as good compared to those who used another means of communication. Our results are less satisfactory compared to that of Taktak J., *et al*. [15]. who reported that the Doctor-Patient relationship was satisfactory for all glaucomatous patients in their series, either 100% of cases. Hospital frequency of POAG varies by country and ethnicity [16,17]. We found a low hospital frequency of 30%. Our result is lower than that of Atipo-Tsiba PW [18] in 2015 at the Brazzaville University Hospital, which reported a 4.8% frequency of Glaucoma. According to the literature, the prevalence of POAG increases with age, it is less than 0.5% between 40 and 50 years old to reach about 10% after 85 years old [19]. We found an average age of 47.31 ± 15.45 years. Our results corroborate with those of Dovhoma VA., *et al*. [20] in Douala in 2015 who found an average age of 56.6 ± 13.7 years, with extremes of 18 and 80 years with the highest frequency in the 40-59 age group, i.e. 48.6%. These different results are in line with the literature by the fact that the appearance of POAG is related to age. Regarding gender compared to POAG, there does not seem to be any difference in prevalence [21]. In our series, the male gender was predominant with a Sex-ratio of 1.63. This is different from that of Nanfack NC., *et al*. [5] and that of Dovhoma VA., *et al*. [20] who respectively found a sex ratio of 0.94 and 0.71. The socio-professional stratum most concerned was that of civil servants/retired people, followed by that of housewives. Kane R., *et al*. [22] in Mali Bamako in 2017 reported that housewives were the most represented at 27%. Unschooled and educated patients were in almost equal proportions. Our result is different from that of Dovhoma VA., *et al*. [20] who reported a higher proportion of patients with higher than secondary education. In our series more than half of the patients lived in Conakry, Dovhoma VA., *et al*. [20] reported similar results 80.0% of patients lived in the city of Douala, this would be explained by the preference of the choice of the setting of our study.

Conclusion

This study shows that glaucomatous patients had erroneous perceptions about the means of prevention and the contamination routes of COVID-19. It is necessary to integrate information and advice sessions on COVID-19 in the consultations of glaucomatous patients but also of other pathologies in ophthalmological clinics and services.

Conflicts of Interest

The authors declare no conflict of interest in relation to this work.

Contribution of the authors: the authors contributed to one or more levels of the writing of the manuscript from the protocol, the data collection and the writing. All read and approved the final manuscript.

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