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SHORT REPORT

Socio-demographic factors and selected clinical characteristics of patients with retinal vein occlusions in transitional Albania

Manushaqe Rustani-Batku[1], Ali Tonuzi[2]

[1] Primary Health Care Center No. 2, Tirana, Albania;

[2] University Hospital Center "Mother Teresa", Tirana, Albania.

Corresponding author: Dr. Manushaqe Rustani-Batku, Primary Health Care Center No. 2, Tirana;
Address: Rr. "Arkitekt Kasemi", 51, Tirana, Albania;
Telephone: +355682359312; Email: manushaqebatku@yahoo.com

Abstract

Aim: The aim of our study was to assess the distribution of socio-demographic factors and the clinical profile of individuals diagnosed with retinal vein occlusion (RVO) in Albania, a former communist country in South-eastern Europe which has been undergoing a rapid transition in the past decades.
Methods: This study was carried out in 2013-2016 at the Primary Health Care Centre No. 2 in Tirana municipality, which is the capital of Albania. During this timeframe, on the whole, 44 patients were diagnosed with RVO at this primary health care centre (17 women and 27 men; overall mean age: 69.5±11.5 years). The diagnosis of RVO was based on signs and symptoms indicating a quick reduction of the sight (vision), fundoscopy, fluorescein angiography and the optical coherence tomography. Data on socio-demographic factors and clinical characteristics were also gathered for each study participant.
Results: The prevalence of glaucoma was considerably higher in men than in women (67% vs. 24%, respectively, P=0.01). Diabetic retinopathy was somehow more prevalent in women than in men (18% vs. 11%, respectively), whereas an opposite finding was noted for the presence of hypertensive retinopathy (6% vs. 11%, respectively). The prevalence of cataract was higher in female patients compared with their male counterparts (18% vs. 7%, respectively, P=0.36). Both macular oedema and papillary oedema were almost equally distributed in men and in women (22% vs. 18% and 4% vs. 6%, respectively). All female patients had comorbid conditions compared to 85% of their male counterparts (P=0.15). The prevalence of hypertension was almost identical in both sexes (52% in men vs. 53% in women), whereas the prevalence of diabetes was somehow higher in men than in women (26% vs. 18%, respectively).
Conclusion: This is one of the very few studies informing about the distribution of socio-demographic factors and selected clinical characteristics of individuals diagnosed with RVO in transitional Albania.

Keywords: Albania, clinical profile, ophthalmology, retinal vein occlusion, socio-demographic factors.

Conflicts of interest: None.

Introduction

Retinal vein occlusion (RVO) is a major reason for severe ocular impairment and blindness (1,2). The available evidence, based on many studies carried out in different countries of the world, indicates that RVO is linked to an increased risk of cardiovascular disease, especially hypertension, diabetes mellitus, and coronary artery disease (3-5). The incidence and prevalence of RVO is substantially higher among older people, notwithstanding the fact that this condition is a frequent cause of painless visual loss also in middle-aged individuals (6-8).
Data from the Global Burden of Disease (GBD) 2010 Study indicate that Albania is the only country in the South-eastern European region that has experienced an increase in the mortality rate from ischemic heart disease and cerebrovascular diseases in the past two decades (9), exhibiting an early evolutionary stage of the coronary epidemic, which was evident many decades ago in the Western countries (10). Indeed, ischemic heart disease and cerebrovascular disease were among the highest ranking causes regarding the number of years of life lost due to premature mortality in Albania in 2010 (9). Furthermore, the burden of diabetes mellitus has almost doubled in Albania in both sexes in the past two decades (10). In males, there was an increase of 96% in Disability-Adjusted Life Years (DALYs) from diabetes, whereas in females this increase was 85%. Overall, the sex-pooled proportional DALYs for diabetes in Albania in 2010 increased 50% compared with 1990 (9). Currently, there is evidence of a gradual increase in the diabetes burden which is also due to improvements in the accessibility of health care (that is adequate registration and management of all cases with diabetes) coupled with a steady increase in the ageing population (which, in turn, is associated with an increase in the prevalence of diabetes) (10).
Yet, data on the prevalence and determinants of RVO in Albania are scarce. Indeed, to date, there are no scientific papers available providing evidence about the magnitude and occurrence of RVO in the population of Albania. In this context, the aim of our study was to assess the distribution of socio-demographic factors and the clinical profile of individuals diagnosed with RVO in Albania, a former communist country in South-eastern Europe which has been undergoing a rapid transition in the past decades.

Methods

A case-series study was carried out at the Primary Health Care Centre No. 2 in Tirana municipality during the time period 2013-2016. Overall, the number of patients diagnosed with RVO in this health centre during the study period was 44. Of these, 27 (61%) patients were males and 17 (39%) were females. On the whole, mean age of the patients was 69.5±11.5 years (with a range from 42 years to 93 years). Median age was 70.5 years (interquartile range: 60.3-77.8 years).
The diagnosis of RVO was based on the following criteria: i) signs and symptoms indicating a quick decrease and reduction of the unilateral sight; ii) fundoscopy, a conventional examination technique of the fundus employed at the primary health care services in Albania (a procedure which indicates the retinal veins that are dilated or tortuous, as well as the retinal haemorrhages); iii) fluorescein angiography, which was the main examination procedure in this study, and; iv) the optical coherence tomography (OCT).
Furthermore, information about selected clinical characteristics of each patient diagnosed with RVO was gathered. More specifically, the clinical information for all the patients diagnosed with RVO included the presence of glaucoma (yes vs. no), the type of glaucoma (open angle, closed angle, secondary, or absolute glaucoma), presence of diabetic

retinopathy, hypertensive retinopathy, cataract, macular oedema, papillary oedema, or comorbidity (all dichotomized into: yes vs. no), as well as the type of comorbidity (hypertension, diabetes, or both conditions).

Information on socio-demographic characteristics was also collected based on a structured interview. More specifically, for each patient it was gathered information on demographic factors (age and sex) and selected socio-economic characteristics [place of residence (dichotomized into: urban vs. rural areas) and employment status (trichotomized into: employed, unemployed, retired)].

The study was approved by the Faculty of Medicine in Tirana and all patients who agreed to participate in this study gave their informed consent.

Mean values and the respective standard deviations were calculated for the age of the overall sample of study participants, as well as separately in men and in women. Conversely, absolute numbers and their respective percentages were calculated for the other socio-demographic factors (place of residence and employment status) and all the clinical characteristics of the patients. Mann-Whitney U-test was used to compare the age between male and female patients diagnosed with RVO. On the other hand, Fisher's exact test was used to assess sex-differences in the distribution of the other socio-demographic factors (see Table 1) and all the clinical characteristics in the sample of patients included in this study (Table 2). A p-value of$\leq$0.05 was considered as statistically significant in all ca ses. Statistical Package for Social Sciences (SPSS, version 17.0) was used for all the statistical analyses.

Results

The distribution of socio-demographic characteristics of the patients included in this study is presented in Table 1. Mean age in men was 71.1±10.9 years, whereas in women it was 67.0±12.4 years. Yet, there was no evidence of a significant sex-difference in the mean age of the patients included in this study (Mann-Whitney U-test: P=0.27). About 19% of male patients and 29% of females were residing in rural areas, without evidence of a sex-difference though (P=0.47). Similarly, there was no evidence of a statistically significant difference in the distribution of employment status between genders, regardless of a higher rate of unemployment in women compared to men (29% vs. 15%, respectively, P=0.51) [Table 1].

Table 1. Socio-demographic characteristics of a sample of patients diagnosed with RVO during 2013-2016 in Tirana, Albania

Variable	Men (N=27)	Women (N=17)	P*	Total (N=44)
Age (in years) [mean±SD]	71.1±10.9	67.0±12.4	0.272	69.5±11.5
Place of residence [N (column %)]				
Urban areas	22 (81.5)	12 (70.6)	0.473	34 (77.3)
Rural areas	5 (18.5)	5 (29.4)		10 (22.7)
Employment status [N (column %)]				
Employed	2 (7.4)	1 (5.9)		3 (6.8)
Unemployed	4 (14.8)	5 (29.4)	0.505	9 (20.5)
Retired	21 (77.8)	11 (64.7)		32 (72.7)

* Mann-Whitney U-test was used for the comparison of age between men and women, whereas Fisher's exact test was used to test sex-differences regarding the distribution of place of residence and employment status.

The distribution of selected clinical characteristics of the patients included in this study is presented in Table 2. The prevalence of glaucoma was considerably and significantly higher in men than in women (67% vs. 24%, respectively, P=0.01). Absolute glaucoma was found in 26% of men, but only in 6% of women, notwithstanding the lack of a statistically significant sex-difference in the distribution of glaucoma types (P=0.26), possibly due to the modest sample sizes. Diabetic retinopathy was somehow more prevalent in women than in men (18% vs. 11%, respectively), whereas an opposite finding was noted for the presence of hypertensive retinopathy (6% vs. 11%, respectively). Yet, none of these differences was statistically significant. The prevalence of cataract was higher in female patients compared with their male counterparts (18% vs. 7%, respectively), regardless of the lack of statistical significance (P=0.36). Both macular oedema and papillary oedema were almost equally distributed in men and in women (22% vs. 18% and 4% vs. 6%, respectively).

Table 2. Distribution of clinical characteristics in a sample of patients diagnosed with RVO during 2013-2016 in Tirana, Albania

Clinical characteristic	Men (N=27)	Women (N=17)	P[†]	Total (N=44)
Glaucoma:				
No	9 (33.3)[*]	13 (76.5)	0.012	22 (50.0)
Yes	18 (66.7)	4 (23.5)		22 (50.0)
Glaucoma type:				
Open angle	5 (18.5)	5 (29.4)		10 (22.7)
Closed angle	4 (14.8)	5 (29.4)	0.261	9 (20.5)
Secondary	11 (40.7)	6 (35.3)		17 (38.6)
Absolute	7 (25.9)	1 (5.9)		8 (18.2)
Diabetic retinopathy:				
No	24 (88.9)	14 (82.4)	0.662	38 (86.4)
Yes	3 (11.1)	3 (17.6)		6 (13.6)
Hypertensive retinopathy:				
No	24 (88.9)	16 (94.1)	0.999	40 (90.9)
Yes	3 (11.1)	1 (5.9)		4 (9.1)
Cataract:				
No	25 (92.6)	14 (82.4)	0.359	39 (88.6)
Yes	2 (7.4)	3 (17.6)		5 (11.4)
Macular oedema:				
No	21 (77.8)	14 (82.4)	0.999	35 (79.5)
Yes	6 (22.2)	3 (17.6)		9 (20.5)
Papillary oedema:				
No	26 (96.3)	16 (94.1)	0.999	42 (95.5)
Yes	1 (3.7)	1 (5.9)		2 (4.5)
Comorbidity:				
No	4 (14.8)	0 (-)	0.147	4 (9.1)
Yes	23 (85.2)	17 (100.0)		40 (90.9)
Type of comorbidity:				
Hypertension	14 (51.9)	9 (52.9)	0.761	23 (52.3)
Diabetes	7 (25.9)	3 (17.6)		10 (22.7)
Both	6 (22.2)	5 (29.4)		11 (25.0)

[*] Absolute numbers and the respective column percentages (in parentheses).
[†] Fisher's exact test was employed to test sex-differences regarding the distribution of all clinical characteristics presented in the table.

All female patients had comorbid conditions compared to 85% of their male counterparts (P=0.15). The prevalence of hypertension was almost identical in both sexes (52% in men vs. 53% in women), whereas the prevalence of diabetes was somehow higher in men than in women (26% vs. 18%, respectively) [Table 2].

Discussion

This study provides evidence about the distribution of socio-demographic factors and the clinical profile of individuals diagnosed with RVO at primary health care services in Tirana, the capital and the largest city in post-communist Albania. Essentially, the main findings of this study consist of a higher prevalence of glaucoma, hypertensive retinopathy and diabetes in men than in women. On the other hand, women exhibited a higher prevalence of diabetic retinopathy, cataract and comorbid conditions. It should be noted that there are no previous studies describing the socio-demographic factors and clinical characteristics of Albanian patients with RVO.

The incidence and prevalence of RVO will increase steadily in Albania in line with the population aging. Thus, according to the last census conducted by the Albanian Institute of Statistics in 2011, the proportion of individuals aged 65 years and over increased to 11% (11). This gradual increase of the older population bears important implications for the heath care sector including also provision of more specialized care against visual impairment.

Several systemic risk factors for RVO are also associated with arterial thromboembolic events including myocardial infarction and cerebrovascular disease (12,13). From this perspective, it has been shown that the retinal blood vessels exhibit similar anatomic features and physiologic characteristics with cerebral vessels (1,14). Based on this evidence, it has been convincingly argued that there might be an association between RVO and myocardial infarction and cerebrovascular disease occurrence (1,14).

Our study may have several potential limitations due to the sample size and, particularly, sample representativeness. From this point of view, the number of individuals involved in this study was small and was confined only to one of the eleven primary health care centres of the municipality of Tirana. In addition, some individuals suffering from RVO might have not preferred to seek care in primary health services. Instead, some patients might have preferred more specialized care which is available at the University Clinic of Ophthalmology as a part of the University Hospital Centre "Mother Teresa", the only public hospital in Tirana. Also, some patients might have used private ophthalmology clinics which may currently provide better care in Albania. Based on these considerations, the representativeness of our study sample may be questionable and, therefore, our findings should not be generalized to the general population of Tirana and the overall population of Albania. Instead, findings of this study should be interpreted with extreme caution. On the other hand, the diagnosis of patients with RVO in our study was based on standardized and valid instruments, similar to studies conducted elsewhere. Nonetheless, we cannot entirely exclude the possibility of information bias related to socio-demographic data, in particular regarding the employment status of study participants.

In conclusion, notwithstanding some possible limitations, this study offers useful information about the distribution of socio-demographic factors and the clinical profile of primary health care users diagnosed with RVO in transitional Albania, an under-researched setting. Population-based studies should be carried out in the future in Albania in order to determine the magnitude and occurrence of RVO in the general population.

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