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Epidemiology of Rheumatoid Arthritis in Tirana, Albania

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ABSTRACT

Aim: Rheumatoid arthritis is considered a clinical syndrome across several disease subsets characterized by systemic inflammation, persistent synovitis, and autoantibodies. Our aim was to assess the distribution of risk factors among people diagnosed with rheumatoid arthritis in the adult population of Tirana, the capital city of Albania. **Methods:** All individuals diagnosed with rheumatoid arthritis in primary health care services of Tirana city during the period 2009-2012 were included in this study. The diagnosis of rheumatoid arthritis was based on the clinical signs and symptoms and laboratory tests including measurement of the rheumatoid factor. **Results:** Overall, there were identified 817 cases with rheumatoid arthritis in all primary health care centers of Tirana for the period 2009-2012. Of these, 529 (65%) were women and 288 (35%) were men. Genetic factors accounted for 60% of the diseases in women and 45% in men ($P < 0.001$). In both sexes, the proportion of older individuals was higher compared with younger adults. Most of the individuals with rheumatoid were from urban areas of Tirana. **Conclusion:** Our study provides new evidence about the distribution of risk factors of rheumatoid arthritis in transitional Albania where valid and reliable data about this disease were scarce. Future studies in Albania should assess the prevalence of rheumatoid arthritis in population-based samples.

Keywords: Albania, arthritis, rheumatoid arthritis, rheumatology.

1. INTRODUCTION

Rheumatoid arthritis is generally considered a clinical syndrome involving several disease subsets (1), with a number of inflammatory flows (2), leading to an eventual common pathway in which persistent synovial inflammation and associated damage to articular cartilage and underlying bone are present (3).

It has been reported widely in the international literature that, a main inflammatory process in the pathophysiology of the rheumatoid arthritis consists of overproduction of the tumor necrosis factor (3, 4) which leads to overproduction of many cytokines such as interleukin 6, which causes persistent inflammation and joint destruction (3, 5).

As for the etiology of the rheumatoid arthritis, genetic factors account for 50% of the risk of developing the disease (6, 7) and are generally associated with either autoantibody-positive disease (ACPA-positive) or ACPA-negative disease (3). ACPA-positive disease is associated with increased joint damage and low remission rates (8). Smoking, probably the most frequently studied environmental factor for rheumatoid arthritis, is deemed a risk factor for ACPA-positive disease (9).

In developed countries, it has been reported that rheumatoid arthritis affects 0.5%-1.0% of adults in population-based studies (3). Data about transitional countries including Albania are scarce. In this framework, we undertook a study to describe the distribution of risk factors among individuals diagnosed with rheumatoid arthritis in primary health care services of Tirana, the capital city of Albania.

2. METHODS

All individuals diagnosed with rheumatoid arthritis in primary health care services of Tirana city for the period 2009-2012 were included in this study. The diagnosis of rheumatoid arthritis was based on clinical signs and symptoms, as well as in the laboratory tests including measurement of the rheumatoid factor.

Demographic factors included sex and age of study participants, as well as their place of residence (urban areas vs. rural areas). Furthermore, information about the smoking status (yes vs. no) and alcohol consumption (dichotomized into: yes vs. no) was also collected for all participants.

The study was approved by the Scientific Board of the Faculty of Medicine, Tirana, Albania. All participants gave their informed consent.

T-test was used to compare the mean values of age between men and women. Conversely, Fisher's exact test was used to compare the proportions of age-group, place of residence, genetic factors and environmental factors (smoking and alcohol intake) between men and women.

3. RESULTS

Overall, there were 817 individuals diagnosed with rheumatoid arthritis in all primary health care centers of Tirana city for the period 2009-2012. Of these, 529 (65%) were women and 288 (35%) were men. Mean age was similar among men and women (62.4 ± 8.6 vs. 62.8 ± 7.8 , $P = 0.19$) [Table 1]. The proportion of

Characteristics	Men (N=288)	Women (N=529)	P-value [†]
Age (years)	62.4±8.6*	62.8±7.8*	0.19
Age-group:			
<65 years	87 (30.2) [†]	131 (24.8) [†]	0.098
≥65 years	201 (69.8)	398 (75.2)	
Place of residence:			
Urban areas	193 (67.0)	313 (59.2)	0.029
Rural areas	95 (33.0)	216 (40.8)	
Genetic factors:			
Yes	129 (44.8)	317 (59.9)	<0.001
No	159 (55.2)	212 (40.1)	
Smoking:			
Yes	89 (30.9)	86 (16.3)	<0.001
No	199 (69.1)	443 (83.7)	
Alcohol intake:			
Yes	93 (32.3)	63 (11.9)	<0.001
No	195 (67.7)	466 (88.1)	

* Mean value ± standard deviation. † Numbers and column percentages (in parentheses). ‡ T-test was used for comparison of mean ages between men and women, whereas Fisher's exact test was employed for comparison of all the other variables.

Table 1. Distribution of risk factors among individuals diagnosed with rheumatoid arthritis (N=817) in primary health care services in Tirana, Albania, during the period 2009-2011

older participants (≥65 years) was somehow higher among women (75.2%) compared to men (69.8%), but this finding was not statistically significant (P=0.098). In men, there were more individuals from urban areas (67%) than among women (59.2), a finding which was statistically significant (P=0.029). Genetic factors accounted for almost 60% of the cases with rheumatoid arthritis in women, whereas in men this proportion was confined to about 45% of participants (P<0.001). The prevalence of both smoking and alcohol consumption were significantly higher in men than in women (for smoking: 30.9% in men vs. 16.3% in women, P<0.001; for alcohol intake: 32.3% vs. 11.9%, P<0.001) [Table 1].

4. DISCUSSION AND CONCLUSION

In our study, we obtained evidence about the distribution of selected risk factors among individuals diagnosed with rheumatoid arthritis in all primary health care centers in Tirana city for the period 2009-2012. We do not have population-based data to assess the prevalence of rheumatoid arthritis in the population of Albania. Such population-based studies are lacking for Albania and other countries in the Western Balkans region. The international literature reports that the estimates of the frequency of rheumatoid arthritis vary depending on the methods used to determine the presence of this condition (3, 10). In population-based studies in developed/industrialized countries, it has been reported in several studies that rheumatoid arthritis affects 0.5%-1.0% of adults (3).

Furthermore, the international literature reports that rheumatoid arthritis is a disease which is three times more frequent in women than men (3). In our study, there was also evidence of a sex-gradient, where the proportion of female cases was 65% compared with the proportion of male cases (35%).

According to the literature, the prevalence of rheumatoid arthritis increases with age in both men and women. In our study, we obtained similar evidence, with a higher proportion of cases among older individuals – a finding which was similar in men and in women (Table 1).

Incidence of rheumatoid arthritis ranges from 5-50 per

100,000 adults in developed countries and increases with age (11). Again, data about the incidence of this condition in Albania and other countries in the Western Balkans are scarce.

The prevalence of rheumatoid arthritis has considerable geographical variations (12). The disease is more prevalent in Northern Europe and North America compared with many parts of the developing world and/or transitional countries, such as e.g. rural West Africa (13). It has been suggested that these geographical variations maybe linked to different genetic predispositions, but are also related to different environmental factors which expose individuals from different regions in the world to different levels of risk for acquiring the disease (3).

Smoking is reported as the main environmental risk factor which increases twice the risk of developing rheumatoid arthritis (3). The effect of smoking is restricted to patients with ACPA-positive disease (3). Other potential environmental risk factors for development of rheumatoid arthritis may include alcohol consumption, coffee intake, and oral contraceptive use (3). In our study, we noted a significantly higher prevalence of both smoking and alcohol intake among male participants compared with their female counterparts.

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