

Epidemiology of aortic aneurisms in Albania

Ilirian Laci¹, Alketa Spahiu²

¹Radiology and Nuclear Medicine Service, University Hospital Center “Mother Teresa”, Tirana, Albania;

²Statistics Service, University Hospital Center “Mother Teresa”, Tirana, Albania.

Corresponding author: Dr. Ilirian Laci

Address: Rr. “Dibres”, No. 370, Tirana, Albania;

Telephone: +355672072668; E-mail: ilirianlaci@yahoo.com

Abstract

Aim: The aim of this study was to describe selected epidemiologic features of aortic aneurisms in Albania, a post-communist country in the Western Balkans.

Methods: 75 consecutive patients diagnosed with aortic aneurisms (thoracic and/or abdominal) admitted at the University Hospital Centre “Mother Teresa” in Tirana during 2012-2014 (56 men and 19 women) were included in this study. The diagnosis of aortic aneurisms was made through computerized tomography (CT) scan with contrast. Information on demographic characteristics and other useful clinical data were also collected for all patients included in this study.

Results: The biggest number of cases involved the aneurisms of the ascendant aorta (N=13). The “incidence” of aortic aneurisms was the highest in Tirana (4.14 per 100,000 population) followed by Durres (3.81 per 100,000 population). On the other hand, there were no cases reported in Kukes and Berat. When cases from Tirana were compared with those from other districts of Albania, there were no significant differences with regard to age (P=0.593), severity of the disease (P=0.615), or mortality rate (P=0.971).

Conclusions: This may be the first study reporting about the epidemiological features of aortic aneurisms in Albania, a country which is undergoing intensive and profound reforms including also the health care sector. Health professionals should be aware of the high mortality and disability associated with the occurrence of aortic aneurisms which require special attention in the routine daily practice.

Keywords: Albania, aneurism, CT scan, epidemiologic features, radiography, ultrasonography, ultrasound.

Introduction

Arterial dilation was described for the first time in the antic Ebers papyrus – a medical writing found in Egypt and dating in 1550 BC (1). A more detailed description of arterial aneurisms though relates to the work of the Greek physician Galen who based his work in the observation of false aneurisms among the wounded gladiators during the second century AD (1). In the 16th century, the French surgeon Ambroise Pare described a death from a rupture of thoracic aortic aneurism and concluded that the internal aneurisms were incurable. He proposed also that syphilis played a role in the manifestation of certain types of aortic aneurisms, but this was not broadly accepted until 1895 when Dohle described the microscopic findings of syphilitic aortitis, which constitutes an inflammation of the aorta associated with the tertiary stage of syphilis infection (1). In Albania, there has been an increase in cardiovascular diseases in the past two decades following the breakdown of the communist regime (2,3). In particular, the death rate from ischemic heart disease in Albania is the highest in South Eastern Europe, in line with the rapid changes in dietary patterns characterized by an increase in processed foods and an increase in the prevalence of smoking (2,3). In addition, Albania is the only country in South Eastern Europe which has experienced an increase in the mortality rate from ischemic heart disease and cerebrovascular diseases in the past two decades (3). However, specific information about the frequency and distribution of aortic aneurisms in the Albanian population is scarce.

In this framework, it would be appealing to study the epidemiology of aortic aneurisms and aortic dissections in Albania, a transitional country in South Eastern Europe which, among other reforms, is also undergoing a deep reform in the health care sector.

Methods

Our study involved 75 consecutive patients diagnosed with aortic aneurisms (thoracic and/or abdominal) admitted at the University Hospital Centre “Mother Teresa” in Tirana, which is the only tertiary health care institution in Albania, during the period January 2012 – December 2014. Overall, 56 men and 19 women were included in this study.

For each patient included in our study, the diagnosis of aortic aneurisms was based on computerized tomography (CT) scan with and without contrast, radiography, magnetic resonance imaging, angiography (aortography), or echocardiography.

In addition, other useful clinical information and demographic data were collected for each study participant.

One of the main objectives of our analysis was to describe the distribution of the cases with aortic aneurisms according to the place of residence in Albania. The epidemiological map for this purpose was based on the division of the country into 12 prefectures (regions) with the respective populations (residents) according to the last census conducted in Albania in 2011. For each region/prefecture of Albania, the number of cases was expressed per 100,000 population.

Fisher’s exact test was used to compare the proportions of age-groups, severity of the disease (dissections and ruptures of aneurisms) and mortality rate between Tirana patients and those residing in the other districts of Albania. In all cases, a p-value of ≤ 0.05 was considered as statistically significant. Statistical Package for Social Sciences (SPSS, version 19.0) was used for the data analysis.

Results

Figure 1 presents the distribution of patients included in this study according to their diagnosis upon hospitalization. The highest number of cases involved the aneurisms of the ascendant aorta (N=13).

Figure 1. Distribution of cases according to their respective diagnoses upon hospitalization

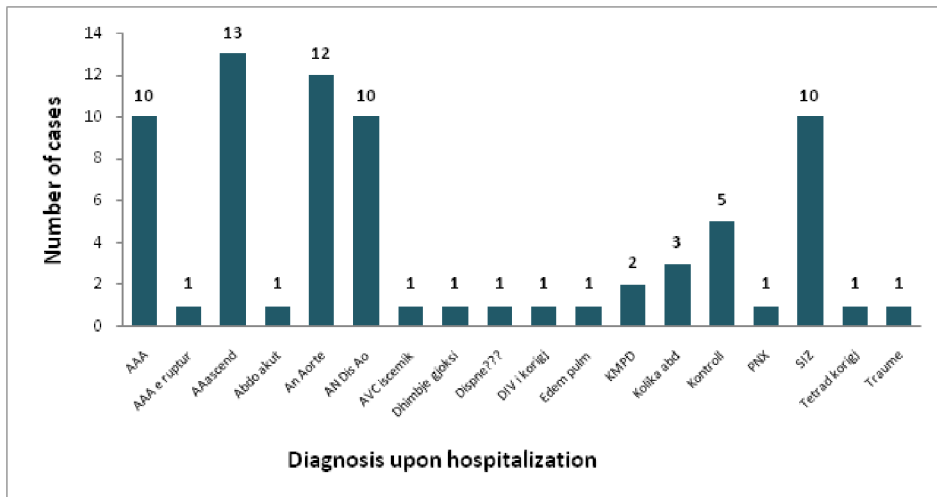
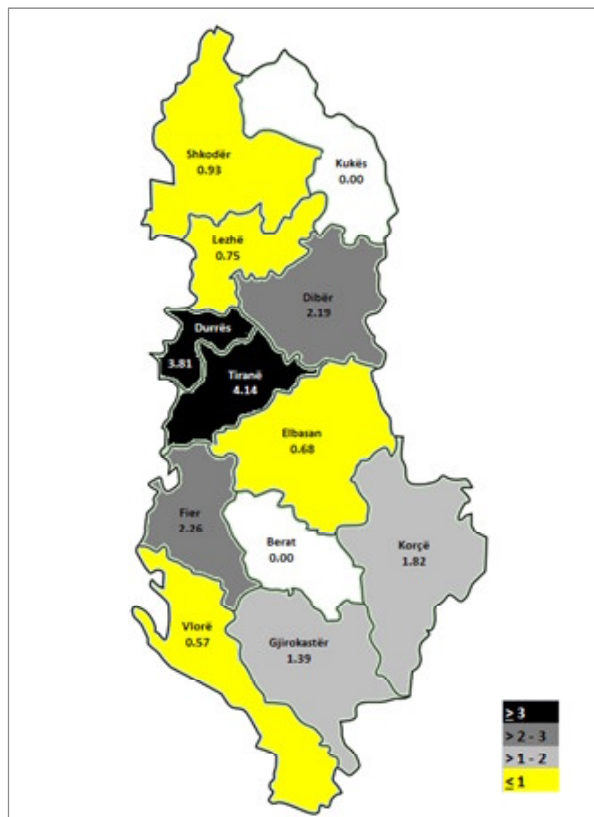


Figure 2 presents the distribution of the patients with aortic aneurisms according to their place of residence (prefecture) in Albania. The “incidence” of aortic aneurisms was the highest in Tirana (4.14

per 100,000 population) followed by Durres (3.81 per 100,000 population). On the other hand, there were no cases reported in Kukës and Berat.

Figure 2. Distribution of Albanian patients with aortic aneurisms (cases per 100,000 population) according to the region (prefecture)



When cases from Tirana were compared with those from other districts of Albania, there were no significant differences with regard to age ($P=0.593$), severity of the disease ($P=0.615$), or mortality rate ($P=0.971$) [data not shown].

Discussion

Main findings of our study include a higher incidence of aortic aneurisms in Tirana (the Albanian capital) and Durrës (the second largest district in Albania) compared to the other regions of Albania. On the other hand, there were no cases of aortic aneurisms pertinent to Kukes (north Albania), or Berat (located in south Albania). The absence of cases may indicate that there is an under-diagnosis of aortic aneurisms in these two districts, or individuals seek treatment abroad (in the case of Kukes, patients may be referred to the neighboring Kosovo for specialized treatment of aortic aneurisms).

The natural history of aortic aneurisms involves ruptures or dissections. Different population studies have demonstrated that aneurisms of thoracic aorta range up to 10 new aneurism cases per 100,000 people a year (4). Up to 80% of these aneurisms experience ruptures in patients who have survived but have not been properly treated (constituting 10%-20% of the cases) (4). In general, women develop at a later age thoracic aortic aneurisms compared to men, but have a higher risk for ruptures. On the other hand, in advanced ages, the risk for experiencing ruptures is very high in both sexes.

Regarding co-morbidity, chronic obstructive pulmonary disease increases 3.6 times the risk for

ruptures of aortic aneurisms (5). It should be noted that the risk for ruptures is directly linked to the diameter of aneurisms. Thus, for every 1 cm increase in the diameter of aneurisms, the risk increases twice, ranging from a 7% risk for ruptures in patients with a diameter >6 cm, up to 43% risk in patients with a diameter >7 cm (5). About 15,000 deaths occur every year in the USA due to the ruptures of aortic aneurisms (6,7), a toll which is greater than the HIV/AIDS. Thoracic aortic aneurisms are slightly more frequent than the abdominal aortic aneurisms with an annual incidence of 10 cases per 100,000 population, and an annual risk for ruptures up to 7% (6,8). The distribution of aneurisms along aorta is quite heterogeneous with 50% at the ascendant aorta, 10% at the arch and 40% at the descendent aorta (6,8). The incidence of aortic dissection is somehow higher in women than in men. As a matter of fact, 79% of acute unexplained complications occur in women (4,9-11).

In conclusion, our study may be the first study reporting about the epidemiological features of aortic aneurisms in Albania, a country which is undergoing intensive and profound reforms including also the health care sector. Nevertheless, a comprehensive study should be conducted in the future in order to assess the prevalence of aortic aneurisms in Albania.

Health professionals should be aware of the high mortality and disability associated with the occurrence of aortic aneurisms which require special attention in the routine daily practice.

Conflicts of interest: None declared.

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