

## Epidemiology of breast cancer in transitional Albania

**Adrian Hoti<sup>1</sup>, Edmond Gashi<sup>1</sup>, Fationa Kraja<sup>1</sup>, Agim Sallaku<sup>1</sup>**

<sup>1</sup>Oncology Service, University Hospital Center “Mother Teresa”, Tirana, Albania.

**Corresponding author:** Dr. Adrian Hoti  
Address: Rr. “Dibres”, No. 370, Tirana, Albania;  
Telephone: +355672024078; E-mail: dr.ahoti@yahoo.com

### Abstract

There is evidence of an increase in the total burden of disease from cancer in Albania in the past few decades. It has been suggested that the increasing trend in the burden of cancer in the Albanian population is due to the rapidly increasing rates of unhealthy behaviors including tobacco smoking, harmful alcohol consumption (excessive intake, as well as the deleterious patterns including bingeing), unhealthy dietary habits, high levels of obesity, as well as physical inactivity. However, regardless of the increase in the cancer burden within the country, Albanian men and women exhibit one of the lowest (age-standardized) values in the South Eastern European region.

According to the most recent report of the World Health Organization (WHO) released in 2017, the estimated breast cancer incidence in females in Albania is 30.8 per 100,000 population. The WHO European Region average is 106.7 per 100,000 population, which is substantially higher than in Albania. As a matter of fact, the incidence rate of breast cancer in Albanian females is lower than in all countries of the South Eastern European region. The lowest incidence rate of breast cancer estimated in Albanian females compared with the other countries of the Southeastern European region is in line with the trend observed for the incidence of all types of cancer and the age-standardized death rates of malignant neoplasms.

**Keywords:** breast cancer, burden of cancer, cancer, oncology, tumors.

### **Burden of cancer in Albania**

From 1990 which marked the breakdown of the communist regime in Albania until 2010, it has been estimated an increase of 56% in the total burden of disease from cancer in this transitional country. Hence, on the whole, there was an absolute increase of almost 1,200 Disability-Adjusted Life Years (DALYs) per 100,000 from the year 1990 to the year 2010 (1,2). In relative terms, the increase in the proportion of total burden of disease was 4.6% (from 7.4% in 1990 to 12.0% in 2010). There were no sex-differences in the observed trend; hence, there was evidence of a similar increase in both men and women (59% vs. 54%, respectively), regardless of the fact that there was a higher overall DALYs from cancer in Albanian men compared to women (68% higher in 2010 and 63% higher in 1990) (1,2).

In Albanian males, there was a sharp increase in DALYs from cancer especially in the period 1995-2000, with an absolute increase of 787 DALYs per 100,000 (or, a relative increase of 27%). Next, there was a gradual increase, but substantially smaller compared with the period 1995-2000. On the other hand, in females, there was evidence of a steady increase from 1995 to 2005 (1,716 and 2,433 DALYs per 100,000, respectively), which almost leveled off in the next five years (1,2).

In any case, likewise the trend observed for cardiovascular diseases, there is evidence of a remarkably strong increase in the burden of cancer in the Albanian population in the past few decades. At present, the proportion of cancer (12% of the overall DALYs) constitutes the second contributor to the total burden of disease in the Albanian population after cardiovascular diseases (which, in turn, account for 24% of the total DALYs in the Albanian population).

It has been suggested that the increasing trend in the burden of cancer in the Albanian population is due to the rapidly increasing rates of unhealthy behaviors including tobacco smoking, harmful alcohol consumption (excessive intake, as well as

the deleterious patterns including bingeing), unhealthy dietary habits, high levels of obesity, as well as physical inactivity (1-4).

However, regardless of the increase in the cancer burden within the country, Albanian males had one of the lowest (age-standardized) DALYs in the South Eastern European region in the year 2010, with 3,925 DALYs per 100,000. A similar trend was evidenced in Albanian women who had the lowest DALYs in the South Eastern European region (with 2,995 DALYs per 100,000).

### **Cancer incidence in Albania**

According to the official national data – available from the registry of the Oncology Service of the University Hospital Center “Mother Teresa” in Tirana and partly from the registries of the district hospitals and pathology services – there are approximately 3,500 new cases of cancer each year in Albania (5).

However, the particularly low (registered) incidence of cancer in Albania (based on the operational data from the Albanian Ministry of Health, there are about 100 new cases per 100,000 population), as compared with the same rate in the other European countries, is probably attributed to partial registration and to some extent also to the relatively high proportion of young people in Albania (6). As a matter of fact, over 70% of the Albanian population is less than 45 years – constituting one of the youngest populations in the European region (6). Therefore, based on all these considerations, the burden of the overall cancer conditions in Albania is definitely higher than the official national reports. Furthermore, given the unabated trend in the ageing of the population (6,7), a substantial increase in the incidence of cancer is foreseen to affect Albania in the coming years.

### **Breast cancer incidence and mortality rate in Albania vis-à-vis other countries in the South Eastern European region**

According to the most recent WHO report released

in 2017 (8), the estimated breast cancer incidence in females in Albania is 30.8 per 100,000 population. The WHO European Region average is 106.7 per 100,000 population, which is substantially higher than in Albania. As a matter of fact, the incidence rate of breast cancer in Albanian females is lower than in all countries of the South Eastern European

region. The highest incidence rate in this region is evident in Slovenia (125.0 per 100,000 population) followed by Croatia (116.1 per 100,000 population) and Montenegro (114.9 per 100,000 population). The country-specific incidence rates of breast cancer in females for the South Eastern European region are presented in Table 1 (8).

**Table 1. Breast cancer incidence (cases per 100,000 population) in females in countries of South Eastern Europe (source: WHO, 2017)**

Country	Year: 2015
<b>Albania</b>	<b>30.8</b>
Bosnia and Herzegovina	37.5
Croatia	116.1
Macedonia	65.8
Montenegro	114.9
Serbia	97.8
Slovenia	125.0

Of note, the lowest incidence rate of breast cancer estimated in Albanian females compared with the other countries of the Southeastern European region is in line with the trend observed for the incidence of all types of cancer and the age-standardized death rates of malignant neoplasms (Table 2) (8). Thus, the mortality rate from malignant neoplasms in Albania in the year 2015 was 91 deaths per 100,000 population, a figure which was remarkably the lowest among all countries of the region (Table 2). The nearest value was evident for Montenegro (about 129 deaths per 100,000 population), whereas the highest estimate was evident in Croatia (with about 207 deaths per 100,000 population). For the same year, the WHO European Region average was 153.8 per 100,000 population (8), which was substantially higher than in Albania. Likewise, the cancer incidence rate (all forms) in 2015 was the lowest in Albania (with about 96 cases per 100,000 population) compared

with all the other countries of the South Eastern European region (Table 2). The lowest figure after Albania was evident in Montenegro (about 129 cases per 100,000 population), whereas the highest estimate was reported in Croatia (about 212 cases per 100,000 population) (8). For the same year, the WHO European Region average value was about 159 cases per 100,000 population, a figure which was also considerably higher than the respective incidence rate observed in Albania (8).

Furthermore, the lowest incidence rate of breast cancer estimated in Albanian females compared with the other countries of the Southeastern European region correlates with a similar trend observed for the death rates from the main chronic diseases in females including cardiovascular disease, overall types of cancer, diabetes and chronic respiratory diseases (8). Hence, the age-standardized mortality rate from these major non-communicable diseases in Albanian females was

**Table 2. Death rates from malignant neoplasms and cancer incidence rates (all forms) in countries of South Eastern Europe (source: WHO, 2017)**

Country	Malignant neoplasms (deaths per 100,000)	Cancer incidence (all forms) per 100,000
<b>Albania</b>	<b>91.0</b>	<b>96.1</b>
Bosnia and Herzegovina	156.3	157.4
Croatia	207.5	211.8
Macedonia	160.1	172.4
Montenegro	128.7	128.7
Serbia	198.0	202.8
Slovenia	185.1	197.2

estimated at about 182 deaths per 100,000 (women aged 30-69 years) in the year 2015, which was the lowest rate among all countries of the South Eastern European region (8). For the same year, the lowest mortality rate after Albania was reported in Slovenia (188 deaths per 100,000 women aged 30-69 years). On the other hand, the highest death rate for the year 2015 was evident in Montenegro and Serbia (344 and 341 deaths per 100,000

females aged 30-69 years, respectively), followed by Macedonia (331 deaths per 100,000 females aged 30-69 years). The WHO European Region average value was about 262 deaths per 100,000 women aged 30-69 years (8). The country-specific age-standardized death rates in females from major non-communicable diseases for the South Eastern European region are exhibited in Table 3 (8).

**Table 3. Age-standardized death rates in females from major non-communicable diseases per 100,000 population (ages 30-69 years) in countries of South Eastern Europe (source: WHO, 2017)**

Country	Year: 2015
<b>Albania</b>	<b>181.8</b>
Bosnia and Herzegovina	277.3
Croatia	247.5
Macedonia	331.5
Montenegro	344.0
Serbia	341.1
Slovenia	188.0

#### **National cancer control program in Albania**

A national cancer control program was officially endorsed in Albania in the year 2011. As acknowledged by the Albanian Ministry of Health, this program was drafted with technical expertise and

support from international agencies and donors. Furthermore, the national cancer control program in Albania was designed in line with the WHO recommendations for implementation in a stepwise fashion (referred to as “piecemeal” approach) by

identifying and undertaking first those activities that are the most urgent and that promise the greatest benefit (5). The first two preliminary steps have been already accomplished including coordination and involvement of all the main national stakeholders and subsequently the international technical agencies and funding institutions.

In addition, a national action plan has been already developed in Albania including concrete steps and activities for each of the main pillars of the national program for cancer control, which are briefly summarized below:

- Primary prevention (avoidance of risk factors which account for at least one-third of all types of cancers) (9,10);
- Secondary prevention (early detection by selection and prioritization of the types of cancers which can be effectively detected at a preclinical stage and for which there is an effective treatment when detected at an early stage; of the eight leading cancers in Albania, the national program for cancer

control has identified four types of cancer which are amenable to early detection including breast, cervical, skin and larynx/oropharynx);

- Tertiary prevention (effective treatment by: strengthening national human resource development; provision of adequate equipment, up-to-date technology for both pathology and radiotherapy, and; availability of cost-effective drugs);

- Quaternary prevention (palliative care by provision of affordable and cost-effective drugs, which should primarily reach individuals most in need for such health care services), and;

Ultimately, a population-based cancer registry should be established in Albania in line with the best international examples and practices. The envisaged cancer register should ideally cover the whole population. Such a register would help considerably policymakers, decision-makers and health professionals at large in order to provide care, plan, monitor and evaluate the cancer control program in Albania.

**Conflicts of interest:** None declared.

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