Incidence of cervical cancer in Montenegro

B. Čolaković, V. Čolaković-Popović

Clinical Center of Montenegro, Podgoric, Montenegro (Romania)

Summary

Objective and Method: To analyze the development of the number of cervical cancer cases and those who died of the disease in Montenegro. We used data on the number of cases and deaths over a eight-year period (2000-2007). *Results:* In Montenegro 550 women developed cervical cancer in that period, which is 45% of all cancers affecting the female genital organs. In the first five years, the average disease rate was 19.52/100,000, but in the last three years it amounted to 25,61/100,000 (around 24% higher). The trend suggests significant growth. The average mortality rate was 4.2/100,000. The trend suggests very slight growth. The majority of cases were aged between 40 and 49 years (196 cases out of 550 or 35.64%). *Conclusion:* Almost 2/3 of the cases (64.19%) were aged between 40 and 59 years. There is a need to organize screening of the entire female population aged between 20 and 65-70 years. There is also a need to establish a central registry for malignant diseases in Montenegro.

Key words: Cervical cancer; Incidence; Screening.

Introduction

Cervical cancer is the most frequent malignant disease of the female genital organs and accounts for 12% of all malignant diseases [1]. Cervical cancer strikes nearly half a million women around the globe and claims 270,000 lives each year. Around 75% of all diseased cases and 80% of those who die are from less developed regions of the world [2].

Average standardized incidence rate in less developed regions is 19.1/100,000 and is twice as high as the rate in developed regions (10.3/100,000), whereas mortality rate is 2.8 times higher in undeveloped regions (11.2/100,000) if compared to developed ones (4.0/100,000) [3]. Finland is the country with the lowest incidence rate (4.3/100,000) and in France the incidence rate is 9.8/100,000, whereas in Romania it is 23.9/100,000 [3]. Incidence rate in Serbia amounts to 24.3/100,000, whereas mortality rate is 6.8/100,000 [4].

Reduction in the number of diseased cases and women who die of cervical cancer in developed countries has resulted from years of screening aimed at early detection of premalignant and malignant changes in cervices. The aim of screening is to cover as many women as possible, to examine them and conduct a Pap test. It has been shown that an increase in the number of the target population examined produces better screening effects than more frequent repetition of screening of the same women [5]. Predominantly the accepted opinion is that women aged between 20 and 65 years should be included in screening, even though some suggest that the threshold should be 70 years. Following three consecutive normal cytological smears with each taken after a one-year period, further screening of women in low-risk groups should be conducted every two or three years [6, 7].

In Montenegro well organized screening for the early detection of cervical cancer still does not exist. Some activities have been undertaken in that respect which is why annual work plans of health institutions (healthcare centers) contain the item – systematic examination of women – which mainly includes small numbers of women examined and repeated examinations of the same women.

There is no reliable registry of malignant diseases in Montenegro which is why valid data concerning diseases of the female genital organs can only be found in the records of the Council for Malignant Diseases of Female Genital Organs (CMDFGO) in the Clinical Center of Montenegro, Podgorica, which includes all women with an established diagnosis of malignant disease of the female genital organs.

Materials and Method

Data obtained from the CMDFGO in the Clinical Center of Montenegro, protocols of women who underwent surgery, and pathohistological examinations of women treated in the Department of Gynecology and Obstetrics at the Clinical Center were reviewed. All women with a diagnosis of cervical cancer are addressed to the CMDFGO where a final decision as to further treatment is made.

Data on number of the female population and mortality data were extracted from the Bureau of Statistics of the Republic of Montenegro (MONSTAT).

The observation period was eight years (2000-2007). Data for the period between 2000 and 2004 had been gathered earlier, and then the data between 2005 and 2007 were processed, and we have sought to consider the potential differences.

Results

Tables 1a and 1b show the distribution of female genital cancer cases in Montenegro.

Over a five-year period (2000-2004) 308 women in Montenegro developed cervical cancer, whereas over the last three years (2005-2007), 242 women developed cer-
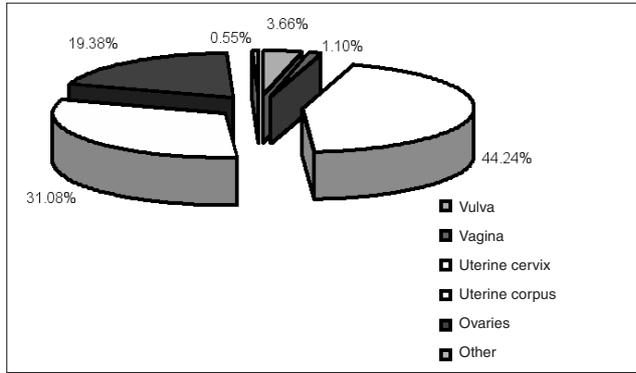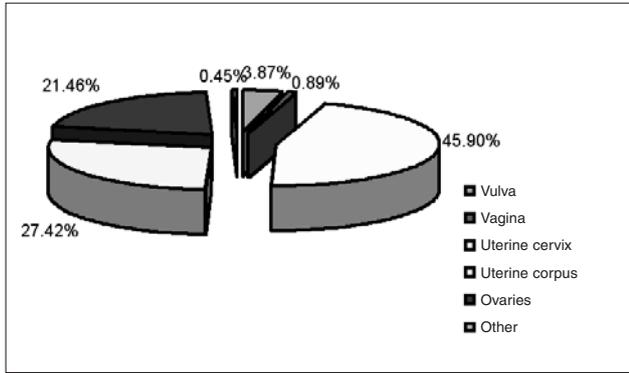
Figure 1a/1b. — Graphic distribution of Tables 1a/b.

Table 1a.

	2000	2001	2002	2003	2004	Total	
Vulva	7	4	8	3	4	26	3.87%
Vagina	3			2	1	6	0.89%
Uterine cervix	70	64	56	48	70	308	45.90%
Uterine corpus	47	36	25	40	36	184	27.42%
Ovaries	32	20	34	23	35	144	21.46%
Other				2	1	3	0.45%
Total	159	124	123	118	147	671	100.00%

*Other: choriocarcinoma 1, fallopian tube cancer 1, and malignant schwanoma 1.

Table 1b.

	2005	2006	2007	Total	
Vulva	11	3	6	20	3.66%
Vagina	1	2	3	6	1.10%
Uterine cervix	81	76	85	242	44.24%
Uterine corpus	60	47	63	170	31.08%
Ovaries	45	29	32	106	19.38%
Other	3			3	0.55%
Total	201	157	189	547	100.00%

**Other: choriocarcinoma 2, fallopian tube cancer 1.

Table 2.

Uterine cervical cancer	2000	2001	2002	2003	2004	2005	2006	2007
Cases (no.)	70	64	56	48	70	81	76	85
Rate	22.2	20.3	17.7	15.2	22.2	25.72	24.13	26.99
Decreased (no.)	8	19	11	10	15	17	14	
Rate	2.5	6.0	3.4	3.1	4.7	5.4	4.4	

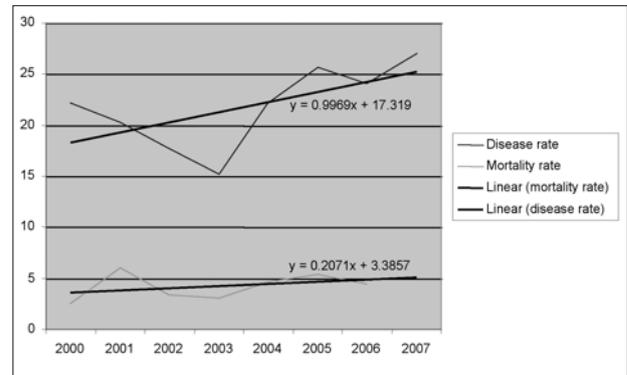*** Mortality data for 2007 have still not been processed by MONSTAT.

Figure 2.

Mortality rate over the seven-year period (2000-2006) is within a range of 3.1-6.0/100,000. Average mortality rate is 4.2/100,000 which is nearly at the level of developed regions.

The trend graphically shows the incidence of disease rate and mortality caused by cervical cancer.

Both of the observed rates indicate growth. Disease rate suggests more substantial growth over the last eight years, whereas the mortality rate suggests minor growth.

Tables 3a and 3b provide data regarding the number of cervical cancer cases relative to age (age groups, data about the number of females according to age group and calculation of specific rates over the last eight years).

Average disease rate in the first five years is 19.52/100,000, whereas over the last three years it amounts to 25.61/100,000 which is higher by around 24%.

Around 320,000 women live in Montenegro (according to the 2003 census there were 314,920 women). Tables indicate the number of people according to the five-year period for females aged 20 and more years.

Out of the total number of cases (8 years), 82 or 14.91% were younger than 40 years of age, while 196 or 35.64% were aged between 40 and 49 years. In the sixth life decade (50-59 years) 157 or 28.55% of women developed cancer, while in the seventh life decade there were 85 or 15.45% cases. Thirty women (5.45%), aged over 60 years developed the disease.

vical cancer which is an approximate 24% increase with respect to the annual average. Cervical cancer is the most frequent malignant disease of the female genital organs and accounts for 45% of all malignant diseases. It is followed by endometrial cancer accounting for around 27-31%, ovarian cancer with around 19-21%, and vulvar cancer with somewhat more than 3.5%.

Table 2 contains data on the number of diseased cases and women who died of cervical cancer, and disease and mortality rate per 100,000/year.

Disease rate (by year) moves within a range from 15.2/100,000 to 26.99/100,000. Average disease rate in the observed eight-year period in Montenegro is 21.83/100,000 which is at the level of non-developed regions.

Table 3a (2000-2004).

	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
No. of females	24,171	22,632	20,963	20,908	22,111	22,002	20,523	14,900	15,840	15,442	11,889	8,471	6,374
Uterine cervix	1	4	13	30	49	63	51	28	29	22	11	7	
Rate	0.8	3.5	12.4	28.7	44.3	57.3	49.7	37.6	36.6	28.5	18.5	16.5	

Table 3b (2005-2007).

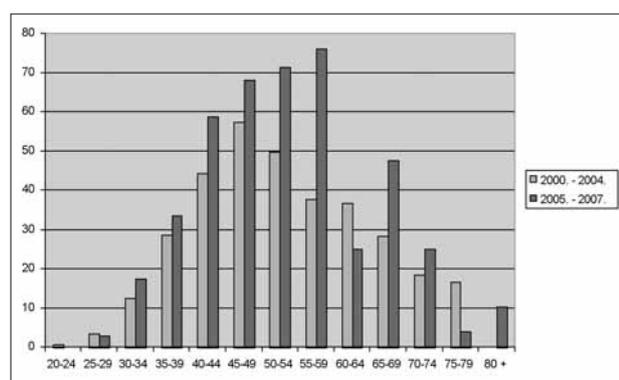|	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
No. of females	24,171	22,632	20,963	20,908	22,111	22,002	20,523	14,900	15,840	15,442	11,889	8,471	6,374
Uterine cervix		2	11	21	39	45	44	34	12	22	9	1	2
Rate		2.9	17.5	33.5	58.8	68.2	71.5	76.0	25.2	47.5	25.2	3.9	10.4

Figure 3. — Graphic of the data from Table 3.

Table 4.

2000-2007	No. of women	Cervical cancer	Incidence rate
Andrijevica	2844	4	17.58
Bar	20508	59	35.96
Berane	17523	33	23.54
Bijelo Polje	25057	22	10.97
Budva	8275	16	24.17
Cetinje	9603	21	27.34
Danilovgrad	8283	10	15.09
Herceg Novi	17027	26	19.09
Kolašin	4966	10	25.17
Kotor	12074	20	20.71
Mojkovac	5022	8	19.91
Nikšić	38113	53	17.38
Plav	6984	3	5.37
Pljevlja	18246	22	15.07
Plužine	2135		
Podgorica	86264	193	27.97
Rozaje	11336	16	17.64
Šavnik	1485	3	25.25
Tivat	6919	19	34.33
Ulcinj	10118	11	13.59
Žabljak	2138	1	5.85
Total	314920	550	21.83

Over the last three years (2005-2007) the number of women with cervical cancer has increased by around 24%. The increase differs in certain age groups. For women under 40 years, the increase is 15%, for those aged between 40 and 50 the increase is 29% (range from 16% in the group aged between 45 and 49 years of age, range from 50% for the group aged between 55 and 59 years of age). The rise in incidence over the last three years among women aged between 40 and 44 years is 25%, while it amounts to 30% among women aged between 50 and 54 years.

In the period between 2000 and 2004, the highest specific incidence rate was among women aged between 45-49 years, whereas over the last three years the highest specific incidence rate was among women groups aged between 50 and 59 years.

Table 4 provides data for all eight years on the number of cervical cancer cases by municipalities, number of the female population and calculation of disease rate.

Average cervical cancer rate in Montenegro over the period 2000-2007 is 21.8/100,000. As indicated in the table, disease occurrence in municipalities is quite uneven.

It was observed that in eight municipalities (out of a total of 21 in Montenegro) the cervical cancer rate is higher than the average. In those municipalities there were 354 cervical cancer cases, while the number of females was 155,543 (49.4% in Montenegro); therefore the average incidence rate is those eight municipalities is 28.4/100,000 and is higher by 23% than the average rate in Montenegro.

Discussion

There is no a malignant disease registry in Montenegro. Registration and records of malignant diseases are not arranged or complete. The data we have processed were retrieved from various sources. The obligation of all women with malignant disease of the female genital organs to attend the CMDFGO at the Clinical Center in Podgorica has enabled us to analyze the data we have presented (the number of cervical cancer cases and mortalities, distribution by age of disease occurrence, age groups and place of residence-municipalities). It was impossible to analyze the complete data on stage of disease at the time of establishing the diagnosis, manner of treatment, and results of treatment. The majority of cases were treated in other localities in the region, while only a small number were treated in Montenegro. This imposes the need for the Council to keep more complete and quality records.

With good recordkeeping and gathering of all data (starting from initial diagnosis to the therapy prescribed and further monitoring) in one place – Center or Malig-

nant Disease Registry - regular (annual) evaluation of these data would create conditions for undertaking all appropriate measures for resolution of the problem arising from this disease, as is the practice in developed regions of the world.

The aim of well organized screening is to stop the rise in the number of cervical cancer cases, and reduce the number in later stages. It is well known that in the first years of screening the number of disease cases rises (higher number of newly detected cases). Maybe this rise in the number of the cases over the last three years has resulted from incomplete screening that has been conducted in our country. A more aggressive media campaign has been undertaken in the last four years to popularize systematic examinations of women aimed at early detection of cervical cancer.

Our data suggest that the growth in disease rate is more substantial, similar to the average rate in undeveloped countries, than the mortality rate which is like the average rate in developed countries. This might substantiate the assumption presented previously (the result of incomplete screening and media popularization of systematic examinations), while recognized knowledge and protocols are used in treatment which is why the mortality rate has slightly increased.

This paper is aimed at emphasizing the need to organize adequate screening and establish a central cancer registry. Screening should first be conducted with 20-year-old women, i.e., three years after first sexual intercourse. The threshold for screening is mainly 65 years of age, but some still advocate for 70 years of age.

In Montenegro there are 185,000 women aged between 20 and 64 years, i.e., 200,000 women aged between 20 and 69 years. It is quite possible to conduct complete screening of the entire female population once in three years for women aged between 20 and 65 or 70 years. That means that annually 62,000-67,000 women should undergo screening.

Conclusions

Cervical cancer is the most frequent disease of the female genital organs in Montenegro (around 45%).

Cervical cancer incidence in Montenegro shows constant growth.

Over the last three years it has grown from 19-20 to 25-26/100,000.

Almost two-thirds of the disease cases (64.19%) are aged between 40 and 59 years.

Incidence rate is uneven in various municipalities.

It is necessary to organize screening of all women aged between 20 and 65 years (or between 20 and 70 years) and it should be a state-run project.

There is a need to establish a central registry for malignant diseases which would contain all the data starting from initial diagnosis to the results achieved by therapy.

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Address reprint requests to:
B. ČOLAKOVIĆ,
V. ČOLAKOVIĆ-POPOVIĆ
Blaza Jovanovica 33,
81000 Podgorica (Montenegro)
e-mail: darko.popovic@tradecom.cg.yu