
Cervical Cancer - Representation and Management in the Member States of the European Union

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Abstract

The cervical cancer is affecting the lower parts of the uterus. Human papillomavirus is a main reason for developing cervical cancer. The incidence of cervical cancer has been declining in the European Union since the 1980s, with the exception of Eastern European countries that later joined the alliance. In order to prepare this paper, were used data from WHO. Mortality rates are characterized by slower declines in some Eastern European countries or remain consistently high as in Slovakia, Estonia and Bulgaria while Finland, Switzerland and Malta are characterized by lowest morbidity rates. It is currently the fourth most common malignant cancer in women in terms of morbidity and the seventh most common cancer in the general global population. According to data from 2018, from the Global Cancer Registry (Globocan 2018), cervical cancer contributes to 3.2% or 569 847 cases of all newly diagnosed cases of cancer globally, and is responsible for 3.15% of deaths in general of all types of cancer. Among the women diagnosed with cervical cancer between 2010 and 2014, the 5-year survival varies between the member states, from 54% in Latvia to 70% in Denmark. The average five-year survival in the European Union in the last decade has increased from 61% to 63%. Cervical cancer mortality among European Union members decreased from 6.0 in 2000 to 5.1 in 2015. These trends suggest the need for timely and properly developed prevention programs, implementation of organized screenings, early diagnosis and effective treatment for cervical cancer.

Keywords: Cervical cancer, HPV, screening, incidence, mortality.

Introduction

Cervical cancer is a cancer that affects the lower part of the uterus that connects it to the cervix. It can occur in the reproductive period, adolescence period and until menopause. Cervical cancer is caused by the sexually transmitted HPV virus, which is the most common viral infection of the reproductive tract. Almost every sexually active individual will be infected with HPV at some point in their lives, and some may be re-infected with the same or different type of virus.

The symptoms of cervical cancer are non-specific and their intensity depends on the degree of progression of the disease. Vaginal discharge and bleeding from the birth canal are the most common reasons to visit a gynecologist, although they can be symptoms of cancer and are more common in inflammatory reactions of the vagina or some hormonal imbalances. Other nonspecific symptoms of cervical cancer include lower abdominal pain, sacral pain, or pain in

the acetabul of emoral joint of the pelvis. Symptoms such as sudden vaginal bleeding, leukorrhea, dyspareunia (painful intercourse) and dysuria may occur as the disease progresses, and symptoms such as hepatic pain, dyspnea may occur.

Important risk factors for the development of CIN and invasive cervical cancer are: early coitus (early onset of sexual intercourse), more sexual partners, male partner with multiple previous sexual partners, a large number of abortions, persistent infection with oncogenic papilloma–viruses, Herpes Simplex infection Type 2, Chlamydia, HIV, - deficiency of provitamin A, vitamin C and carotenides, positive family history of cervical cancer. Genetic inheritance is responsible for 27% of the risk factors for developing cancer. Heredity can trigger many factors that contribute to the development of cervical cancer, including susceptibility to HPV infection, the body's ability to defend itself against infection, and the time it takes for the disease to develop.

Fifteen of the fourteen types of HPV that invade the genital tract have been shown to be oncogenic, ie types 16, 18, 45, 31, 33, 52, 58, 35, 59, 56, 39, 51, 73, 68 and 66 - sorted by frequency from most common to least common. In contrast, condyloma, which is a benign lesion, is associated with low-risk HPV infection at 6, 11, 42, and 44.

Cervical cancer is classified according to the International Federation of Gynecologists and Obstetricians (FIGO). FIGO classification is based on tumor size, vaginal or parametric involvement, bladder / rectal spread, and distant metastases. Recently, positron emission tomography (RET) has been shown to have the potential to accurately describe the extent of the disease, especially in lymph nodes that are not macroscopically enlarged and distant, with high sensitivity and specificity.

In order to properly prevent and control cervical cancer, multidisciplinary engagement is necessary starting from educational programs, social mobilization, vaccination, screening, treatment and palliative care. [1-13]

Material and methods

For the purposes of the research, data were taken on patients diagnosed with cervical cancer from the World Health Organization – WHO. Additional data was provided by the International Agency for Research on Cancer through the second report on 'Cancer Screening in the European Union' with the participation of 60 experts in the field, from 22 member countries under the supervision of the European Commission. Approximately 67.5 million women from the member states of the union are within the selected age target group of 30-59 years, which is the minimum age range according to many European recommendations. All data taken for cervical cancer (incidence and mortality) in the Member States of the European Union, which are included in this paper, are based on online data collection.

Results and discussion

Table 1. Cervical cancer prevalence in EU countries in 2012.

Table 1.	Cervical cancer prevalence in EU countries in 2012.				
	Number of cases and deaths according to E – ASR				
	Incidence			Mortality	
	Num. of cases 100	X	E – ASR /100 000	Num. of death cases X 100	E – ASR /100 000
Austria	3,6		7,0	1,8	2,8
Belgium	6,4		10,2	2,2	2,7
Bulgaria	12,5		28,5	4,4	8,8
Cyprus	3,3		12,1	1,4	4,3
Croatia	0,3		5,2	0,2	2,5
Czech Republic	10,2		16,3	3,2	4,3
Denmark	3,6		12,1	1,0	2,6
Estonia	1,9		23,3	0,8	8,1
Finland	1,4		4,9	0,5	1,4
France	28,6		8,0	11,7	2,6
Germany	50,0		9,8	15,7	2,4
Greece	4,2		6,2	2,1	2,5
Hungary	11,8		20,5	4,6	6,9
Ireland	3,6		15,1	1,0	4,3
Italy	29,2		7,7	10,2	2,0
Latvia	2,8		20,7	1,4	8,2
Lithuania	6,2		31,6	2,2	9,8
Luxembourg	0,2		7,1	0,1	3,7
Malta	0,1		4,6	0,0	1,1
Netherlands	7,5		8,0	2,4	2,1
Poland	35,1		15,3	18,6	7,4
Portugal	7,2		10,8	3,9	4,9
Romania	43,4		34,9	19,1	14,2
R.Slovakia	6,1		19,4	2,3	6,9
Slovenia	1,4		11,8	0,6	4,1
Spain	25,1		9,1	8,5	2,7
Sweden	4,5		8,6	1,9	2,6
Total	310,2			130,6	

According to the data, in 2012 in the EU were reported over 316 000 cases of cervical cancer. Of these, most cases were reported in Germany – 50.000, Romania = 43.400, Poland – 35.000 and Italy – 29.000 cases. The lowest number of cases were reported in Malta - around 1,000 cases and Luxembourg - 2,000 cases. According to the number of deceased patients, the highest number is recorded in Romania - around 20,000 cases, Poland - 18,000 and Germany - 15,000 cases. The lowest number of deaths is in Malta with less than 10 death cases and Luxembourg with less than 20 death cases. However these are not large countries and according to the population they have a mortality of 1.1/100 000 and 3.7/100 000, respectively. On average, the incidence of cervical cancer in the member states of the European Union for 2012 is 13.6/100 000. The mortality rate for the same year is 4.6. The number of deaths is 131,000.

Table 2. Cervical cancer screening programs in European Union Member States in 2016

Табела 2. Cervical cancer screening programs in the member states of the European Union in 2016						
Population estimates by screening test, program type and status implementation by member states						
Member States	Screening test	Population-oriented screening programs		Non - population oriented screening programs		Total
		Status	Women x 1000	Status	Women x1000	
Austria	Cytology			National	1 859	1 859
Belgium	Cytology	Regional, in progress	1 313	Regional	985	2 289
Bulgaria		No program				1 490
Croatia	Cytology	National, in progress	882			882
Cyprus		No Program				195
Czech Republic	Cytology	National. In progress	2 225			2 225
Denmark	Cytology	National, implemented	1105			1 105
Estonia	Cytology	National, implemented	271			271
Finland	Cytology	National, implemented	1 042			1 042
France	Cytology	Regional, in progress	1 788	Regional	11 279	13 067
Germany	Cytology	National, in the planning stage	16 974	National	16 974	16 974
Greece	Cytology			National	2348	2 348
Hungary	Cytology	National, in progress	2 091			2 091
Ireland	Cytology	National, in progress	986			986
Italy	Cytology	National, in progress	13 187			13 187
Latvia	Cytology	National, implemented	423			423
Lithuania	Cytology	National, in progress	612			612
Luxemburg	Cytology			National	125	125
Malta	Cytology	National, pilot program	18			85
Netherland	Cytology	National, implemented	3 425			3 425
Poland	Cytology	National, implemented	8 330			8 330
Portugal	Cytology	Regional, in progress	1 616			2 293
Romania	Cytology	National, in progress	4 166			4 166
R. Slovakia	Cytology	National, implemented	1 197			1 197
Slovenia	Cytology	National, implemented	440			440
Spain	Cytology			National	10 494	10 491
Sweden	Cytology	National, implemented	1 842			1 842

* Adult target groups in national population-oriented screening programs refer to individuals aged 30-59 years.

* Germany is in the process of planning a population-oriented program based on HPV - test and cytology.

* Although Germany has implemented a non-population-oriented screening program, in this table only the data on the population-oriented program are taken in consideration.

* Malta in the implementation of the pilot program for organized population-oriented screening targets a small age group (25 - 35 years).

Conclusion

Cervical cancer is ranked as the ninth most common cancer among women in Europe and the fourth most common on a global scale. In Europe, there is currently a population of 325.3 million women aged 15 and over at high risk. Among EU member states, the incidence of cervical cancer is generally lower compared to other European countries. However, the differences within the EU between old and new member states are also significant. On average, the incidence of cervical cancer in the European Union member states is 13.6/100 000. The incidence in the old EU14 member states (before May 2004) is 9.9/100 000 while the incidence in the new EU13 member states (after May 2004) is 19.7/100 000. According to the IARC 2012, the incidence of cervical cancer in the member states of the European Union is 13.6/100 000. The mortality rate for 2012 is 4.6. The number of deaths is 131,000.

With the discovery of HPV vaccines, cervical cancer is considered an absolutely preventable disease. To date, three types of HPV vaccines are currently licensed. Cervarix, Gardasil and Gardasil 9. Vaccines are part of the mandatory immunization calendar of 21 European Union member states.

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