

Cervical Cancer in Osijek-Baranja County – Possibilities for Prevention

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ABSTRACT

In Osijek-Baranja County, there was a rise in the number of non-invasive and fall of invasive cervical cancer in the period 2000–2008, but cervical cancer still represents an important public health problem in Osijek-Baranja County. Cervical cancer in 2008 was the ninth female cancer site and represents 3.5% of all malignant diseases in women. In the same year it was also at the ninth place of all cancer deaths in women with a share of 3.3%. The large number of women cervical cancer was detected at an advanced stage of the disease so that there is an increase in mortality from cervical cancer. Although the incidence of cervical cancer is lower in relation to Croatia and other countries in the region, the mortality rate is still higher than in the countries of Western Europe. In order to reduce the incidence and mortality of cervical cancer primary task of the public health system is the introduction of secondary prevention through properly organized screening program. The program should be tailored to the financial and human resources and local specificities, with the agreement on a strategy that will give the best results.

Key words: cervical cancer, incidence, prevention, Osijek-Baranja County

Introduction

By its incidence and mortality, but also a number of etiological knowledge, cervical cancer is a challenge for modern epidemiology, and substantial public health problem in developed and developing countries. Cervical cancer is the third most common cancer in women's site in the world. International Agency for Research on Cancer (IARC) states that in 2008, 529,000 new cases were diagnosed in women in the world (ASRW 15.3/100,000), which is 8.8% of all cancer sites in women (not taking into account the epidermal skin cancers). In the same year 275,000 women died of the disease (ASRW 7.8/100,000), which makes to 8.2% of all deaths from cancer in women, of which 88% relates to the developing countries. In 2008, 54,517 women were affected in Europe from cervical cancer (ASRW 10.5/100,000 and 24,874 women died (ASRW 3.9/100,000). Eastern Europe is the region of the highest incidence and mortality from cervical cancer in Europe¹. In addition to known risk factors for cancer of the cervix new insights into the etiology of this disease opens new opportunities in its prevention and early detection. There is a known link between human papillomavirus (HPV) and cervical cancer, and the

DNA of certain types of HPV is found in almost all cervical cancer biopsies^{2–5}. So far there are more than 120 different types of HPV known one of which is responsible for about 40 anogenital tract infection⁶. Among the latter, about 15 types of HPV (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58 and 59) are the highly oncogenic risk (HR HPV). It is believed that HPV-16 is responsible for about 60% of cervical cancers, and HPV-18 for an additional 10–20%. Knowing that a persistent infection to high-risk types of HPV cause cervical cancer has led to the development of tests based on detection of HPV DNA and a prophylactic vaccine against the two most common high-risk types, HPV 16 and 18. Although the detection of HPV DNA is much more sensitive than cytology, its specificity is lower, because many infections with HPV are transient. Therefore, other methods to improve monitoring of women patients are being considered. Despite the use of vaccines, screening for cervical cancer remains the main method of prevention for women who received the vaccine and those who are not vaccinated, but a way of screening and treatment of women with epithelial changes are adapted to new technologies^{7,8}. Historically the

most important and generally one of the most effective method of early detection of cancer is cervical screening by Papanicolaou smear^{9–12}. Some developed countries in the 1960s and the 1970s began with a centrally organized programs at the local and regional level, and the first national programs have been introduced in Iceland in 1969 and in Finland 1970th^{13,14}. The result of these measures is the decline in incidence and mortality in these countries by about 80%. The lowest incidence rate of cervical cancer in Europe is in Finland (ASRW in 2007 was 3.7/100,000), and Finland also has the lowest mortality rate from cervical cancer (ASRW 2007 was 0.7/100,000)¹⁵. However, despite examples of good practice, opportunistic screening is still prevalent in most European countries, most low-income countries around the world can not provide the necessary conditions for investment and for implementing organized programs¹⁶. The development of clinical cytology and primary health care have made possible the mass deployment of Pap test results in Croatia in the 60-ies and the opportunistic screening very early led to a reduction in the incidence of and mortality from cervical cancer, but further decline after 1991 has not been observed^{17–19}. Croatia does not have an organized national screening program of cervical cancer, but following recommendations for screening the cervical cancer in Europe, a Working Group of the Croatian Ministry of Health and Welfare has made it and its onset is expected^{20,21}.

Materials and Methods

Public Health Institute of Osijek-Baranja County is an institution that has been, developing modern technologies and tools for monitoring malignant disease in the last couple of years. Register of malignancies is performed on the model of the world’s leading registries where they insist on a large scope of pathohistologically and cytologically verified disease. In addition, special attention has been devoted to the monitoring of non-invasive cervical cancer (ICD-10 code D06), and deaths from malignant disease for the purpose of which special technologies and tools for working with databases have been developed, enabling a high quality of information. Completed the information were forwarded to the Croatian

Cancer Registry. To view the mortality rate from cervical cancer, we used data from the Croatian Bureau of Statistics from 2000–2008 (ICD-10 code C53), and to show the incidence of invasive cervical cancer in the Osijek-Baranja county, we used data Croatian Cancer Registry. The age-specific rates were calculated for the period 2000–2008, we used a Croatian population census for 2001²². Age-standardized incidence rates and mortality of cervical cancer were calculated by direct method of standardization, using the World standard²³. Statistical analysis was performed using SPSS version 13.

Results

In the period 2000–2008 260 cases of invasive cervical cancer (ICD-10 code C53) were registered in Osijek-Baranja County, and 754 cases of non-invasive cervical cancer (ICD-10 code D06). The ratio of non-invasive and invasive cervical cancer in the period was 74:26. There are significant differences based on age reporting. 84.7% of all cases of non-invasive cervical cancer occurs between the ages of 15–50 with the highest age-specific rates at the ages 30–34. The rate significantly decreases at the age 55–59, followed by an average of 15.0/100,000 women.

In contrast age-specific rates of invasive cervical cancer gradually increase with the age ranging from 20–24 with the highest rate at age 45–49 and 80–84 years. After 50×th year the age-specific rates are not reduced significantly and are at the average of 24.0/100,000 women. Out of the total number of women with cervical cancer 32% are at the age 65 and older (Figure 1).

From 2000–2008 in Osijek-Baranja County 105 women died of cervical cancer. Mortality from cervical cancer increases gradually with age, particularly after the age of 35 and 55 years with the highest rate at age 80–84 years and almost as a rule follow incidence rates. 80% of deaths in the period of follow-up were at the age 50 and older (Figure 2).

In the ninth year reporting period, age-standardized rate (ASR World) incidence of invasive cervical cancer was 11.5/100,000 and shows a declining trend and age-stan-

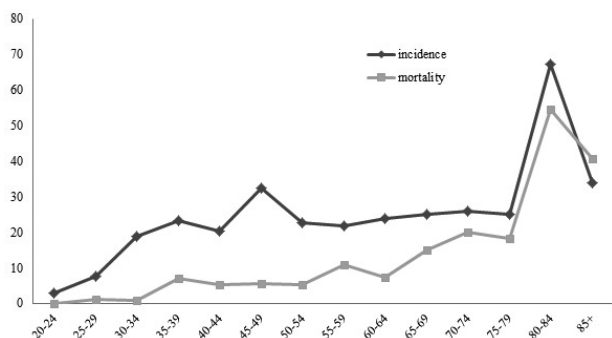


Fig. 2. Average age-specific incidence and mortality rates of invasive cervical cancer in Osijek-Baranja County, 2000–2008.

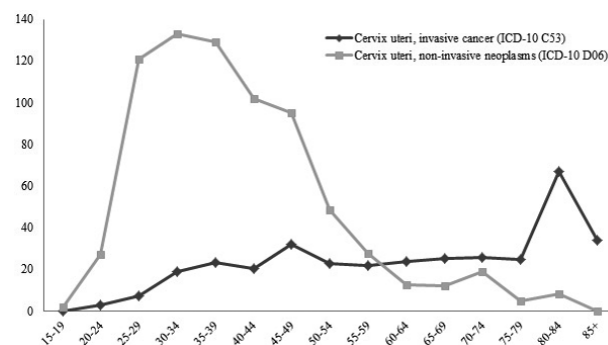


Fig. 1. Average age-specific incidence rates of invasive cervical cancer (ICD-10 C53) and non-invasive cervical neoplasms (ICD-10 D06) in Osijek-Baranja County, 2000–2008.

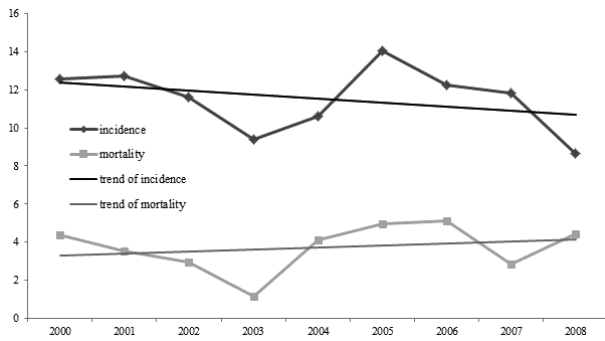


Fig. 3. World age-standardised rates (ASRW per 100,000 women-year) of cervical cancer incidence and mortality in Osijek-Baranja County, 2000–2008.

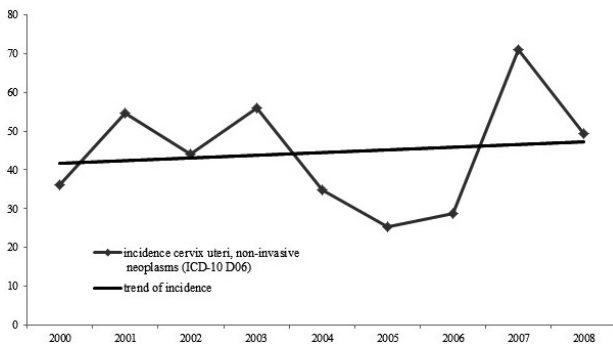


Fig. 4. World age-standardised rates (ASRW per 100,000 women-year) incidence of cervical non-invasive neoplasms (ICD-10-D06) in Osijek-Baranja County, 2000–2008.

standardized rate (ASR World) mortality was 3.7/100,000 and shows an increasing trend (Figure 3).

At the same time there is an increasing trend of non-invasive cervical cancer (ICD-10 code D06), age-standardized rate (ASR World) incidence was 44.5/100,000 (Figure 4).

Out of 260 cases of invasive cervical cancer according to histological picture did 78.5% were the squamous cell carcinoma, 20.7% adenocarcinoma and 0.8% small cell neuroendocrine tumor.

In this period according to the stage of the disease was localized found disease (I) in 36.1% of cases, advanced cervical cancer (II–IV) in 60.8%, and an unknown stage of disease in 3.1% (Table 1).

Discussion

Cervical cancer is a disease which in theory should not be allowed to develop in any women nowadays, just as no woman should die of it. The cervix is an organ available for direct visualization at the gynecological examination, and with effective methods of detecting precancerous lesions and organized screening program, about 80% of cervical cancers can be detected in the

TABLE 1
DISTRIBUTION OF PATIENTS WITH INVASIVE CERVICAL CANCER IN RELATION TO STAGE OF THE DISEASE REGISTERED IN THE OSIJEK-BARANJA COUNTY (2000–2008)

Stage of disease	N	%
I	94	36.1
II	100	38.4
III	44	17.0
IV	14	5.4
unknown	8	3.1
total	260	100.0

preinvasive stages and thus reduce the incidence of and mortality from cervical cancer²⁴.

In Osijek-Baranja County an opportunistic screening is present, which led to an increase in the number of non-invasive and fall of invasive cervical cancer in the period 2000–2008, but cervical cancer is still an important public health problem in the Osijek-Baranja County. Cervical cancer in 2008 was the ninth female cancer site and represents 3.5% of all malignant diseases in women, and in the same year it was also at the ninth place of all cancer deaths in women with a share of 3.3%. The large number of women's cervical cancer was detected at an advanced stage of the disease leading to the increase in mortality from cervical cancer²⁵. Although the incidence of cervical cancer is lower in relation to Croatia and other countries in the region, the mortality rate is still higher than in the countries of Western Europe²⁶.

The reasons for such a situation are partly of systemic nature, and partly a lack of awareness of women about the importance of preventive and periodic examinations by gynecologists. A small number of preventive examinations in the observed period, which shows no increase trend, the result of passive behavior at the level of primary health care due to lack of defined institutional status and inadequate financial evaluation of preventive activities. A small number of preventive examinations is present in all age groups, especially between the ages 50 and older. Although the selection of a gynecologist at the primary level health care is free in the Osijek-Baranja County, about 20,000 women have no gynecologist, most by women older than 50 years. Of the total number of women who chose their gynecologist in primary health care about 51% of them annually visited a gynecologist. Number of Pap test was in 2008. year for the Osijek-Baranja County 30,562 (rate was 401.1/1,000 women of reproductive age), of which 4.1% were pathological, but it can not be distinguished how many were taken for screening²⁷. Current status and results of public health campaigns in Croatia indicate that opportunistic screening of the Pap test is often unevenly distributed among the women. Some are not at all or are rarely tested while others are tested more frequently than recommended²⁸.

One of the main problems in the organization of prevention programs is to increase the turnout of people for

screening. The introduction of preventive examinations in family medicine in 2004 for people aged 50 years who have not visited selected a doctor 2 or more years and in 2007 the introduction of mammography screening programs and early detection of colon cancer at the national level, we expected that the awareness of the importance of preventive measures in health will increase. But the analysis of the implementation of these programs indicates that women in the Osijek-Baranja county perceive in health Segments, for example, respond to mammography screening, but do not go to the Pap test²⁹.

In this respect at the level of primary health care it is necessary to develop an integrated model of implementation of preventive examinations and health promotion in women. In this model, the gynecologist should be networked with the teams of family physicians and visiting service. The cooperation with family physicians and health visitor service is of great importance, because they have good cooperation with the community and are familiar with local conditions. The previous implementa-

tion of this model in the Osijek-Baranja county shows good results, which can be great if preventive measures are institutionally defined by rules and adequately evaluated in time, personnel and finances^{30–33}.

Although the vaccine against human papillomavirus (HPV) is a much expected launch of the national vaccination program it is possible only in countries with well-organized programs of secondary prevention and in those who can afford it⁸.

Conclusion

In order to reduce the incidence and mortality of cervical cancer primary task of the public health system is the introduction of secondary prevention through properly organized screening program. The program should be tailored to the financial and human resources and local specificities, with the agreement on a strategy that will give the best results.

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RAK VRATA MATERNICE U OSJEČKO-BARANJSKOJ ŽUPANIJI: MOGUĆNOSTI ZA PREVENCIJU

S A Ž E T A K

U Osječko-baranjskoj županiji, došlo je do porasta broja neinvazivnog i pada invazivnog raka vrata maternice u razdoblju 2000–2008, ali rak vrata maternice i dalje predstavlja važan javno zdravstveni problem u Osječko-baranjskoj županiji. Rak vrata maternice u 2008 bio je deveto sijelo raka u žena, a predstavlja 3,5% svih malignih bolesti kod žena. U istoj godini on je također na devetom mjestu od svih smrti od raka u žena s udjelom od 3,3%. Velikom broju žena rak vrata maternice je otkriven u poodmakloj fazi bolesti, tako da imamo povećanje smrtnosti od raka vrata maternice. Iako je incidencija raka vrata maternice niža u odnosu na Hrvatsku i druge zemlje u regiji, stopa smrtnosti još uvijek je viša nego u zemljama zapadne Europe. Kako bi se smanjila incidencija i smrtnost od raka vrata maternice primarna zadaća javnog zdravstvenog sustava je uvođenje sekundarne prevencije kroz pravilno organiziran program probira. Program treba prilagoditi financijskim i kadrovskim resursima kao i lokalnim specifičnostima, uz postizanje dogovora oko strategije koja će dati najbolje rezultate.