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Professional paper

Cervix Cancer Screening in Croatia within the European Cervical Cancer Prevention Week

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A B S T R A C T

Croatia still has opportunistic screening and the organized national screening has been planned. The European Cervical Cancer Prevention Week was held twice in Croatia, in January 2008 and 2009. Within the first one in 2008, information campaign »For All Women« via mass media was held, and women were invited to the organized free gynecological examination and Papanicolaou test (Pap test) in the University Department of Gynecology and Obstetrics, Zagreb University Hospital Center. Following invitation 481 women attended the testing; the median age was 55 years. There were more women aged ≥50 (n=353), with the highest participation in the age group 55–59 years (n=94). Some women came because of subjective symptoms (n=10), but the majority of them came only for testing (n=471). According to history of previous cytological testing, 400 women have had ≥1 negative findings, 71 women have had ≥1 positive findings, 9 women attended Pap test for the first time, and 1 woman does not know about previous testing. Cervical cytology was abnormal in 35 women (7.28%), the median age was 42 years with the highest proportion in the age group 30–34 years (n=7); among all of them 21 women (60%) had no abnormal Pap test previously. The findings were: Atypical squamous cells of undetermined significance – ASC-US (n=9), ASC cannot exclude high-grade squamous intraepithelial lesion – ASC-H (n=1), cervical intraepithelial neoplasia – CIN 1 (n=13), CIN 2 (n=1), CIN 3 (n=6), carcinoma planocellulare (n=2), atypical glandular cells – AGC-favor reactive endocervical cells (n=3). Among women aged ≤49 there were 20.47% abnormal findings and among those aged ≥50, 2.55%. According to ≥1 positive Pap tests previously, among women aged ≤49 there were 30.71% while among those aged ≥50 there were 9.07%. Within the European Cervical Cancer Prevention Week in 2009, employed women from one national company were invited by internal information to the same procedure. A smaller group of younger asymptomatic women came for testing (n=53), median age 39 years. According to history of previous cytological testing, 50 women have had ≥1 negative findings, 3 women have had ≥1 positive findings. In this study, Pap test was positive in 3.77% (n=2). National screening programme should be focused on the participation of all personally invited women, especially younger age groups and under-screened women. Well designed information campaign should be implemented in national screening programme.

Key words: *Pap test, cervical cancer, prevention, organized cervical screening*

Introduction

Cancer of the uterine cervix is an important cause of morbidity and mortality among women worldwide and a leading public problem. Because of the phases that precede the lesion in the natural progress of invasive cervical

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cancer, and because they can be easily discovered and treated, the disease is well suited to screening programs. The Papanicolaou (Pap) test is an established method for examining the cells collected from the cervix to determine whether they show signs of pre-neoplastic differentiation[1]. George Papanicolaou described a method of cervical cancer diagnosis by cellular smear in 1928 and later on he published two studies about the clinical use of this test in 1941 and 1943[2–4]. The American Cancer Society endorsed the Papanicolaou smear (Pap test) in 1945[5]. Since then the method was introduced all over the world. Centrally organized screening programmes started in some developed countries in the 1960s and 1970s and they were mostly local and regional programmes[6]. The first national programmes started in Iceland 1969[7] and Finland 1970[8]. However, opportunistic screening is still predominant in most European countries. Incidence and mortality have decreased in the last decades in the northern European countries with organized screening programmes, even more than 80%. In general, incidence and mortality have declined in most of Europe. The cervical cancer incidence varies in the different countries and parts of the world, with age standardized (world) rate (per 100 000) from >9.3 to <93.9[6,9].

In Croatia Pap test was introduced in 1953[10]. Croatia still has opportunistic cervix cancer screening and the national screening programme has been planned[10–14]. Pilot studies have been also performed in Croatia for more than forty years[15,16]. The incidence rates of cervical cancer (per 100 000) in Croatia in 2006 were as follows: crude rate 14.9; age-standardized (EU) rate 13.39; age--standardized (W) rate 10.59. In 2006 there were 343 new cases, and it was ranking eighth among cancer sites in females. In the same year there were 458 new cases of carcinoma in situ, and Ca in situ-invasive cancer ratio was 57:43[17].

The European Cervical Cancer Association (ECCA) was established in 2003 to promote the implementation of organized cervical cancer programmes equitably across Europe as a whole. European Cervical Cancer Prevention Week has been organized by the ECCA annually in January, since 2007. It represents a number of actions and public activities which promote awareness of cervical cancer as a public health problem and the need of prevention, and it is focused on the population as well as politicians[18].

The European Cervical Cancer Prevention Week was held twice in Croatia, in 2008 and 2009. The ECCA launched the Pearl of Wisdom Cervical Cancer Prevention Awards on January 21, 2009, and among eight awards one was presented to: »The people of Croatia for their incredible efforts in hosting one of the most successful Cervical Cancer Prevention Weeks of any European country in January of 2008. The range of actions and the amount of awareness generated were phenomenal and the number of signatures collected for the STOP Cervical Cancer Petition was one of the best in Europe«[19].

The aim of the study was to evaluate the outcome of information campaign and of public invitation to participation in organized screening.

Patients and Methods

Among other public activities during The European Cervical Cancer Prevention Week in 2008, the information campaign »For All Women« via mass media was held. Women were invited to an organized free gynecological examination and cytological testing in University Department of Gynecology and Obstetrics, Zagreb University Hospital Center. After invitation, 481 women attended the cervical cytological (Pap) testing. In 2009, during another prevention week in Croatia, women employed in one national company were invited by internal information to the same procedure, and 53 women came for testing. In both studies women were invited to the examination during two weeks. The standard Pap test was performed and interpreted following the Zagreb 2002 classification[20].

Results

In 2008, there were 481 women aged 18–85, median age 55 years (n=480, age data for 1 woman missing), the highest participation was in the age group 55–59 years (n=94). Some women came because of subjective symptoms (n=10), but the majority of them came only for testing (n=471). According to history of previous cytological testing, 400 women (83.16%) have had ≥1 negative finding, 71 women (14.76%) have had ≥1 positive finding, nine women (1.87%) came to testing for the first time, and one woman (0.21%) does not know about previous testing (Table 1).The entire group of women (n=480) can be divided into two age groups, women aged ≤49 (n=127) and women aged ≥50 (n=353). These two groups were substantially different according to the percentage of women with ≥1 positive cytological finding previously (Table 2).

In our study abnormal cervical cytology was found in 35 (7.28%) women, aged 23–70, the median age 42 years, with the highest proportion in the age group 30–34 years (n=7). Among women aged ≤49 (n=127) there were 26 (20.47%) abnormal findings and among those aged ≥50 (n=353) there were 9 (2.55%) abnormal Pap tests (Table 3).

TABLE 1
»FOR ALL WOMEN 2008« – PREVIOUS CERVICAL CYTOLOGICAL FINDINGS (PAP TESTS)*

Pap tests	N	%
≥ 1 negative	400	83.16
≥ 1 positive	71	14.76
Never screened	9	1.87
Not sure	1	0.21
Total	481	100.00

*data source – interview

TABLE 2
»FOR ALL WOMEN 2008« – PREVIOUS ≥1 POSITIVE PAP TEST ACCORDING TO AGE

Age	N	Previous ≥1 positive Pap tests	
		N	%
≤49	127	39	30.71
≥50	353	32	9.07
Total	480	71	14.79

Among women with ≥1 negative cytological finding previously (n=400) there were 21 abnormal smears (5.25%). Among women with ≥1 positive cytological finding previously (n=71) there were 14 abnormal smears (19.72%). Among women who came for the first time to cytological testing (n=9) and do not know about previous testing (n=1) all the smears were negative (Table 4). Further biopsy in our hospital was performed in 4 patients. The histological finding was cervical intraepithelial neoplasia (CIN) 3 in 2 cases after abnormal cytological findings, i.e. atypical squamous cells-cannot exclude high-grade squamous intraepithelial lesion (ASC-H) and CIN 3. The histological finding was negative in 2 cases after cytological findings CIN 1 and carcinoma planocellulare. The review of these two smears confirmed abnormal cytological findings in both cases.

In 2009, there were 53 women aged 25–54, the median age 39 years (n=52, age data for 1 woman missing), and the highest participation was in the age group 35–39 years (n=17). All the women who came for testing had no symptoms. According to history of previous cytological testing, there were 50 women (94.34%) with ≥1 negative finding, and 3 women (5.66%) with ≥1 positive finding. In this study, cervical cytology was abnormal in 2 women (3.77%). In one case the cytological finding was CIN 1 of a woman aged 30, and in the other case it was atypical glandular cells (AGC)-endocervical for a woman whose age data is missing; both women had ≥1 negative cytological findings previously. There were no biopsies performed in our hospital afterwards. Among women with ≥1 negative cytological findings previously (n=50) there were 2 abnormal smears (4.00%), and among women with ≥1 positive cytological finding previously (n=3) there were no abnormal smears.

TABLE 4
»FOR ALL WOMEN 2008« – POSITIVE PAP TESTS ACCORDING TO THE PREVIOUS CYTOLOGY

Previous cytology	N	Positive Pap test	
		N	%
≥1 negative Pap test	400	21	5.25
≥1 positive Pap test	71	14	19.72
Came for the first time	9	0	0.00
Not sure	1	0	0.00
Total	481	35	7.28

Discussion

There is sufficient evidence that screening by conventional cytology has reduced cervical cancer incidence and mortality rates. Well organized screening programmes are more cost-effective with a greater impact than opportunistic screening because they can achieve greater participation and coverage of the target population, especially women at higher risk, with less harm due to overscreening and overtreatment[6].

Within the campaign »For All Women« in 2008, there were almost 3 times more women aged ≥50 than those aged ≤49. The percentage of women with previous ≥1 ab-

TABLE 3
»FOR ALL WOMEN 2008« – CYTOLOGICAL FINDINGS OF THE PAP TEST

Age group	ASC-US	ASC-H	CIN 1	CIN 2	CIN 3	Carcinoma planocellulare	AGC favor reactive endocervical	TOTAL
20–24			1					1
25–29	2		1	1	1			5
30–34	2		3		2			7
35–39	2				1		1	4
40–44	1		1		1		2	5
45–49	1		2		1			4
50–54			2			1		3
55–59			1					1
60–64	1	1	1			1		4
65–69								0
70–74			1					1
Total	9	1	13	1	6	2	3	35

ASC-US – atypical squamous cells of undetermined significance, ASC-H – ASC cannot exclude high-grade squamous intraepithelial lesion, CIN – cervical intraepithelial neoplasia, AGC – atypical glandular cells

normal smears was about 3 times higher in the women aged ≤49 than in the older group, as well as in our study, i.e. the percentage of abnormal Pap smears was even about 8 times higher in the younger group (aged ≤49). Within the Prevention Week in 2009, the invitation was announced in a national company, and a smaller group of younger women came for cervical testing. Comparing the results of these two groups (in 2008 and 2009), the proportion of women with ≥1 positive cytological findings previously was substantially higher in the first study (14.76% to 5.66%) as well as the percentage of abnormal smears (7.28% to 3.77%), i.e. almost 2 times higher than in the second study.

The relative participation of younger women in 2008 was low, and among them there were a higher percentage of women with ≥1 positive findings previously, probably associated with greater exposure to risk factors. Thus, the young women should be planned as the target screening population, as well[6,21]. However, according to the outcome of our study, the awareness of cervical cancer prevention is better presented among older women.

In our study there were very few un-screened women. Pap testing is often unevenly distributed among women, with many of them not screened at all or under-screened and other screened more frequently than recommended. Over-testing is high in opportunistic screening[6]. The outcome of campaign »For All Women« reflects the situation in countries with opportunistic screening[22–25], because there were much more already screened women including high proportion of those with ≥1 positive test previously. Within the future organized screening programme in Croatia the mass media campaigns and public activities should be focused to reach younger age groups, women at risk and under-screened women, with aim to achieve the high coverage of target population. Personal invitations with determined time and place of free testing should be effective if the awareness of cancer risk and cancer prevention is present among all women.

In Belgium, reported coverage of screening reached only 59% but the number of the smears used was sufficient to cover more than 100% of target population[22]. In Croatia, the number of Pap tests taken yearly reached 433 671 in 2005, but it is clear that a large proportion of target population remains un-screened and under-screened[23]. The population coverage by opportunistic screening was assessed in the Osijek-Baranja County in Croatia, and it was 68% for the target population of women aged 25–64, that should be examined once in three years[11].

The proportion of positive Pap tests in screening differs depending on the screened population[6]. In our study, we found an overall rate of positive cytology being 7.28% (in 2008) and 3.77% (in 2009), but the proportions of positive tests were different according to the age and to the history of cervical cytology. Reported results of National Breast and Cervical Cancer Early Detection Program (NBCCEDP) showed that the prevalence of abnormal cytological findings (squamous intraepithelial lesion – SIL and carcinoma) was 3.8%[26].

In Croatia, the age-standardised cervical cancer incidence rates show a decreasing trend until the year 1991 but no further consistent decrease has been observed afterwards[23]. The similar time trends are observed in many developed countries, and this reflects the increasing prevalence of human papillomavirus infection, mostly in younger age groups[6]. Mass media campaigns combined with other strategies have been effective at increasing either screening rates or early cancer detection[27].

Conclusion

The future national screening programme should be focused on the high participation of personally invited women, especially younger age groups and under-screened women. The well designed information campaign should be implemented in national screening programme.

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PROBIR RAKA VRATA MATERNICE U HRVATSKOJ TIJEKOM EUROPSKOG TJEDNA PREVENCIJE RAKA VRATA MATERNICE

S A Ž E T A K

Hrvatska još uvijek ima oportunistički probir raka vrata maternice, premda se unazad nekoliko godina planira organizirani nacionalni probir. Europski tjedan prevencije raka vrata maternice održao se dva puta u Hrvatskoj, u siječnju 2008. i 2009. godine. Tijekom prvoga od njih provela se promidžbena akcija »Za sve žene« putem masovnih medija, te su žene bile pozvane na organizirani besplatni ginekološki pregled i Papa test u Klinici za ženske bolesti i porode Kliničkog bolničkog centra Zagreb. Nakon poziva došla je 481 žena srednje dobi 55 godina. Bilo je više žena dobi ≥50 (n=353), s najvećim udjelom u dobnoj skupini 55–59 godina (n=94). Neke žene su došle zbog subjektivnih simptoma (n=10), a većina je došla zbog preventivnog pregleda i Papanicolaou (Papa) testa (n=471). S obzirom na prethodnu citološku anamnezu, 400 žena imalo je ≥1 negativan citološki nalaz, 71 je imala ≥1 pozitivni citološki nalaz, 9 ih je prvi put pristupilo Papa testu, a 1 žena ne zna. Citološki nalaz bio je pozitivan u 35 žena (7,28%), srednje dobi 42 godine, s najvećim udjelom u dobnoj skupini 30–34 godine (n=7). Abnormalni citološki nalazi bili su: atipične pločaste stanice neodređenoga značenja – engl. ASC-US (n=9), atipične pločaste stanice – ne može se isključiti skvamozna intraepitelna lezija visokog stupnja – engl. ASC-H (n=1), cervikalna intraepitelna neoplazija CIN 1 (n=13), CIN 2 (n=1), CIN 3 (n=6), Carcinoma planocellulare (n=2), atipične glandularne stanice (engl. AGC) – endocervikalne, vjerojatno reaktivne promjene (n=3). Među ženama dobi ≤49 godina bilo je 20,47%, odnosno u dobi ≥50 godina 2,55% abnormalnih citoloških nalaza. Međutim kod žena dobi ≤49 godina bilo je 30,71% s prethodno ≥1 pozitivnim citološkim nalazom, a u skupini dobi ≥50 godina bilo ih je 9,07%. Tijekom Europskog tjedna prevencije raka vrata maternice 2009. godine poziv je upućen internom obavijesti ženama zaposlenima u jednoj nacionalnoj kompaniji. Došla je manja grupa mlađih žena (n=53), srednje dobi 39 godina. Sve su bile asimptomatske, a abnormalni Papa test nađen je u 3,77% (n=2). Nacionalni program probira mora se usmjeriti na odaziv svih osobno pozvanih žena, osobito mlađih dobnih skupina i nedovoljno skriniranih žena. Promidžbena akcija mora se aktivno provoditi u sklopu nacionalnog programa probira.