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## CERVICAL CANCER IN POLAND: AWARENESS, SURVIVAL AND THERAPY. POPULATION BASED STUDIES

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*For the purpose of finding the reasons for the slow changes in the mortality trend among cervical cancer patients, the awareness, survival and therapy were studied. After 26 years of observation, Polish women's knowledge of secondary prevention in cervical cancer has improved in a significant way. The behaviour of women has also slightly improved. Above finding and the low 5-year survivals, large proportion of unfavourable clinical stages on the first diagnosis, the small number of cancer cases eligible for radical treatment and the delays in radiotherapy found in epidemiological and clinical studies, offers some explanation for the observed slow change in the mortality trend.*

*Key words: cervical cancer; unchanged mortality, prognostic factors*

*Słowa kluczowe: rak szyjki macicy; niezmienna umieralność, czynniki prognostyczne*

Cervical cancer is a major health and social problem in Poland as it is the third cause of cancer-related deaths in women, after breast and lung cancer. It was responsible for 5.4% of all cancer deaths in women in 2000. During the years 1980-2000 incidence rates declined from  $25.2/10^5$  to  $20.1/10^5$ <sup>1</sup>, whereas mortality hardly changed from  $10.9/10^5$  to  $10.0/10^5$ <sup>2</sup> (1,2).

The aim of the first study was to measure women's knowledge about cytological testing (PAP) during the years 1976-2002, to find out how many women actually have these tests done, and how many visit a gynaecologist afterwards. The results of this study will help to evaluate the role of public education in the secondary prevention of cervical cancer. The paper also presents epidemiological and clinical studies as well as practical activities undertaken recently to solve the problem of cervical cancer in Poland.

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<sup>1</sup> Data corrected according to the level of under registration.

<sup>2</sup> Crude rate.

## MATERIAL AND METHODS

Data on women's awareness and behaviour were obtained by five questionnaire surveys carried out in 1976, 1986, 1990, 1998 and 2002 on comparable random samples of Polish females aged over 18 years. The sizes of the sample in the study years were, respectively, 1,035, 460, 455, 524, and 509. The results were correlated with demographic and social features of the respondents<sup>3</sup>.

The epidemiological situation of cervical cancer was presented using data collected by the National and Warsaw Cancer Registries or were taken from relevant literature (1, 2).

To identify reasons why cervical cancer mortality trends are hardly improving, the 5-year survivals and the impact of prognostic factors were evaluated on the population basis covering 10% of inhabitants of Poland. Data comprised all cervical cancer cases (1386 women) diagnosed in 1990-1996 as a first malignancy and registered in Cancer Registries in Kielce, Opole and Warsaw. Data were standardized according to WHO recommendation, to make them comparable over time and populations. The life table method was employed for calculation of the relative 5-year survival rates. The software SURV2 was used, for computing the 5-year survivals. This software was purposely designed for the analysis of cancer registries base data, when the cause of death is usually unknown. The multivariate regression analysis modified by Hakulinen and Tenkanen (3,4), was employed for calculating the relative excessive risk of death (RER). This method allows evaluation of the difference between risk of death in the study population and in the reference population. Prognostic factors incorporated in the analyses included stage of disease (FIGO classification) histopathological diagnosis and place of residence (5).

Data from the medical records of the subgroup of patients treated radically from the same regions (783 women), was examined, using the same statistical approach to evaluate standard of treatment: the frequency of type of treatment applied (surgery and radiotherapy alone or in combination) and treatment delay (6).

## RESULTS

As many as 91% of women in 2002 claimed awareness of the importance of cytological tests, in comparison with 88% in 1998, 75% in 1990, 65% in 1986 and 31% in 1976. The difference is significant for the entire period ( $p < 0.0001$ ). Throughout the study years, the rate of the best informed women was highest among the university-educated, white collar workers, aged 25-39 or 40-59, and among city dwellers. Women aged 16-24 or over 60, unqualified farm workers, women with primary education and those living in the country, claimed any such knowledge less frequently (table I).

33% of the respondents saw a gynaecologist in 1976, 36% in 1986, 37% in 1990, 45% in 1998, and 46% in 2002. The difference between the first and the last year's figures is significant ( $p < 0.0001$ ), but the trend is not significant. The demographic and social featu-

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<sup>3</sup> The survey were conducted by the Public Opinion Research Center especially for Cancer Center according to the program, questionnaire and plan of correlation. The questions were as follow: "Have you heard about PAP test?", – "When were you last time to visit the gynaecological clinic?", "When did you the last PAP test?".

Table I. Women who declared having knowledge about cytological test by social and demographic factors. Poland, 1976, 1986, 1990, 1998 and 2002

Tabela I. Kobiety, które deklarowały wiedzę o badaniach cytologicznych wg czynników społecznych i demograficznych. Polska, 1976, 1986, 1990 i 2002 r.

Social-demographic factors	Years									
	1976		1986		1990		1998		2002	
	number in sample	%	number in sample	%	number in sample	%	number in sample	%	number in sample	%
Age groups										
18 – 24	236	25	95	46	97	65	69	84	74	87
25 – 39	262	40	101	89	97	88	137	97	129	92
40 – 59	321	41	170	79	170	85	174	94	177	94
60 +	216	18	94	44	91	63	144	79	129	88
Level of education										
primary	798	18	208	37	206	58	201	85	255	86
secondary	188	34	195	76	196	75	275	91	208	95
university	49	42	57	83	53	91	48	98	45	95
Place of living										
village	426	18	173	42	170	61	189	85	181	92
town up to 20,000	151	24	61	55	51	79	64	82	67	90
town from 20,000 to 100,000	184	39	87	77	85	81	104	93	104	92
town over 100,000	274	43	139	86	54	81	167	91	156	89

res of the respondents showed a similar distribution to the previous question (table II). In 1986, 38% of the respondents said they had a cytological test done during the past 3-4 years; 43% claimed this in 1990, 45% in 1998 and 2002 (no determination in 1979). The difference between the figures of the first and last year under study is significant ( $p < 0.05$ ). Patterns of demographic and social features were also analogous to the two previous questions (table III).

Results of the study of the age-standardized relative 5-year survivals indicate that the selected regions differed significantly in stage distribution. However, they were similar in age group and histological diagnosis. The overall survival rate was 52.2%, and was among the lowest in Europe (the average survival rate for 1990-94 was 62.1% (7)). The rate in Kielce region was 60.7%, in Warsaw 51.9%, and in the Opole region 43.3%. An analysis of survivals by disease stage showed that the 5-year survivals of patients diagnosed with stage I disease were fairly close to each other in the three regions, all about 80%, but were different for stage II and higher. There was a significant increase in risk related to advancing disease stage ( $p < 0.0001$ ), living in Opole region ( $p < 0.05$ ) and to adenocarcinoma diagnosis ( $p = 0.05$ ). This implies different standards of diagnosis and treatment in those regions.

The study included clinical data, based on 738 patients from the same regions revealed that patients received curative clinical data treatment, mostly radiotherapy (54%), or sur-

Table II. Women who declared having visited a gynaecologist in the recent year, by social and demographic factors. Poland, 1976, 1986, 1990, 1998 and 2002

Tabela II. Kobiety, które deklarowały wizytę u ginekologa w ostatnim roku wg czynników społecznych i demograficznych. Polska, 1976, 1986, 1990, 1998 i 2002 r.

Social-demographic factors	Years									
	1976		1986		1990		1998		2002	
	number in sample	%	number in sample	%	number in sample	%	number in sample	%	number in sample	%
Age groups										
18 – 24	236	35	95	36	97	34	69	67	74	61
25 – 39	262	45	101	54	97	53	137	61	129	61
40 – 59	321	40	170	42	170	36	174	48	177	49
60 +	216	12	94	12	91	16	144	17	129	19
Level of education										
primary	798	20	208	22	206	23	201	31	255	33
secondary	188	40	195	43	196	43	275	53	67	56
university	49	41	57	45	53	39	48	65	45	74
Place of living										
village	426	28	173	42	170	28	189	39	181	44
town up to 20,000	151	34	61	55	51	38	64	47	67	48
town from 20,000 to 100,000	184	35	87	77	85	41	104	53	104	45
town over 100,000	274	35	139	86	54	41	167	48	156	49

gery combined with radiotherapy (40%). Surgery standalone was applied in only 6% of patients. Patients from different regions were being treated by different protocols and up-to-date diagnostic procedures were not applied widely. The analysis showed that factors responsible for significant increase of the RER included: advancement stage of disease ( $p < 0.0001$ ), delay in treatment more than 60 days ( $p < 0.05$ ), and Kielce or Opole domicile in comparison to Warsaw ( $p < 0.05$ ).

## DISCUSSION

The study has revealed a positive trend in the percentage of women claiming knowledge about cytological testing during the years 1976-2002. It is likely that this has resulted from public education campaigns, because information about the importance and availability of cytological testing was constantly propagated by all mass media channels: television, radio (approx. once a week) and health and women magazines (approx. once a month). A special leaflet for women on this subject had been issued in at least 500,000 copies (then reprinted by many local health services several times). Education was also provided countrywide for family doctors and nurses. In 1982-2002 there were several prophylactic programmes in Poland. For example, UNDP (United Nations Development Program) 1982-1990; Polish Cancer Control Program for Women 1990-1993; Polish Anticancer Commit-

Table III. Women who declared having a cytological test done during the last 3 years, by social and demographic factors. Poland, 1986, 1990, 1998 and 2002

Table III. Kobiety, które deklarowały, że miały wykonane badanie cytologiczne w ciągu ostatnich trzech lat wg cech społecznych i demograficznych. Polska, 1986, 1990, 1998 i 2002 r.

Social-demographic factors	Years							
	1986		1990		1998		2002	
	number in sample	%	number in sample	%	number in sample	%	number in sample	%
Age groups								
18 – 24	95	18	97	30	69	35	74	23
25 – 39	101	54	97	61	137	66	129	60
40 – 59	170	52	170	45	174	52	177	58
60 +	94	18	91	30	144	21	129	23
Level of education								
primary	208	20	206	24	201	31	255	32
secondary	195	40	196	45	275	51	208	56
university	57	52	53	62	48	71	45	63
Place of living								
village	173	26	170	23	189	36	181	37
town up to 20,000	61	45	51	51	64	47	67	49
town from 20,000 to 100,000	87	41	85	48	104	51	104	39
town over 100,000	139	41	54	55	167	51	156	63

tee Program for Women „Pass to the 21<sup>st</sup> Century” 1992-2000; World Bank Program „The Breast and Cervical Cancer Demonstration Project” 1999-2002 (8).

Much less successful were campaigns promoting secondary prevention of cervical cancer as they were largely dependent on individual women and their yearly visits to a gynaecologist's clinic. The evidence for that is taken from women's declarations about their health behaviour. Although the difference between the figures for 1976 and 2002 is significant, we must stress that the proportion of women saying they saw a gynaecologist in 2002 was rather low (46%), while only 45% declared having a PAP test during the previous 3-4 years.

Those women with less knowledge and awareness and fewer PAP smears (women aged 16-24 and over 60, unqualified farm workers, lower educated women and those living in the country) have been targeted in a programme developed in 2002 out of the concluding report on the World Bank Programme. The programme is now being implemented in some regions of Poland.

The epidemiological studies conducted on the Cancer Registries in Kielce, Opole and Warsaw showed the differences in 5-year survival rates. The high, as good as average European survival rate in Kielce region might have been influenced by the prophylactic activity (public education and widely applied PAP test by gynaecologist in proper intervals to healthy women) in the 1980s (9). In the results of that proportion of the patients with

cervical cancer in the stage I was higher (41.2%) than in other regions (Warsaw 27.8%, Opole 24.9%) (5). The clinical study from the same regions showed some reasons why cervical cancer mortality has not changed. It confirms that the factors responsible for the significant increase of the relative risk of death are: advancement of disease on the first diagnosis, delay in treatment connected with the place of living, what is related to the standard of diagnosis and treatment (6).

## CONCLUSION

After 26 years of observation, Polish women's knowledge of secondary prevention in cervical cancer has improved in a significant way. The behaviour of women has improved too, but not so significantly. A special program has, therefore, been designed to target those most in need. It must be stressed that cervical cancer is one from rare neoplasms which can be detected in the early stage and therefore patients could be completely cured (10).

The proportion of unfavourable clinical stages, the small number of cancer cases eligible for radical treatment and the delays in radiotherapy seen in the epidemiological and clinical studies offer some explanation of the observed slow positive change in the mortality trend among cervical cancer patients.

Work is in hand to improve these factors. National Cancer Programme is in process of legalisation. It will last from 2006 to 2015. The Programme will include development of scientific studies, public and professional education, prevention and treatment. It complies with UE health policy recommended by WHO. The Cancer Control Program is recognised as the highest priority.

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RAK SZYJKI MACICY W POLSCE: UŚWIADOMIENIE, PRZEŻYCIA 5-LETNIE,  
METODY LECZENIA. BADANIA POPULACYJNE

## STRESZCZENIE

Celem pracy było ustalenie przyczyn wolnego spadku umieralności raka szyjki macicy w ciągu 20 lat (od 1980r.) na podstawie badań uświadomienia kobiet oraz 5-letnich przeżyć pacjentek i metod leczenia.

Metody. Dane o uświadomieniu i zachowaniach zdrowotnych kobiet uzyskano z pięciu badań ankietowych przeprowadzonych w latach: 1976, 1986, 1990, 1998 i 2002 w reprezentacyjnych próbach kobiet powyżej 18 roku życia. Wielkość prób w poszczególnych latach wynosiła odpowiednio: 1.035, 460, 455, 524, 509. Wyniki skorelowano z cechami demograficznymi i socjalnymi respondentek. Przeżycia 5-letnie i czynniki prognostyczne oceniano na podstawie danych populacyjnych stanowiących 10% polskiej populacji. Obejmowała ona 1386 pierwszorazowych pacjentek z rakiem szyjki macicy diagnozowanych w latach 1990-1996 i zgłoszonych do rejestrów nowotworowych w Kielcach, Opolu i w Warszawie. W obliczeniach 5-letnich przeżyć zastosowano metodę tabel trwania życia, a znaczenie czynników prognostycznych oceniono stosując wielowymiarową analizę regresji, która uwzględniała: zaawansowanie choroby, rozpoznanie histopatologiczne i miejsce zamieszkania. Dane z dokumentacji medycznej pacjentek leczonych radykalnie (783), z tych samych regionów, analizowano analogicznymi metodami w celu oceny standardów leczenia.

Główne obserwacje. Wiedza kobiet w zakresie profilaktyki wtórnej raka szyjki macicy zwiększyła się istotnie, ale ich zachowania zdrowotne tylko w niewielkim stopniu. W badaniu populacyjnym stwierdzono niskie przeżycia pacjentek (52,2%), niekorzystne proporcje stopni klinicznego zaawansowania choroby, niewielką liczbę przypadków nadających się do leczenia radykalnego, a w badaniu uwzględniającym dane kliniczne, opóźnienia w rozpoczynaniu leczenia. Wpływ wymienionych czynników był statystycznie istotny.

Podsumowanie. Powyższe stwierdzenia można uznać za istotne przyczyny zbyt wolnego spadku trendu umieralności chorych na raka szyjki macicy.

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