

# The assessment of overall survival (OS) after adjuvant chemotherapy for patients with malignant endometrial cancer in Poland

Zbigniew Teter<sup>1</sup>, Andrzej Śliwczyński<sup>1,2</sup>, Melania Brzozowska<sup>1,2</sup>, Marcin Świerkowski<sup>3</sup>,  
Andrzej Jacyna<sup>1</sup>, Jarosław Pinkas<sup>4</sup>, Aleksandra Sierocka<sup>5</sup>, Michał Marczak<sup>2</sup>,  
Anna Dańska-Bidzińska<sup>6</sup>, Mariusz Bidziński<sup>7</sup>, Waldemar Wierzba<sup>8</sup>

<sup>1</sup>National Health Fund, Warsaw, Poland

<sup>2</sup>Division of quality services, procedures and medical standards, Medical University in Lodz, Poland

<sup>3</sup>Department of Oncology, Military Institute of Medicine, Warsaw, Poland

<sup>4</sup>Centre of Postgraduate Medical Education, Warsaw, Poland

<sup>5</sup>Copernicus Memorial Hospital in Lodz, Comprehensive Cancer Center and Traumatology, Lodz, Poland

<sup>6</sup>2<sup>nd</sup> Department of Obstetrics and Gynecology, Medical University of Warsaw, Poland

<sup>7</sup>Department of Gynecological Oncology Memorial Cancer Center Maria Skłodowska-Curie — Institute of Oncology Warsaw, Poland

<sup>8</sup>University of Humanities and Economics in Lodz, Poland

## ABSTRACT

**Objectives:** In 2013 malignant endometrial cancers have amounted to 7.3% of all cancers diagnosed among women in the report by the Polish National Cancer Registry Raw prevalence rate amounted to 28.7, whereas standardised prevalence rate 15.6 per 100 000 population. Among the causes of death, these cancers amounted to 3% and were ranked ninth on the list of the most common causes of oncologic mortality of women. In the year 2013 a total of 1243 women died of malignant endometrial cancers. A stable increase of malignant endometrial cancer incidence has been observed for 2 decades. Despite that fact, the increase of the mortality incidence is at a much lower level, which demonstrates the much higher effectiveness of the treatment of such cancers. The recording rate of the malignant endometrial cancer mortality amounts to 95%, so the presented absolute numbers are reliable. Examining the clinical stages of malignant endometrial cancers, we can establish that approx. 85% of them are diagnosed at stage I or II according to the FIGO classification. Patients with advanced stages of cancer represent less than 15%.

**Material and methods:** retrospective analysis of endometrial body cancer prevalence data for the entire population of Poland, assessment of malignant endometrial cancer prevalence in the years 2008–2015 and overall survival probability in the population of patients undergoing adjuvant chemotherapy.

**Results:** The number of patients with a diagnosed malignant endometrial cancer within the studied period in Poland remains on a stable level (2008 — 30.6 thousand patients, 2015 — 40.2 thousand patients). Among all listed patients with the indication of C54 each year approx. 20% enters hospital treatment. System therapy with chemotherapy drugs was used in approx. 1–2% of patients treated in hospitals. The average age of the patients was 64.9 years, and the median age 65 years. The number of observations was 2085, including 1088 censored observations. The average survival for the sample under study was 30.67 month (SD = ± 0.6); median survival time was 23.93 month. The number of censored observations was 1088 (52.16%). Probable survival of 1 year is achieved by 67.57% of patients, 2 years by 49.73%, 3 years by 40.68%, above 5 years 30.77%.

**Conclusions:** The incidence of endometrial cancer in Poland in the years 2008–2015 continues to grow at 5% upward trend (in Europe 3.4–5.9). In Poland in 2012, crude incidence rate for cancer of the uterus was 29.8 and did not differ significantly from the results in countries such as Finland, Slovakia, Sweden, Belgium and Bulgaria. The overall survival after adjuvant chemotherapy for patients with malignant endometrial cancer in Poland shows considerable differences depending on the region of the country.

**Key words:** chemotherapy, malignant endometrial cancer, Poland

Ginekologia Polska 2017; 88, 6: 296–301

### Corresponding author:

Aleksandra Sierocka

Copernicus Memorial Hospital in Lodz

Comprehensive Cancer Center and Traumatology

e-mail: adreslewska@wp.pl

## INTRODUCTION

In 2013 malignant endometrial cancers have amounted to 7.3% of all cancers diagnosed among women in the report by the Polish National Cancer Registry. Raw prevalence rate amounted to 28.7, whereas standardised prevalence rate 15.6 per 100 000 population [1]. Among the causes of death, these cancers amounted to 3% and were ranked ninth on the list of the most common causes of oncologic mortality of women. In the year 2013 a total of 1243 women died of malignant endometrial cancers.

A stable increase of malignant endometrial cancer incidence has been observed for 2 decades [2]. Despite that fact, the increase of the mortality incidence is at a much lower level, which demonstrates the much higher effectiveness of the treatment of such cancers. The recording rate of the malignant endometrial cancer mortality amounts to 95%, so the presented absolute numbers are reliable. Examining the clinical stages of malignant endometrial cancers, we can establish that approx. 85% of them are diagnosed at stage I or II according to the FIGO classification. Patients with advanced stages of cancer represent less than 15% [3]. The results of endometrial cancer treatment in Poland can thus be considered satisfying, which distinguishes them from other cancers of female reproductive system. Only the advanced stages of endometrial cancer and type II, which also includes carcinosarcoma type tumours have a decidedly worse prognosis. In these cases adjuvant therapy is used, mainly with the use of cytostatic drugs.

The goal of the study: retrospective analysis of endometrial body cancer prevalence data for the entire population of Poland, assessment of malignant endometrial cancer prevalence in the years 2008–2015 and overall survival probability in the population of patients undergoing adjuvant chemotherapy.

## MATERIAL AND METHODS

The reporting databases of the National Health Fund (NFZ, the public payer in Poland which finances health services in accordance with the legal regulations in force) were used to download all patient data from the years 2008–2015 for analysis, for patients with indication of C54%<sup>1</sup> – malignant endometrial cancer. Pursuant to the patient's ID (PESEL number) a retrospective analysis of annual and five-year prevalence indicators was conducted (for the period of 2010–2015, per 100 000 inhabitants of a given province). Subsequently, data concerning solely hospital treatments and malignant endometrial cancer patients undergoing systemic chemotherapy were selected from the aforementioned database. Based on the date

of drug administration the overall survival indicator was calculated, using the Kaplan-Meier estimator and survival tables. The analysis included the patients who underwent a systemic therapy with chemotherapy drugs in the years of 2011–2015 (5 years). The survival period was calculated from the day of first drug administration, and the observation cutoff date was set on 31 December 2015. The SAS EG 5.1 software was used for calculations. The demographic data was collected from the Central Statistical Office (GUS) website.

## RESULTS

The number of patients with a diagnosed malignant endometrial cancer within the studied period in Poland remains on a stable level (2008, 30.6 thousand patients, 2015 40.2 thousand patients), with a small increasing trend of 5% (SD = ± 1.26 thousand). By provinces, the highest average annual number of patients was observed in the: Śląskie province (5.7 thousand patients) and Mazowieckie province (4.4 thousand patients), the smallest number of indicated patients was present in Lubuskie province (698 patients).

Among all listed patients with the indication of C54 each year approx. 20% enters hospital treatment. The highest average annual number of undergoing hospital treatment (SD = ± 0.27 thousand) was observed in the Mazowieckie province (approx. 1.1 thousand) and Śląskie province (approx. 0.9 thousand), the lowest in Lubuskie province (0.16 thousand). System therapy with chemotherapy drugs was used in approx. 1–2% of patients treated in hospitals. The average age of the patients was 64.9 years, and the median age 65 years.

The annual prevalence indicator per 100 000 inhabitants is presented on the map below (Fig. 1).

The prevalence indicator of malignant endometrial cancer is highest in the Śląskie, Świętokrzyskie and Kujawsko-Pomorskie provinces, amounting to, respectively, 123.32, 117.66 and 110.10 persons per 100 000 province inhabitants. The lowest values of the indicator are present in the Lubuskie (63.38), Małopolskie (72.54) and Łódzkie (78.53) provinces.

The periodical prevalence indicator for the 5 year period under analysis is presented on Figure 2.

The highest periodic prevalence indicator of malignant endometrial cancer occurred in the Świętokrzyskie, Śląskie, and Mazowieckie provinces, amounting to, respectively, 348.34, 338.10 and 304.31 persons per 100 000 province inhabitants. The lowest values of the indicator are present in the Podkarpackie (236.51), Małopolskie (256.94) and Lubuskie (260.39) provinces.

To calculate the overall survivability (OS) rate, patients undergoing chemotherapy (standard and non-standard) in the period of 2011–2015 were selected, the sample size

<sup>1</sup> The „%” mark replaces any number



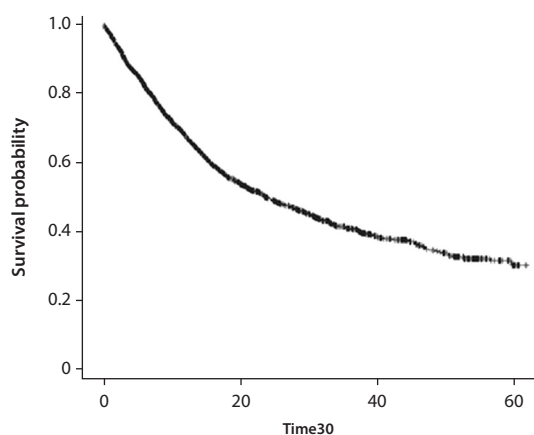
**Figure 1.** Average annual prevalence indicator for patients with C54% in Poland over the analysed period



**Figure 2.** Periodic prevalence indicator for the 5 year period of observation

amounted to 2085 persons, (Fig. 3). The median observation time was 28.66 months, standard deviation 0.60 month with a 95% confidence level.

The number of observations was 2085, including 1088 censored observations. The average survival for the sample under study was 30.67 month (SD = ± 0.6); me-



**Figure 3.** Survival probability for endometrial cancer patients using Kaplan-Meier method

dian survival time was 23.93 month. The number of censored observations was 1088 (52.16%). Probable survival of 1 year is achieved by 67.57% of patients, 2 years by 49.73%, 3 years by 40.68%, above 5 years 30.77%.

## DISCUSSION

Malignant endometrial cancers become an increasingly important public health problem. An increasing trend is being observed both in Poland and in other areas of Europe. In accordance with data published by GLOBCAN a total of 5912 cases of malignant endometrial cancers were recorded in Poland in 2012. Raw prevalence indicator amounted to 29.8 in our country. Similar indicators were found in Slovakia: 32.9, Finland: 31.3, Sweden: 30, Bulgaria 33.5, Belgium 27.6 [4]. Raw prevalence indicator in all developed countries exceeds 26. This high number of cancers is mainly a result of the following risk factors: obesity, hypertension, diabetes, hormonal disorders or tamoxifene treatment and Lynch syndrome [5–7]. The prevalence of these ailments, common in modern societies, is increasing. The conducted retro-

spective analysis of the Polish payer's data has confirmed an increasing trend of 5% per annum, which places Poland in the middle of the ranking for European countries. The growth rate in the remaining European Union countries varies within a range of 3.4–5.9% [4].

A positive phenomenon demonstrated by the analysis is a low increase of malignant uterine cancer mortality. The absolute number of deceased is increasing, but the standardised mortality indicators decrease, which in 1980 amounted to 2.8 whereas in 2013 to 2.4. It may be estimated that the main factor behind the decrease in Poland is the high percentage of diagnoses of the illness at the early clinical stages. Despite an adverse age structure of the malignant endometrial cancer patients significant disproportion in the percentage of 5-year survival between the early and advanced clinical cancer stages may be observed. According to the data published so far [8–10, 12] these values for early stages of advancement amount to 87–95%, whereas for advanced cases 19.8–48.8%. Data on patients in advanced stages of cancer or undergoing relapse of cancer after chemotherapy received by the authors in the analysis indicate that the percentage of patients living 5 years or more amount to 30.77%. The survival probability for 50% of this population amounts to an average of 30 months. Similar indicator values can be observed in other Central Europe countries [11]. German states achieve somewhat better results, with indicator higher by 4–6% [10]. The reasons for differences between German states and other European countries should be probably attributed to a different, perhaps better organisation of oncologic care and higher number of active clinical trials, to which patients in advanced clinical stages of the cancer are enrolled.

The results of the analysis based on regional data indicate that the number of patients in individual provinces is varied (Tab. 1). The differences of a 15-fold change year to year may indicate that there are no established uniform therapeutic

**Table 1.** Number of patients with a diagnosis of C54% for all types of medical services, in hospital treatment and with used chemotherapy

	The total number of patients diagnosed with C54% reported for all levels of care							
	2008	2009	2010	2011	2012	2013	2014	2015
DOLNOŚLĄSKIE	2 052	2 393	2 314	2 381	2 546	2 657	2 849	2 897
KUJAWSKO-POMORSKIE	2 012	2 197	2 220	2 250	2 351	2 413	2 453	2 520
LUBELSKIE	1 864	1 926	1 897	2 049	2 143	2 261	2 412	2 571
LUBUSKIE	604	686	674	691	732	725	752	720
ŁÓDZKIE	1 660	1 926	1 876	1 906	1 918	2 084	2 144	2 246
MAŁOPOLSKIE	2 284	2 429	2 351	2 399	2 375	2 471	2 567	2 646
MAZOWIECKIE	3 793	3 810	3 945	4 249	4 506	4 587	4 919	5 114
OPOLSKIE	934	956	938	988	1 034	1 107	1 163	1 189
PODKARPACKIE	1 446	1 562	1 378	1 472	1 607	1 919	1 881	2 082
PODLASKIE	950	1 076	1 380	1 359	1 151	1 186	1 155	1 154

→

<b>Table 1 (cont.). Number of patients with a diagnosis of C54% for all types of medical services, in hospital treatment and with used chemotherapy</b>								
	<b>The number of patients diagnosed with C54% reported for all levels of care</b>							
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
POMORSKIE	1 797	1 885	1 945	2 016	2 114	2 301	2 263	2 385
ŚLĄSKIE	5 142	5 643	5 345	5 416	5 639	5 928	6 110	6 459
ŚWIĘTOKRZYSKIE	1 244	1 350	1 434	1 482	1 524	1 549	1 622	1 706
WARMIŃSKO-MAZURSKIE	1 224	1 277	1 275	1 332	1 408	1 527	1 601	1 615
WIELKOPOLSKIE	2 486	2 558	2 582	2 730	2 840	2 968	3 053	3 185
ZACHODNIOPOMORSKIE	1 179	1 289	1 308	1 373	1 401	1 512	1 670	1 712
	<b>The number of patients with C54% under hospital care</b>							
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
DOLNOŚLĄSKIE	544	422	389	424	443	455	515	571
KUJAWSKO-POMORSKIE	459	454	460	449	487	468	492	513
LUBELSKIE	381	353	334	374	386	438	472	448
LUBUSKIE	156	145	131	158	169	162	156	186
ŁÓDZKIE	525	529	495	485	521	551	567	583
MAŁOPOLSKIE	598	637	621	643	597	672	678	734
MAZOWIECKIE	956	1 077	1 069	1 022	1 034	1 128	1 213	1 253
OPOLSKIE	184	207	177	162	203	229	215	223
PODKARPACKIE	365	361	355	420	393	378	425	432
PODLASKIE	257	236	250	230	211	228	219	268
POMORSKIE	366	375	347	326	313	404	352	408
ŚLĄSKIE	949	959	924	885	847	891	914	1 080
ŚWIĘTOKRZYSKIE	250	268	288	264	193	209	201	356
WARMIŃSKO-MAZURSKIE	214	201	169	145	172	208	214	203
WIELKOPOLSKIE	601	613	668	740	718	748	769	862
ZACHODNIOPOMORSKIE	288	204	223	262	268	284	308	332
	<b>The number of patients with C54% who have undergone chemotherapy</b>							
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
DOLNOŚLĄSKIE	76	11	12	2	9	17	13	35
KUJAWSKO-POMORSKIE	34	40	45	47	73	83	66	54
LUBELSKIE	37	6	9	8	12	8	4	8
LUBUSKIE	15	4	13	4	7	16	14	3
ŁÓDZKIE	47	96	50	20	22	30	11	9
MAŁOPOLSKIE	79	96	119	17	5	7	16	25
MAZOWIECKIE	108	118	56	16	101	152	161	179
OPOLSKIE	29	30	15					1
PODKARPACKIE	15	4	4	8	21	6	6	5
PODLASKIE	27	36	50	46	48	13	15	37
POMORSKIE	22	20	13	22	1	7	11	11
ŚLĄSKIE	71	50	48	24	20	29	52	58
ŚWIĘTOKRZYSKIE	23	25	23	26	10	3		2
WARMIŃSKO-MAZURSKIE	7		1	3	1	6	8	16
WIELKOPOLSKIE	75	85	113	124	119	147	155	167
ZACHODNIOPOMORSKIE	11	21	28	20	8	5	7	21

paths (differences in the therapy between provinces) or that there is a significant migration of patients with advanced cancers between provinces. However, when analysing the number of procedures reported within the C54 group the values are proportional, which indicates that the first conclusion is correct. The comparison of a one-year and five-year prevalence indicator in individual provinces indicates that the highest values may be observed in the Śląskie and Świętokrzyskie province, whereas the Łódzkie and Mazowieckie provinces have a low single year prevalence indicator, and a much higher indicator in the five year period.

The analysis of data collected by the public payer in Poland indicates very significant interdependencies from the point of view of epidemiological knowledge concerning malignant endometrial cancer. By correlating the obtained results with data obtained from the Polish National Cancer Registry one may conclude that the treatment results for malignant endometrial cancer patients are within the range of results obtained in other European Union countries. However, the subsequent analyses should analyse the reasons and eliminate the variability of the calculated indicators in annual periods (year to year) in the system treatment of the patients with the aforementioned cancers.

### CONCLUSIONS

1. The incidence of endometrial cancer in Poland in the years 2008–2015 continues to grow at 5% upward trend (in Europe 3.4–5.9).
2. In Poland in 2012, crude incidence rate for cancer of the uterus was 29.8 and did not differ significantly from the results in countries such as Finland, Slovakia, Sweden, Belgium and Bulgaria.
3. The overall survival after adjuvant chemotherapy for patients with malignant endometrial cancer in Poland shows considerable differences depending on the region of the country.

### Conflict of interest

The Authors declare no conflict of interest.

### REFERENCES

1. Didkowska J, Wojciechowska U. Nowotwory Złośliwe w Polsce w 2013 r. Krajowy Rejestr Nowotworów MZ Warszawa 2015 (Malignant cancers in Poland in 2013. National Cancer Registry, Ministry of Health Warsaw. 2015.
2. Kornafel J, Mądry R, Bidziński M. Nowotwory kobiecego układu płciowego. Zalecenia postępowania diagnostyczno-terapeutycznego w nowotworach złośliwych – 2013. Pod red M Krzakowskiego PTOK 2013; 286 (Female reproductive system cancers. Recommendations for diagnostic and therapeutic proceedings in malignant cancers — 2013. Edited by M. Krzakowski PTOK 2013.
3. Zwierko M. Epidemiologia nowotworów złośliwych trzonu macicy. In: Bidziński M. ed. Nowotwory trzonu macicy. CMKP 2011: 5–26.
4. GLOBCAN 2012 IARC.-2.12.2016 Globcan.iarc.fr.
5. Colombo N, Creutzberg C, Amant F, et al. ESMO-ESGO-ESTRO Endometrial Consensus Conference Working Group. ESMO-ESGO-ESTRO Consensus Conference on Endometrial Cancer: Diagnosis, Treatment and Follow-up. *Int J Gynecol Cancer*. 2016; 26(1): 2–30, doi: [10.1097/IGC.0000000000000609](https://doi.org/10.1097/IGC.0000000000000609), indexed in Pubmed: 26645990.
6. Iqbal J, Ginsburg OM, Wijeratne TD, et al. Endometrial cancer and venous thromboembolism in women under age 50 who take tamoxifen for prevention of breast cancer: a systematic review. *Cancer Treat Rev*. 2012; 38(4): 318–328, doi: [10.1016/j.ctrv.2011.06.009](https://doi.org/10.1016/j.ctrv.2011.06.009), indexed in Pubmed: 21775065.
7. Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011–2012. *JAMA*. 2014; 311(8): 806–814, doi: [10.1001/jama.2014.732](https://doi.org/10.1001/jama.2014.732), indexed in Pubmed: 24570244.
8. <http://seer.cancer.gov/statfacts/html/corp>. (6.06.2016).
9. Tejerizo-García A, Jiménez-López JS, Muñoz-González JL, et al. Overall survival and disease-free survival in endometrial cancer: prognostic factors in 276 patients. *Onco Targets Ther*. 2013; 9: 1305–1313, doi: [10.2147/OTT.S51532](https://doi.org/10.2147/OTT.S51532), indexed in Pubmed: 24092993.
10. Chen T, Jansen L, Gondos A, et al. GEKID Cancer Survival Working Group. Survival of endometrial cancer patients in Germany in the early 21st century: a period analysis by age, histology, and stage. *BMC Cancer*. 2012; 12: 128, doi: [10.1186/1471-2407-12-128](https://doi.org/10.1186/1471-2407-12-128), indexed in Pubmed: 22459016.
11. Gondos A, Bray F, Brewster DH, et al. EUNICE Survival Working Group. Recent trends in cancer survival across Europe between 2000 and 2004: a model-based period analysis from 12 cancer registries. *Eur J Cancer*. 2008; 44(10): 1463–1475, doi: [10.1016/j.ejca.2008.03.010](https://doi.org/10.1016/j.ejca.2008.03.010), indexed in Pubmed: 18455387.
12. [www.cancer.org](http://www.cancer.org).