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Analysis of oncological diseases in the Subcarpathian Oncology Center in 2007 – 2011

Analiza schorzeń onkologicznych w Podkarpackim Ośrodku Onkologicznym w latach 2007 – 2011

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Abstract

Introduction: Cancers are a growing health, social and economic problem of society worldwide. They are the second cause of mortality in Poland, causing 27% of deaths among men and about 24% of deaths among women. For several decades, there has been a steady increase in morbidity and mortality due to malignant tumors. The increase in morbidity of oncological diseases is related to aging of the population and increasing exposure to carcinogens such as poor diet, alcohol consumption and smoking, stress, environmental pollution as well as genetic inheritance.

Data of morbidity and mortality caused by cancers in Poland has been published by Oncology Center in Warsaw since 1979.

Aim of the study: to analyze selected oncological diseases of patients of the Subcarpathian Oncology Center in Brzozów, Poland in 2007-2011 as well as to compare them with data based on national oncology statistics in Poland.

Material and methods: the material were records of selected oncological diseases of 10520 patients (6053 women and 4467 men; aged 2 – 98) of the Subcarpathian Oncological Center in Brzozów, Poland in 2007-2011.

Results: The highest morbidity occurred in the group aged 40 – 59, the lowest in the group aged 90 – 100. The greatest morbidity rate was noted for breast cancer and the lowest morbidity rate was noted for cervical cancer.

Conclusion: The cervical cancer morbidity decreases and it may be the evidence of the raising awareness, prevention and complex medical diagnostics. Morbidity rate for skin cancer increases therefore it is necessary to implement programs related to the prevention of this cancer.

Key words: epidemiology, breast cancer, melanoma, cervical cancer

Streszczenie

Wprowadzenie: Nowotwory złośliwe stają się coraz większym problemem zdrowotnym, społecznym i ekonomicznym społeczeństw na całym świecie. Są drugą przyczyną zgonów w Polsce, powodując 27% zgonów wśród mężczyzn i około 24% zgonów wśród kobiet. Od kilkudziesięciu lat obserwuje się stały wzrost zachorowalności i umieralności z powodu nowotworów złośliwych. Wzrost zachorowalności na schorzenia onkologiczne wiąże się ze starzeniem się populacji i zwiększeniem ekspozycji na czynniki rakotwórcze, takie jak zła dieta, spożywanie alkoholu i palenie tytoniu, stres, zanieczyszczenie środowiska, a także obciążenia genetyczne.

Dane dotyczące zachorowalności i umieralności na nowotwory złośliwe w Polsce są publikowane przez Centrum Onkologii w Warszawie od 1979 roku.

Cel pracy: Analiza wybranych chorób onkologicznych pacjentów Podkarpackiego Ośrodka Onkologicznego w Brzozowie w latach 2007-2011 oraz porównanie ich z danymi opartymi o krajową statystykę chorób onkologicznych w Polsce.

Materiał i metody: Materiał stanowiły dane z dokumentacji medycznej dotyczące wybranych chorób onkologicznych 10520 pacjentów (6053 kobiet i 4467 mężczyzn w wieku 2 - 98 lat) z Podkarpackiego Ośrodka Onkologicznego w Brzozowie w latach 2007-2011.

Wyniki: Największa zachorowalność wystąpiła w grupie w przedziale wiekowym 40 - 59 lat, najniższa w grupie w przedziale wiekowym 90 - 100 lat. Najwyższą zachorowalność odnotowano w przypadku raka piersi, a najniższą zachorowalność odnotowano w przypadku raka szyjki macicy.

Wnioski: zachorowalność na raka szyjki macicy maleje, co może świadczyć o zwiększaniu się świadomości, profilaktyce i kompleksowej diagnostyce medycznej. Zachorowalność na raka skóry wzrasta, wobec czego konieczne jest wdrożenie programów związanych z jego zapobieganiem.

Słowa kluczowe: epidemiologia, rak piersi, czerniak, rak szyjki macicy

Introduction

Cancers are a growing health, social and economic problem of society worldwide. In Poland, as in the world, there is a very unfavorable epidemiological situation in terms of the occurrence of cancer diseases. For several decades, there has been a steady increase in morbidity and mortality due to malignant tumors [1].

According to the studies, the increase in morbidity of oncological diseases is related to aging of the population and increasing exposure to carcinogens such as poor diet, alcohol consumption and smoking, stress, environmental pollution as well as genetic inheritance. Some authors suggest that, people who are the most at risk of cancer are less educated and less well-off [2]. Exposure to cancer risk factors can be reduced by increasing public awareness of cancer prevention, lifestyle modification as well as early and comprehensive cancer diagnostics [3, 4] Cancers are the second cause of death in Poland, causing 27% of deaths among men and about 24% of deaths among women in 2014. Malignant lung cancer is the dominant malignancy in men, causing about one-fifth of morbidity and one-third of deaths from cancer. The second most common malignant tumor is a large intestine cancer (colon and rectum cancers). The oncological disease with the highest growth rate of mortality is a prostate cancer. In the female population, the leading oncological diseases are breast, lung and large intestine (colon and rectum) cancers [5].

Data of morbidity and mortality caused by cancers in Poland has been published by Oncology Center in Warsaw since 1979 (also available as PDF at www.onkologia.org.pl)

Aim of the study

The aim of the study was to analyze selected oncological diseases of patients of the Subcarpathian Oncology Center in Brzozów, Poland in 2007-2011 as well as to compare them with data based on general statistics in Poland (Oncology Center in Warsaw, Poland).

Material and methods

The material was the data obtained from medical records of 10520 patients (including 6053 women and 4467 men) of the Oncological Surgery Department of the Subcarpathian Oncological Center in Brzozów, Poland in 2007-2011 aged 2 – 98.

The analyze was based on the history of selected oncological diseases (breast, cervical and skin cancer) - a total of 1995 patients (19% of all patients in the Oncological Surgery Department during the considered period).

Data was also obtained from the national statistics of Oncology Center in Warsaw, Poland about morbidity and mortality of breast, cervical and skin cancers in Poland in 2007 – 2011 [7].

Results

Based on the analysis of documents, the following data was obtained:

There were 2025 patients (762 male and 1263 female) admitted to the Oncological Surgery Department in Brzozów in 2007. The number of patients with the analyzed diseases was 531 (25.2% of all patients admitted to the department).

In 2008, a total of 2134 patients (868 male and 1266 female) were admitted to the department. The number of patients with the analyzed diseases was 409 (19% of all patients admitted to the department). In 2009, a total of 2485 patients (1086 male and 1399 female) were admitted to the department. The number of patients with the analyzed diseases was 411 (16.5% of all patients admitted to the department). In 2010, a total of 2300 patients (1085 male and 1214 female) were admitted to the department. The number of patients with the analyzed diseases was 342 (14.79% of all patients admitted to the department). In 2011, a total of 1577 patients (666 male and 911 female) were admitted to the department. The number of patients with the analyzed diseases was 302 (19.13% of all patients admitted to the department).

In 2007 – 2011 there were 10520 patients (4467 male and 6053 female) admitted to the department. The number of patients with analyzed diseases was 1995 (8,96% of all patients admitted to the department). The above information has been shown in Table 1.

Table 1. Summary of the number of patients of the Oncological Surgery Department in 2007-2011.

Year	Number of admitted women	Number of admitted men	Total number of admitted patients	Number of analyzed patients	Analyzed patients per cent
2007	1263	762	2025	531	25,2%
2008	1266	868	2134	409	19%
2009	1399	1086	2485	411	16,5%
2010	1214	1085	2299	342	14,79%
2011	911	666	1577	302	19,13%
Total	6053	4467	10520	1995	18,96%

The morbidity of cervical and melanoma tumors in the hospital in Brzozów coincides with the results based on general statistics in Poland – the morbidity of cervical cancer decreases both in the national ranking and at the Oncology Center in Brzozów. The morbidity of skin cancer increases both in the national ranking and in the Oncology Center in Brzozów. The morbidity of breast cancer in national statistics increases, however it decreases in the Oncology Center in Brzozów. Among the analyzed oncological diseases in 2007-2011 the greatest morbidity rate was noted for breast cancer. During the five analyzed years, 1762 women were admitted to the department due to that cancer. Among the analyzed oncological diseases in 2007 – 2011 the lowest morbidity rate was noted for cervical cancer. During the five analyzed years only 20 patients were admitted to the department due to that cancer. The above information has been presented in the Table 2.

Table 2. Comparison of morbidity of selected cancers in general national statistics and in the Oncology Center in Brzozów

Cancer type		Number of patients in 2007	Number of patients in 2008	Number of patients in 2009	Number of patients in 2010	Number of patients in 2011
Breast	General national data	14484	14576	15752	15784	16643
	Subcarpathian Oncology Center	485	366	367	302	242
Cervix	General national data	3431	3270	3102	3078	2968
	Subcarpathian Oncology Center	7	3	6	2	2
Skin	General national data	2195	2286	2562	2545	2651
	Subcarpathian Oncology Center	39	40	39	34	57

The analyzed group was divided into 5 age – ranged groups: 0- 19, 20-39, 40- 59, 60-89 and 90-100. The highest morbidity was found in the group aged 40 – 59 (6549 admitted patients), the lowest in the group aged 90 – 100 and 0-19 (22 and 174 admitted patients). The above information has been shown in Table 3.

Table 3. Age ranges and morbidity in 2007 - 2011

Age range	Year					Total
	2007	2008	2009	2010	2011	
0- 19	30	35	53	33	23	174
20- 39	214	218	236	230	168	1066
40- 59	1294	1359	1516	1434	946	6549
60-89	482	518	672	599	438	2709
90-100	5	4	8	3	2	22

Among the analyzed breast tumors in 2007-2011 in the Oncological Surgery Department, the highest morbidity rate has was noted for the malignant cancer, the upper outer quarter (457 patients), non-malignant cancer (409 patients), indeterminate cancer (355 patients) and the malignant cancer, indefinite nipple (339 patients).

The lowest morbidity was noted for the malignant cancer, nipple and the cap of the nipple (3 patients), the malignant cancer, lower quarter of the inner nipple (24 patients), malignant cancer, central part of the nipple (27 patients) and malignant cancer, changes exceeding the nipple (29 patients). The decreasing morbidity was observed for non – malignant breast cancer (from 183 patients in 2007 to 28 patients in 2011) and for malignant cancer, nipple indefinite (from 133 patients in 2007 to 31 patients in 2011). On the other hand, there is an increasing morbidity for the malignant cancer, central part of the nipple (from 2 patients in 2007 to 6 patients in 2011), malignant cancer, lower quarter inner nipple (from 3 patients in 2007 to 6 patients in 2011), malignant cancer, upper inner quarter (from 3 patients in 2007 to 17 patients in 2011), malignant cancer, upper outer quarter (from 69 patients in 2007 to 77 patients in 2011), malignant cancer, changes exceeding the breast nipple (from 3 in 2007 to 6 in 2011), and malignant cancer, nipple and the cap of the nipple (from 0 in 2007 to 2 in 2011). The above information has been presented in charts 1, 2 and 3.

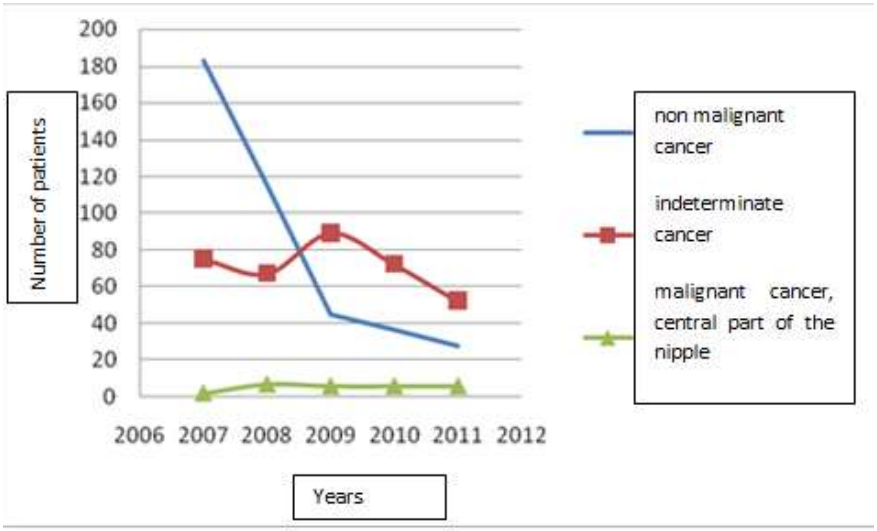

Chart 1. Analysis of the particular breast cancers in 2007-2011.

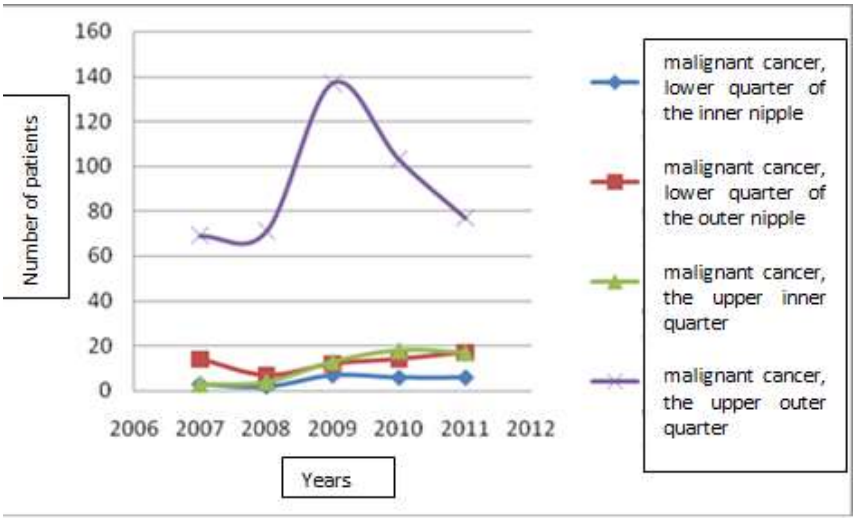

Chart 2. Analysis of the particular breast cancers in 2007-2011.

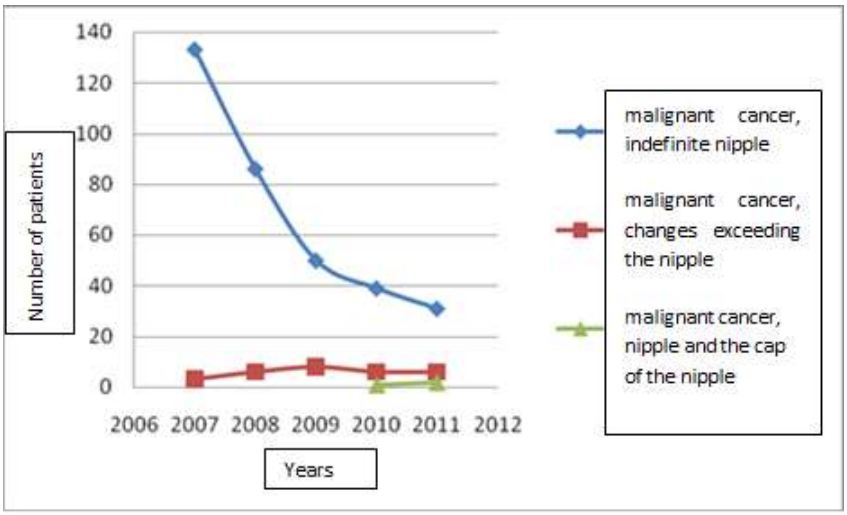

Chart 3. Analysis of the particular breast cancers in 2007-2011.

Among the analyzed cervical cancer in 2007-2011 the highest morbidity in Oncological Surgery Department was noted for malignant cancer, cervix undetermined (14 patients), and the lowest morbidity was noted for malignant cancer, changes exceeding the cervix (6 patients).

Decreasing morbidity was observed in both cases. There were 5 patients admitted to the department in 2007 with malignant cancer, cervix undetermined and 1 patient admitted in 2011. There were 2 patients admitted with malignant cancer, changes exceeding the cervix and only 1 patient admitted in 2011. The above information is presented in Chart 4.

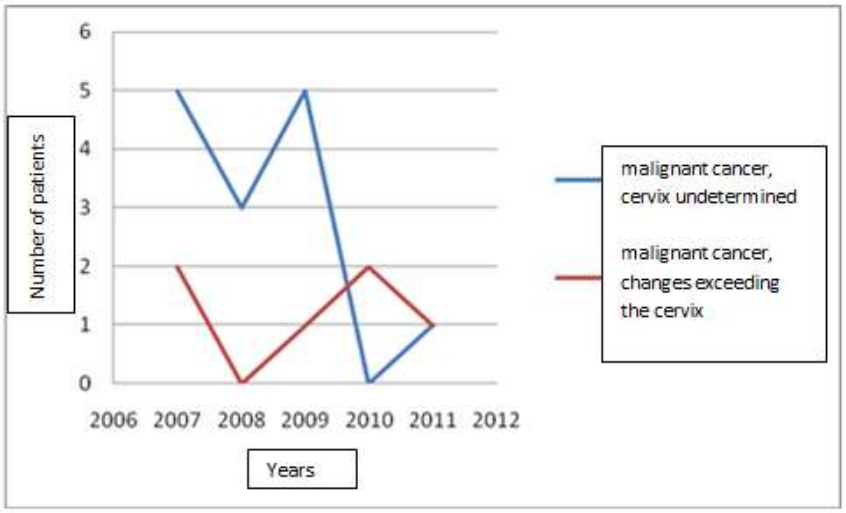

Chart 4. Analysis of particular cervical tumors over the period 2007-2011.

Among the analyzed skin cancers in 2007-2011, the highest morbidity in Oncological Surgery Department was observed for malignant cancer of the lower limbs including hip area (64 patients), malignant cancer, indeterminate (49 patients) and malignant cancer of the trunk (46 patients).

The lowest morbidity was observed for malignant cancer of the eyelid, including the angle of the eye (1 patient), malignant cancer of the lips (1 patient) and malignant cancer of the ear and external auditory canal (2 patients).

An increasing morbidity was noted for every type of skin cancer, except of malignant cancer of other and unspecified parts of the face (decrease from 7 patients in 2007 to 3 patients in 2011), malignant cancer, exceeding the specified limits (various trend) and malignant cancer of the eyelid including the angle of the eye (constant trend). The above information is presented in Charts 5, 6 and 7.

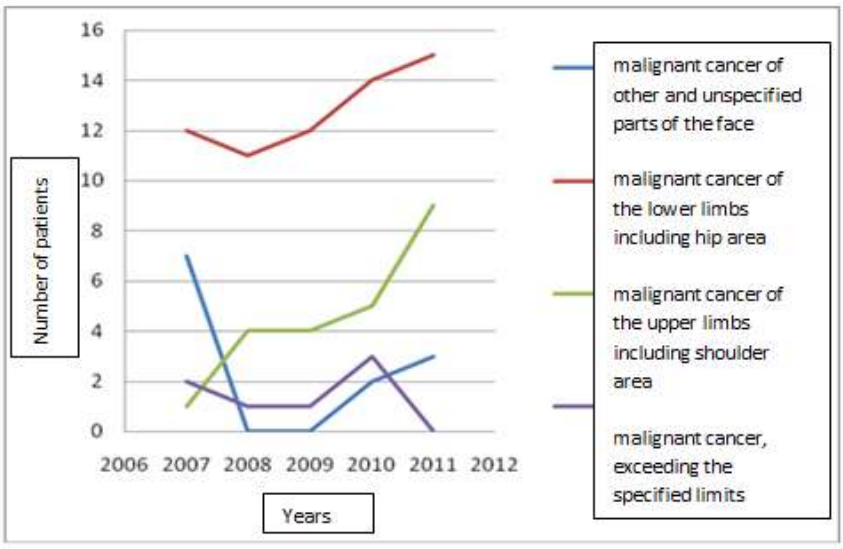

Chart 5. Analysis of particular skin cancers over the years 2007-2011.

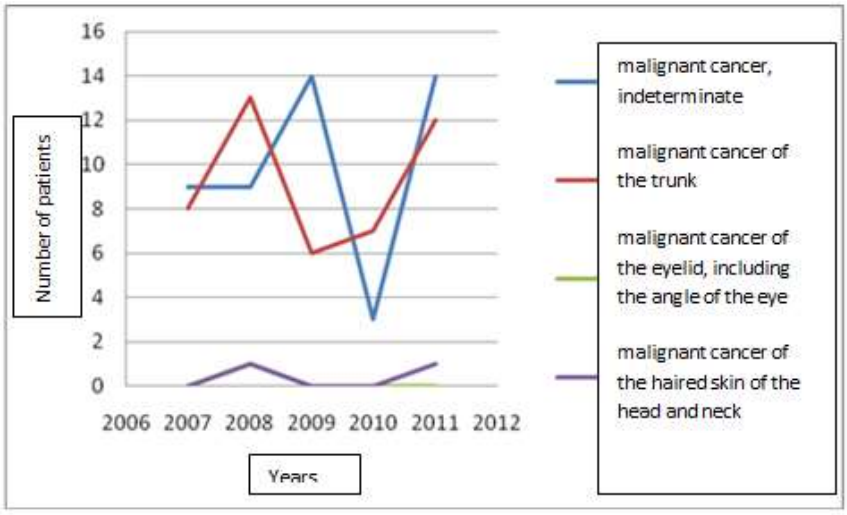

Chart 6. Analysis of particular skin cancers over the period 2007-2011.

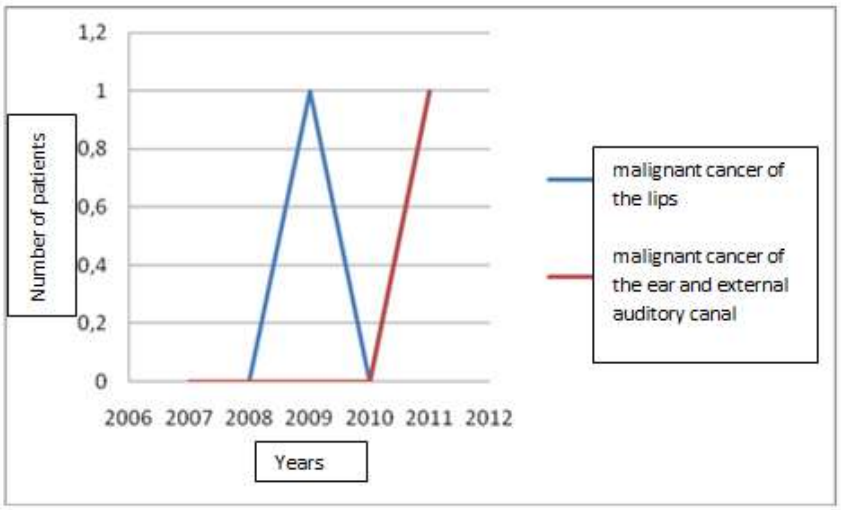

Chart 7. Analysis of particular skin cancers over the years 2007-2011.

Discussion

Oncological diseases are global epidemic. The first aspect of cancer prevention is the modification of risk factors related to lifestyle such as diet, weight and stress reduction and increasing level of physical activity. The results of most laboratory and epidemiological tests indicate an inverse relationship between regular physical exercise and the risk of cancers such as breast, colon, pancreas, lung, skin, endometrium and prostate cancers [8-10].

In this study, no incidence of cancers were measured in the Subcarpathian area so it is unknown if increasing or decreasing morbidity in Subcarpathian Oncology Center is related to this incidence. For example some diagnosed patients from this area could be hospitalized in different oncology centers. However, in this research only data from Subcarpatian Oncology Center has been collected and shown in this study.

Despite the decreased mortality from breast cancer, the morbidity of this type of cancer increases, causing the main cause of the morbidity of cancers among Polish women. Mammography can reduce the mortality of breast cancer by up to 40%, however the biggest problem is the very low attendance at the tests. It is important to focus on raising public awareness that mammography is a simple, quick and painless test that can detect malignant tumors at an early stage and can save lives [10-11]. According to our own analyzes, the morbidity of breast cancer decreases in the Subcarpatian Oncology Center in Brzozów and it may indicate increased awareness and more frequent preventive examinations of women.

In the last decade, morbidity and mortality from cervical cancers decreases significantly. This is due to early prevention, comprehensive diagnosis and effective treatment [2]. In our own research, there was also a decrease of the morbidity of cervical cancer, so it may also indicate an increased consciousness among women about regular examination and undertaking prevention.

Both in our own research and in the general national statistics data (Oncology Center in Poland, Warsaw) the morbidity of skin cancer increases. Exposure to UV rays is one of the skin cancer causes and it is currently recognized as the main causative factor in this cancer. Therefore, protection of the skin during exposure to sun exposure seems to be the best way to prevent skin cancer.

To sum up, it is necessary to consider the introduction of educational programs and actions concerning the prevention of oncological diseases. Such actions could inhibit or reduce the morbidity of cancers. Early primary prevention as well as early diagnosis and high level of public awareness can significantly improve the epidemiological situation of oncological diseases.

Conclusions

Based on the analysis of data from Subcarpathian Oncology Center in Brzozów and National Oncology Center in Warsaw, the following conclusions were drawn:

1. Among the analyzed oncological diseases, the highest morbidity was noted for breast cancer. The highest morbidity is between 40 and 59 years old.
2. The cervical cancer morbidity decreases and it may be the evidence of the raising awareness, prevention complex medical diagnostics.
3. Morbidity rate for skin cancer increases therefore it is necessary to implement programs related to the prevention of this cancer.

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