

A comparison of five-year relative survivals of ovarian cancer patients in Warsaw over the years 1983-1984 and 1993-1994. Preliminary report

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Aim. The statistics of five-year survivals are the principal yardsticks used in evaluating the efficiency of cancer control. The aim of this work is to compare the five-year relative survivals of ovarian cancer patients in Warsaw in the periods 1983-1984 and 1993-1994.

Material and methods. The study included 283 women with ovarian cancer in the period 1983-1984 and 316 ovarian cancer patients registered by the Warsaw Cancer Registry in the years 1993-1994. The material used for the calculations of the five-year relative survivals was collected and processed according to T. Hakulinen's method.

Results. A statistically insignificant increase in the five-year relative survival rates was found in the period 1983-1994. At the same time, a statistically significant increase in the five-year survivals of ovarian patients who received surgical and chemical treatment (from 6.9 to 34.3%; $t = 4.38$; $p < 0.05$) was observed.

Conclusion. The five-year relative survivals of Warsaw women with ovarian cancer were low in the years 1993-1994, significantly lower than in a comparable time in the United States.

Porównanie pięcioletnich przeżyć względnych chorych na raka jajnika w Warszawie w latach 1983-84 i 1993-94. Doniesienie wstępne

Statystyka przeżyć pięcioletnich jest podstawowym miernikiem oceny efektywności w zwalczaniu nowotworów. Celem pracy było porównanie 5-letnich przeżyć względnych chorych na raka jajnika w Warszawie w latach 1983-1984 i 1993-1994.

Materiał badany stanowiło 283 kobiet chorych na raka jajnika w latach 1983-1984 i 316 kobiet w latach 1993-1994, zarejestrowanych w Warszawskim Rejestrze Nowotworów. Materiał do obliczania 5-letnich przeżyć względnych zebrano i opracowano wg metody T. Hakulinena. W latach 1983-1994 stwierdzono nieznamienne statystycznie wzrost pięcioletnich przeżyć względnych. Jednocześnie stwierdzono istotne statystycznie zwiększenie przeżyć 5-letnich chorych na raka jajnika, leczonych chirurgicznie i chemicznie (z 6,9% do 34,3%; $t = 4,38$; $p < 0,05$). U kobiet chorych na nowotwory złośliwe jajnika w Warszawie w latach 1993-94 5-letnie przeżycia względne były istotnie niższe niż w porównywalnym okresie w USA.

Key words: ovarian cancer, survivals, Warsaw

Słowa kluczowe: raka jajnika, przeżycia, Warszawa

Introduction

The principal yardstick to measure the efficiency of cancer control is the statistics of five-year relative survivals. These statistics show the percent of people, who survived five years after diagnosis and are “statistically” cured from cancer [1, 2].

In Europe of the period 1978-1989, only 1/3 of women suffering from ovarian cancer survived 5 years after the first diagnosis. A small improvement in the survivals was found in women aged under 65 in Denmark, the Netherlands, and Finland [3, 4]. In the United States of the period 1989-1996, the five-year relative survivals in ovarian cancer reached 50.4% [5]. Better utilization of the new methods for early detection (markers, USG per vaginam) and more efficient surgical and chemical treatment are usually identified as the reason of these rates [3].

The aim of this work was to compare the five-year relative survivals among ovarian cancer patients in War-

saw in the periods 1983-1984 and 1993-1994, considering age, stage and treatment method.

Material and methods

The information source used were cancer reporting cards (MzN1 and MzN-1a) submitted to the Warsaw Cancer Registry by health centers and other data extracted from medical documentation, and information obtained from the Census Office.

The material comprised 296 and 348 ovarian cancer cases registered, respectively in the periods 1983-1984 and 1993-1994. For methodological reasons, calculations of the five-year relative survivals used 283 cases registered in the years 1983-1984 (243 were histologically confirmed) and 316 cases registered in the years 1993-1994 (278 histologically confirmed).

During the study periods, 4 and 17 cases were lost from sight respectively.

The following disease advancement (the classification of disease advancement stages was possibly in cases registered over the years 1993-1994 on cancer reporting cards MzN-1a) were distinguished:

- Local - with no metastasis to lymph nodes,
- Regional - with metastasis to regional lymph nodes,
- Generalised - with metastasis to internal organs,
- Unspecified - cases outside the present categories.

The material used for calculations of the survival rates was collected and processed according to the method of Hakulinen [6]. The relative survivals were calculated as a quotient of the probabilities of survival among cancer patients (observed survivals) and the estimated probability of survival among women in the general population, the same age, and place of living (expected survivals). The survivals expected for the individual age groups in the general population were calculated from Life Tables of Poland [7, 8].

The five-year relative survivals were a cumulative probability of surviving, calculated as a product of the probabilities of surviving another five years.

Results

Although the study period saw an increase of the five-year relative survivals in relation to the total relative survivals and in the three age groups under study, it was not statistically significant (Table I).

Table I. Relative five-year survivals among ovarian cancer patients (ICD 183) by age. Warsaw 1983-1984 and 1993-1994

Age groups	1983-1984	1993-1994
Total	35.2% (3.1%)*	39.2% (3.0%)
0-49 years	53.5% (6.0%)	60.5% (5.4%)
50-64 years	32.6% (4.4%)	34.2% (4.4%)
65 years and over	17.8% (5.2%)	24.3% (5.0%)

*) Standard deviation is given in brackets

No statistically significant differences were found in the five-year relative survivals in the study periods, related to the histological type.

A statistically significant increase in the five-year relative survival rate in the periods 1983-1984 and 1993-1994 was found in the group of people treated surgically and chemically (respectively, 6.9% and 34.3%) (Table II).

Table II. Relative five-year survivals among ovarian cancer patients (ICD 183) by treatment methods. Warsaw 1983-1984 and 1993-1994

Treatment method	1983-1984	1993-1994
Surgery	52.4% (9.2%)	76.1% (10.1%)
Surgery and irradiation	78.6% (5.6%)	86.9% (6.8%)
Surgery, irradiation, chemotherapy	55.8% (10.3%)	55.7% (7.6%)
Surgery and chemotherapy	6.9% (3.9%) ^a	34.3% (4.9%) ^a
Chemotherapy	0.0%	17.5% (11.4%)
Irradiation, chemotherapy	0.0%	0.0%
Symptomatic	2.7% (2.7%)	1.5% (1.5%)

a) statistically significant difference $t=4.38$; $p<0.05$

The five-year relative survival rates among ovarian cancer patients were found lower in the Warsaw population than in the US population with all the disease advancement stages (Table III).

Table III. Relative five-year survivals among ovarian cancer patients (ICD 183) by advancement stage. Warsaw 1993-1994 and 1989-1996

Disease stage of advancement	Warsaw 1993-1994	USA 1989-1996
Local	72.7% (45.6%) [#]	94.6% (25%)
Regional	20.7% (19.3%)	79.0% (9%)
Generalised	1.1% (34.5%)	28.2% (60%)
Unspecified	0% (0.6%)	28.0% (6%)
Total	39.2%	50.4%

[#] The percent proportion of each advancement stage is given in brackets

Discussion

The study used five-year relative survivals, which rule out the effect of the age structure and, by this, allow comparisons between different populations.

The study was based on data from a population-based registry, which ruled out the selection-related error, although the five-year survival rates may potentially be underestimated because of a larger proportion of persons lost from sight in the years 1993-1994.

The normal distribution of the five-year relative survival rates allowed the application of the t-Student test.

Despite the fact that new methods for the early detection of ovarian cancer were introduced in the study period and modifications in the chemical treatment methods, no significant increase in the five-year relative survival rates were found in the Warsaw population suffering from ovarian cancer.

The discovered statistically significant improvement of the five-year relative survival rates found in ovarian cancer patients treated with surgical and chemical methods should be analyzed carefully because objective reasons (no data on the disease stage of advancement in cancer reporting cards submitted in the years 1983-1984) ruled out analyzing the stages of advancement.

Ovarian cancer is the gynecologic malignancy associated with the highest death rate. No modality has been shown as an effective screening method for this cancer. Women with a family history of ovarian cancer may bene-

fit from combined modality screening; prophylactic oophorectomy should be offered to those with hereditary ovarian cancer syndromes [9].

In Europe during the period 1978-1989 inter country differences in survival for ovarian cancers narrowed and improved probably in relation to the cisplatin-based treatment protocols [10].

The SEER study found that age was an independent prognostic factor in ovarian cancer and that decrease in survival rates was also observed within stage [11].

The five-year relative survival rates in the United States are clearly higher than in Warsaw, especially in the regional and generalized stage [5].

Warsaw has a higher rate of early and regional stages than the United States, although the five-year relative survival rates in the US are by 21.9% higher in patients with local advancement stage, by 58.3% in patients with regional advancement stage, and by 27.1% in patients with the advanced clinical stage of cancer. This may suggest either wrong classification of disease advancement stages (stage migration) resulting from insufficient diagnosis, or it may suggest lower access to professional treatment under Polish realities [12].

Conclusions

1. The periods of 1983-94 in Warsaw saw a statistically insignificant increase of the five-year relative survival rates among ovarian cancer patients (from 35.2 to 39.2%).
2. A statistically significant increase in the five-year relative survival rates was found in the study period among persons receiving surgical and chemical treatment (from 6.9 to 34.3%).
3. Lower rates of the five-year relative survivals were found in all the disease advancement stages in Warsaw than in the USA.

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References

1. Pawłęga J. Survival studies: Cracov Cancer Registry Experience. *Cancer Detection and Prevention* 1993; 17: 475-483.
2. Wronkowski Z et al. Survival in Cancer Patients in Poland. *Cancer Detection and Prevention* 1993; 17:469-474.
3. Berino F, Capocaccia R, Esteve J et al. *Survival of cancer patients in Europe. The Eurocare-2 study*. Lion: IARC Scientific Publications. No 151. 1999.
4. Balvert-Locht HR, Coebergh JW, Hop WCJ et al. Improved diagnosis of ovarian cancer in the Netherlands during the period 1975-1985. *Gynecologic Oncology* 1991; 42: 3-8.
5. SEER Cancer Statistics Review. 1973-1997. Department of Health and Human Services. 2000.

6. Hakulinen T, Abeywickrama K. A computer program package for relative survival analysis. *Comp Prog Biomed* 1987; 19: 197-207.
7. *Life Tables of Poland 1980. Central Statistical Office Information and Statistical Papers*. Warszawa: GUS; 1982.
8. *Life Tables of Poland 1990. Central Statistical Office Information and Statistical Papers*. Warszawa: GUS; 1992.
9. Lea JS, Miller DS. Optimum screening interventions for gynecologic malignancies. *Tex Med* 2001; 1997: 49-55.
10. Gatta G, Bielska-Lasota M, Verdecchia A, and the EUROCARE Working Group. Survival of European Women with Gynecological Tumours, During the Period 1978-1989. *European Journal of Cancer* 1998; 34: 2218-2225.
11. Kosary CL. FIGO stage, histology, histological grade, age and race as prognostic factors in determining survival for cancers of the female gynecological system: an analysis of 1973-1987 SEER cases of cancers of the endometrium cervix, ovary, vulva and vagina. *Semin Surg Oncol* 1994; 10: 31-46.
12. Hand R, Fremgen A, Chmiel JS et al. Staging procedures, clinical management, and survival outcome for ovarian carcinoma. *JAMA* 1993; 269: 1119-22.

Paper received: 19 June 2001

Accepted: 28 August 2001