

STATISTICAL STUDY ON MORTALITY AND FATALITY OF BREAST CANCER, IN ARAD COUNTY, BETWEEN THE YEARS 1999-2009

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ABSTRACT. Breast cancer is a major public health problem in most countries of the world. While in most EU countries mortality from breast cancer dropped significantly in the last 20 years, we cannot say the same about Romania. According to WHO estimates for Romania, after 2000, mortality due to breast cancer increased by 7%. In terms of Arad County, in the period 1999-2009 average index of breast cancer mortality in women in the nine-year study period is from 35.08 to 100,000 women.

Keywords: breast cancer, mortality, fatality, Arad County

INTRODUCTION

Breast cancer is a major public health problem, with an incidence in the European Union of 109.8 / 100,000 women / year and a mortality of 38.4 / 100,000 women / year (Morris P.J. and Malt R.A., 1994).

Breast cancer mortality in Romania rose from 11.2 per hundred thousand in 1960, 15.6 per hundred thousand in 1978, 19.00 per hundred thousand in 1988, 20.67 percent for thousands of women 1996, amounting in 2004 to 28.25 per hundred thousand women in 2006 to 23.88 percent for thousands of women.

In our country, two thirds of patients presented in stage III and IV, the situation can be explained on the one hand, the lack of cancer education population and on the other hand, by not applying the measures of early detection of the disease (Bălănescu I. and Al. Blidaru, 2003).

MATERIALS AND METHODS

This descriptive study analyzed the cases of breast cancer deaths in the county of Arad during the years 1999 to 2009. Statistics were taken from the Arad Center for Health Statistics Public Health Directorate and from Arad County Department of Statistics.

Statistics on breast cancer are produced by such comprehensive annual surveys, whose forms are completed by all health care units

and the cities of Arad County operated hospitals and performing primary or secondary research scientific.

To ensure the uniform collection, processing and analysis of research data in the statistical system the following elements are used:

Population Statistic:

- Arad County's total population of both sexes
- Arad County female population, consisting of two segments: a) age between 15 and 64 years, b) over 65 years;
- Arad female population affected by tumors of any kind, from: a) urban areas, b) rural areas
- Arad female population affected by breast cancer, from: a) urban area, b) rural areas;
- Arad female population affected by breast cancer, which is located in: a) Arad b) Lipova city c) Ineu City d) Chișineu Cris City e) Santana City; f) Sebiș City g) Gurahont City ;
- Arad female population affected by breast cancer, which is located in relation to the following stages of the disease: a) Advanced b) curable c) Specific
- Arad female population recorded with breast cancer during the years 1999 - 2009; (Drugan T. et al, 2001).

Time series. Data is available for the periods: 1999 - 2009, 2001 - 2009 2005 - 2009.

Level of disaggregation:

- Statistical data on cases of cancer, breast cancer, breast cancer incidence, fatality index etc.. are disaggregated by:
- Age groups: 15-64 years and over 65 years
- Sex: men and women
- Area of residence: urban and rural areas and towns of Arad County
- To find area hospital units;
- Geographical areas: plains, hills and mountains

Statistical data is collected through comprehensive annual statistical report type, containing the following indicators:

- Arad County in population (divided by sex and by state health);
- Arad County's population (people affected by any kind of tumors or by breast cancer);
- Female population of Arad County (people affected by any kind of tumors or by breast cancer);
- Evolution of breast cancer mortality, tumors of any kind;
- Fatality index (Țigan S. et al, 2001, Mureșan P., 1989).

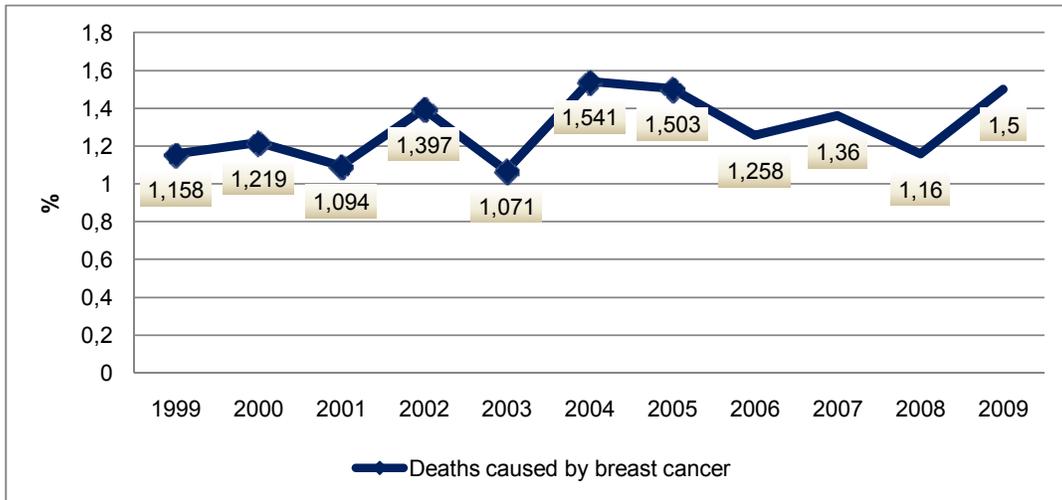


Fig. 1 Percentage distribution of deaths caused by breast cancer, reported the total number of deaths in 1999-2009 in Arad

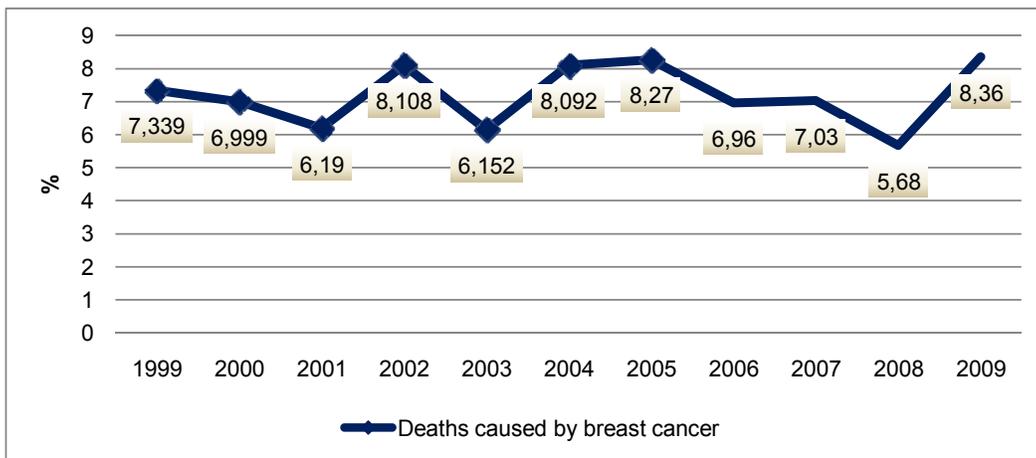


Fig. 2 Percentage distribution of deaths caused by breast cancer, the total number of deaths reported by the tumors in Arad County during 1999-2009

RESULTS AND DISCUSSIONS

Breast cancer in women is the first among malignant tumors in most countries, both the incidence and the mortality (Lippman M.E., 1988, Kelsey M.M., 1990, Colditz G.A., 1993).

The chart and the table describe the cases of deaths caused by breast cancer during 11 years of study and, in parallel, regardless of all deaths from natural causes, medical or accidental find that there is some increase between 1999 and 2009, but the chart shows a relatively high turnover, which means that we cannot submit a statistical algorithm evolution of these deaths from breast cancer.

Total deaths recorded in Arad County, year by year in the period under review, appears to be on a downward curve with two years of recorded increases compared to previous years. If in 1999 there were 6903 deaths in 2009 decreased the number of deaths in 6494, so we have a decrease of 409 cases. However in 2008 there were only 6072 deaths in 2009 so we have an increase of 422 cases. A new increasing was registered in 2002. The population of Arad County is characterized by negative demographic indices and then the involution of cases of death seems to pursue a parallel decline (Fig. 1).

Total cancer deaths are part of a trend with a slight increase until 2008, with slight fluctuations, as in 2009 will be a decrease from 2008. The report covered two types of deaths is high turnover. In 1999 the share of deaths caused by breast cancer in relation to the total deaths from cancer was 7.339% and 8.36% in 2009. In comparison with 1999, decreases were recorded in 2000, 2001, 2003, 2006, 2007 and 2008, the percentages being visible in the chart to a suggestive way. In the period under study there were two peaks in 2002 and 2004-2005, but whose values are below the percentage share of 2009 (Fig. 2).

Due to gaps in the statistical record of the distribution of breast cancer deaths reported age we have to reduce the period of analysis at 9 years respectively between 2001 and

2009. In the meantime we have a large fluctuation in both segments of the population up to 64 years and the population over 65 years. Data describing the deaths of people aged up to 64 years show a sinusoidal oscillation. Regarding the segment of the population aged over 65 we have a turnover that doesn't seem to ever follow a rule. If in 2001 there were 28 deaths registered, in 2002 their number reached 63. A high level of deaths is recorded between 2004 and 2009 (Fig. 3).

Distribution ratio of breast cancer deaths in rural and urban areas indicate an overall higher proportion of cases of death in urban areas. In absolute numbers, in the entire period 2001-2009 we have 768 deaths, of which 484 urban and 284 rural. Overall, deaths in rural areas are only 36.97% (fig. 4).

The number of deaths reported to the advanced stage is very high compared with other stages and knows some oscillations that share this type of death being approximately 84% between 2001 and 2009 (Fig. 5).

Mortality expressed in the above chart is a highly oscillating trend, but overall we have a certain increase in deaths. This increase in the number of deaths ranges from 71 cases in 2001, 2003 and 2008 and 99 and 101 in 2005 and 2004. However, the percentage increase is more obvious because in 1999 we have a mortality index of 16.78 cases per 100,000 inhabitants, 21.42 cases in 2009 to 100,000 inhabitants. In 1999 the number stood at 476,624 inhabitants. In 2009 this number decreased to 457,306 (19,318 inhabitants). The percentage increase resulting especially from the population decline (fig. 6).

Breast cancer mortality in women is increasing in the period 2001-2009. Index of mortality in 2001 was 27.9 per 100,000 inhabitants (women) and in 2009 reached 41.02 to 100,000 inhabitants (women). Between these limits there is a peak in 2004 when the mortality index was 41.7 to 100,000 women, while in 2008 this index varies, decreasing from 29.52 to 100,000 women.

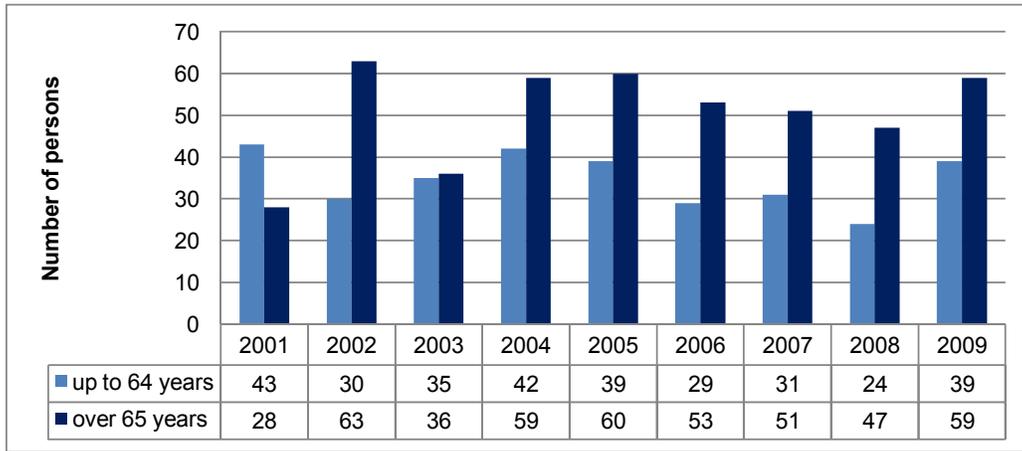


Fig. 3 Distribution of deaths caused by breast cancer, age reported in Arad County during 2001-2009

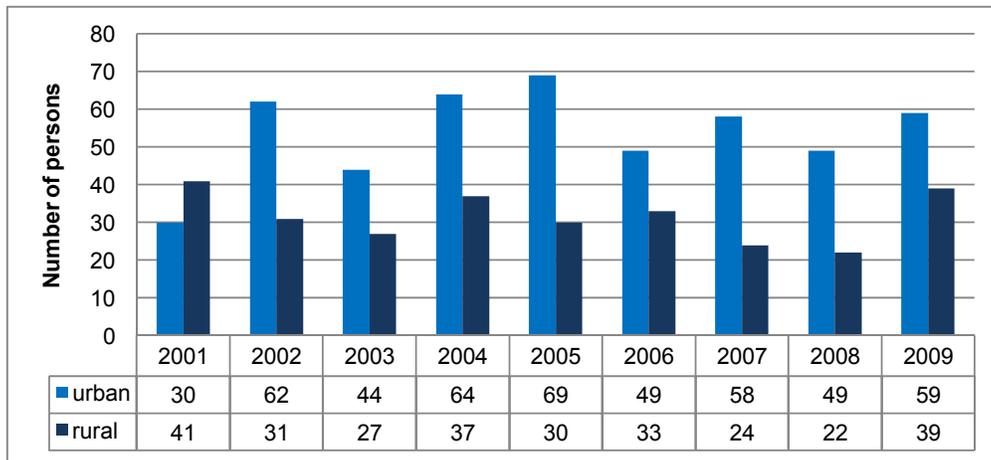


Fig. 4 Distribution of breast cancer deaths reported in the environment of origin, in Arad County in the period 2001-2009

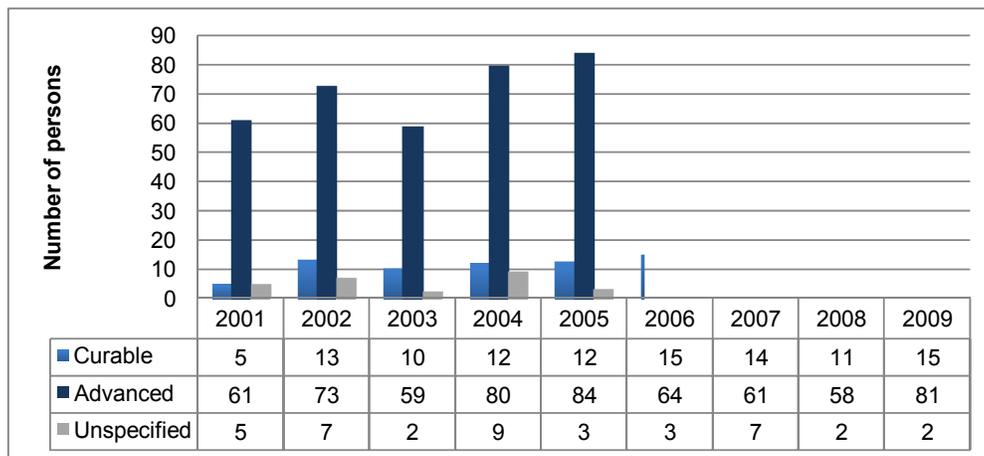


Fig. 5 Distribution of breast cancer deaths by disease stage

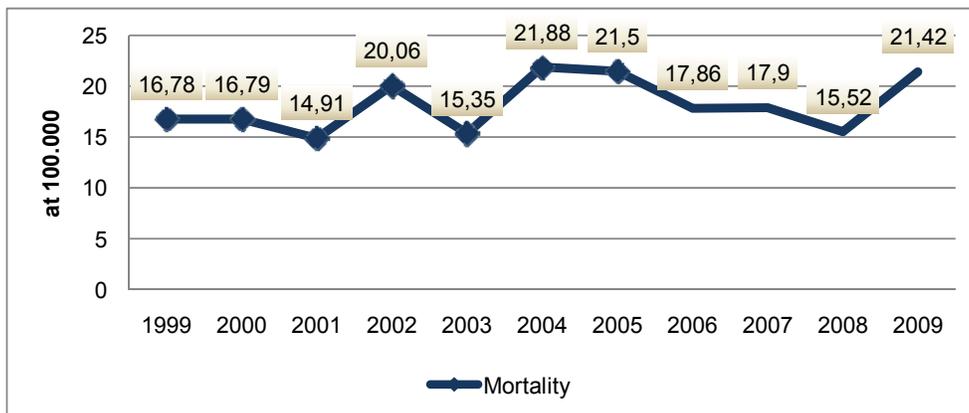


Fig. 6 Total mortality (women and men) with breast cancer in the county of Arad

The average index in breast cancer mortality in women in the nine-year study period is from 35.08 to 100,000 women, which is a great figure (fig. 7).

During the period 2001-2009 the number of deaths caused by breast cancer in women aged between 15 and 64 years present a slight decrease respectively from 43 in 2001 to 39 in 2009 so that the average mortality is 34 cases per year. In contrast, the population of women over 65 years the number of deaths is a highly visible growth. If in 2001 there were recorded

28 deaths and 59 deaths in 2009, within these limits we peak two years 2002 and 2005 when there were 63 and 60 deaths (fig. 8).

In 2005 breast cancer deaths in women were 97. Since the number of patients with breast cancer in women rose by 300 cases during 2005-2009, then obviously there has been a decrease in percentage of fatality index. A peak of 6.28% is registered in 2005, but in 2008 is registered a minimum value of this index, 3.94% respectively (fig. 9).

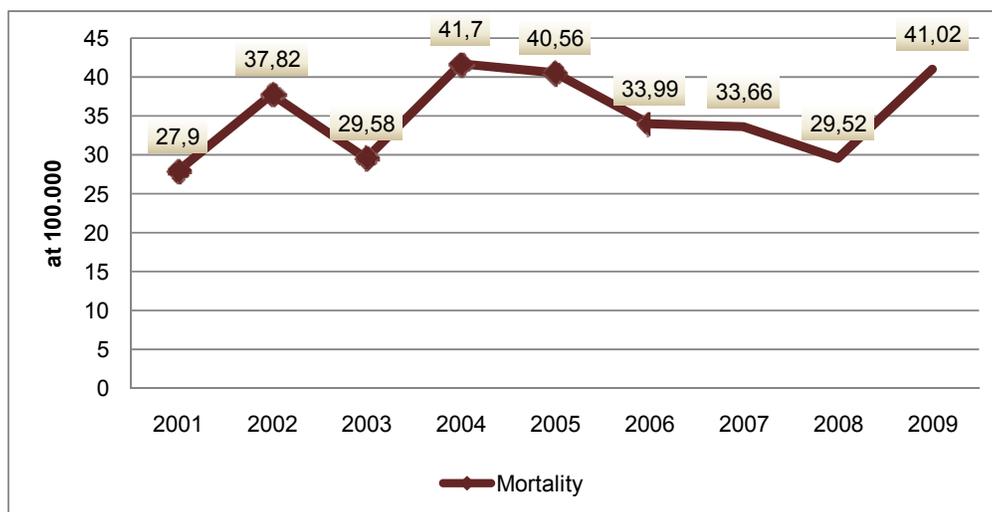


Fig. 7. Mortality in women with breast cancer in the county of Arad

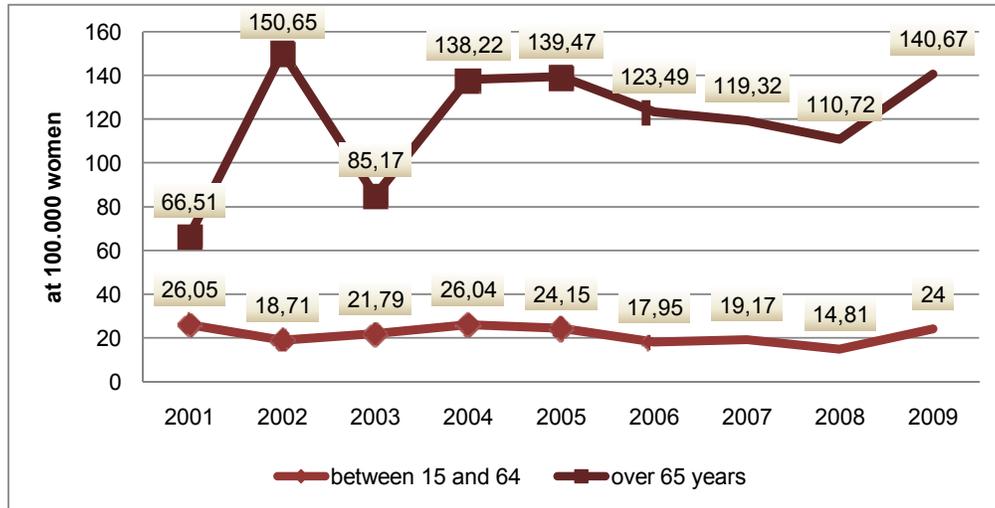


Fig. 8 Breast cancer mortality in women by age groups

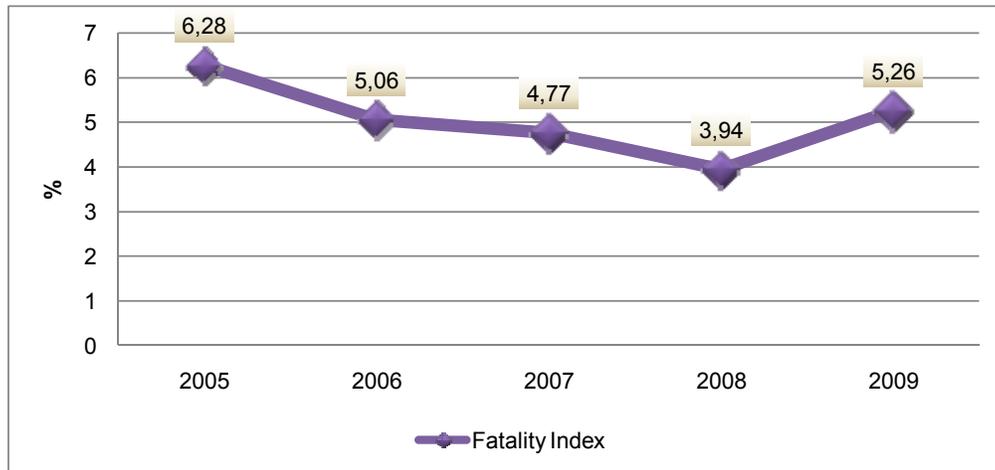


Fig. 9 Fatality index of breast cancer in women, Arad County

CONCLUSIONS

Breast cancer deaths have a high percentage compared with other cancer deaths.

The number of deaths is much higher in the population over 65 years than in the up to 64 years. Percentage share of deaths caused by breast cancer in the population over 65 years is 59.37%, and breast cancer deaths in a population of up to 65 years of 40.63%. If we consider that the population aged over 65 is much lower than the segment of the population aged 15 and 64, then the remaining 20 percent clearly indicates the large share of deaths in elder population.

The number of deaths in urban areas, which accounted for 63.02% of all deaths from breast cancer is explained by the higher

number of new cases registered every year in this environment. The large share of deaths in the advanced stage of disease indicates indisputably serious shortcomings of the health of medical education.

The large share of deaths registered in Arad explained by the large number of hospitals and doctors, to other cities in the county. Arad has a Municipal Hospital Oncology Department.

Death from breast cancer in women has certain constancy; in absolute terms we have an average of 77 deaths per year. Breast cancer deaths in women necessarily imply the organization of programs for early detection of the disease, which by default would lead to a real decrease in the number of deaths from breast cancer.

The record follows a large increase in cancer patients with tumors of any kind, both women and men. In 2005 the share of women with tumors was 58.01% and in 2009 this ratio has a negligible recoil reaching 57.98%.

The decline in the fatality index in breast cancer in women can be interpreted as a consequence of medical intervention on patients being curable stage. Increased fatality index in 2009 compared to 2008 seems to contradict the effectiveness of medical intervention. However, if we consider the index of 2009 is lower than in 2005, that during the five years the number of female patients increased by 300 cases, then credited with more than hope for advances in medical care and intervention in general.

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