

Features of breast cancer incidence in Astana city

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Introduction

Cancer is an important social hygienic problem in the majority countries of the world. Solution of this problem is unthinkable without deep analysis of the spreading features of these diseases in the human society. Role study of separate factors and its complexes in the beginning of malignant tumors of the mammary gland and measures development of its rational prophylaxis, and also general criteria estimation of the oncological services condition gives necessary information for the planning and improvement of oncological aid on the state and regional levels.

Astana is the capital of the Republic of Kazakhstan – specific city with the number of female population about 307 thousand people (2008), with persons' predominating of young age (till 30 years – 44.7 %), which differs by climate features, geographical location, ecological differences, so characteristic to large cities of the world. Besides, it is presented by special medical geographical region of the Kazakhstan, which requires particular approach for the solution of series important medical problems of population. It is important to know true picture of incidence to reveal the origin causes of oncological diseases among population of Astana city. This researching is devoted to the features study of BC incidence of female inhabitants of the capital.

Materials and Methods

Research is retrospective during 1999-2008 years. Data of the Kazakh research institute of oncology and radiology is served as materials of investigation. Data about number of female population of the statistics Agency of the Republic of Kazakhstan was used. Extensive, age, crude (RI) and standardized (World standard, WS) indexes of BC incidence were calculated according to the general methods of medical biological statistics. Average annual significances (M), average mistake (m), 95% confidence interval (95% CI), average annual growth tempos (T_g , %) were determined.

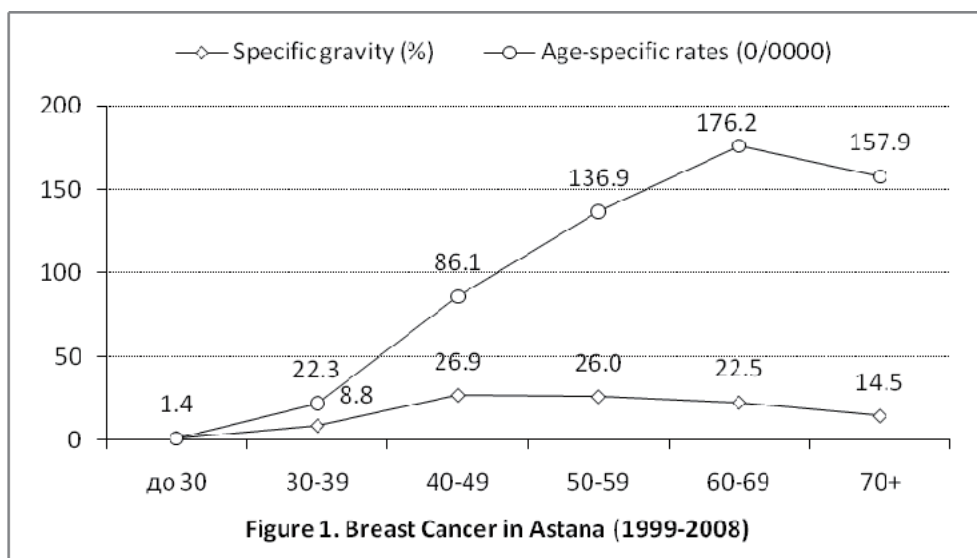
Results

1,173 patients with breast cancer were revealed in the capital of Kazakhstan during 1999-2008, which composed 4.1% from all malignant tumors of mammary gland in the republic (28,707 patients). Middle age of patients with breast cancer composed 56.4 ± 0.4 years, and in the dynamics this index had a tendency to the growth from 55.2 ± 1.8 years (1999) till 58.9 ± 1.1 years in 2008, at equalization indexes had a tendency to the growth ($T_g = +0,2\%$).

Special gravity of patients with breast cancer in Astana city was the highest in the age 40-59 years (52.9%) (Figure 1). Age indexes of breast cancer had a unimodal incidence growth with peak at 60-69 years – $176.2^{0}/_{0000}$ (Figure 1). When the equivalent curve of coefficient “growth tempo” index of breast cancer incidence in the age group 30-39 years is in 15.9 times higher, than at patients in the age till 30 years, and in 40-49 years – in 3.9 times, than in 30-39 years. Further in the following age group 50-59 years this coefficient is 1.6, in 60-69 years – 1.3 and in 70 years and older – 0.9. In the lasting age groups the growth tempo of incidence is higher in 98-126 times, than at persons till 30 years. In connection with the city conditions maximum increase of breast cancer frequency is established in the age groups 60-69 years and 70 years and older, thus we consider, that main factors, assisting to the frequency increase of this cancer form, more significant influence in the mentioned age groups.

Average annual crude rate of breast cancer (BC) incidence at female inhabitants of the capital composed $46.3 \pm 1.9^{0}/_{0000}$ (95% CI=42.5-50.1⁰/₀₀₀₀). In the dynamics crude incidence rate had a tendency to the growth from $49.3^{0}/_{0000}$

(1999) till 58.2⁰/₀₀₀₀ in 2008. Average annual growth tempo composed +1.9%. The incidence crude also was established in equalization of this index ($T_g=+0.2\%$).



Standardized index (WS) of incidence for the studied period composed 44.7 ± 1.9 (95% CI=41.1-48.4⁰/₀₀₀₀) and in the dynamics has grown ($T_g=+2.1\%$), that also was established in equalization of this index ($T_g=+0.2\%$).

It is established that growth tempos of BC in separate age groups of females of Astana city were not identical. Thus, equalized incidence indexes at females till 30 years ($T_g=-0.7\%$), 30-39 years ($T_g=-3.9\%$) and 40-49 years ($T_g=-2.4\%$) had a tendency to the decrease. Trends of BC incidence have grown in the age groups 50-59 years ($T_g=+0.4\%$), 60-69 years ($T_g=+1.7\%$) and 70 years and older ($T_g=+2.2\%$).

Conclusions

Trends' decrease of age incidence indexes till 50 years leads to the middle age of patients with BC in the capital had a tendency to the «growing old» from 55.2 till 58.9 years for the studied period. Age indexes of BC were higher at the age 60-69 years (176.2⁰/₀₀₀₀). In the dynamics rough and standardized indexes (WS) of BC incidence had a tendency to the growth.