

Breast Cancer in Kazakhstan: Epidemiological aspects

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Introduction

Epidemiological features study of the breast cancer (BC) spreading and an attempt to find the differences' causes of its frequency assist to knowledge extend in the field of etiology and development of prophylactic measures to fight with this pathology. Materials of epidemiological investigations indicate that BC incidence is not identical in different country. Thus, about 1 million of new cases of BC are revealed annually in the world according to the data of International union against cancer, prognosing the number growth of diseased people to 1.5 million to the 2010 year.

This research is devoted to the study of BC incidence of female population in the Kazakhstan.

Materials and Methods

Data of the Kazakh research institute of oncology and radiology is served as materials of investigation, concerning to the BC. Investigation is retrospective during 10 years (1999-2008). 28,707 patients with BC were revealed totally for the first time in the republic. Data about number of female population of the statistics Agency of the Republic of Kazakhstan was used. Extensive, age, crude (CR) and standardized (World, Europe, Africa) 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

28,707 cases of BC were registered for the first time in the Kazakhstan for the studied period. Higher specific

Age, years	Number (%)	Rate, ⁰ / ₀₀₀₀		
		M±m	95% CI	T_g , %
<30	262 (0.9)	0.7±0.1	0.6-0.8	-5.5
30-39	2,090 (7.3)	18.5±0.3	17.9-19.0	-0.2
40-49	7,484 (26.1)	69.4±1.1	67.3-71.5	-0.8
50-59	7,466 (26.0)	107.1±2.9	101.4-112.8	+3.0
60-69	6,306 (22.0)	115.8±3.6	108.7-123.0	+4.1
70+	5,099 (17.8)	112.2±2.8	106.8-117.7	+2.5
Total	28 707 (100.0)	36.7±0.9	35.0-38.4	+2.8

Table 1. Breast Cancer in Kazakhstan (1999-2008)

gravity of patients was 40-59 years (52.1%) (Table 1).

Middle age of patients with BC composed 58.1±0.2 years. In the dynamics the average age of patients increased from 57.5±0.3 years (1999) till 59.0±0.3 years in 2008, and average annual growth tempo composed +0.3%.

Average annual rough index of BC incidence composed 36.7±0.9⁰/₀₀₀₀ (95% CI=35.0-38.4⁰/₀₀₀₀). In the dynamics

rough index of incidence had a tendency to the growth from $31.5 \pm 0.6^{0/0000}$ (1999) till $40.6 \pm 0.7^{0/0000}$ in 2008 ($T_g = +2.8\%$).

Average annual age indexes of BC incidence had unimodal growth with peak at 60-69 years – $115.8 \pm 3.6^{0/0000}$ (Table 1). Index of incidence at 30-39 years was in 26.4 times higher of the index till 30 years. At 40-49 years the index was in 3.8 times higher than in preceding group. Incidence at 50-59 was in times higher than at 40-49 years. When the present differences in the age indexes of BC incidence were statistically significant ($p < 0.05$). Indexes of BC incidence hadn't statistically significant differences in the age groups older than 50 years ($p > 0.05$).

In the dynamics age indexes of BC incidence had different tendency. So, the decrease of incidence indexes is marked in the age groups till 30 years, 30-39 and 40-49 years. When more marked decrease is noted in the age group till 30 years ($T_g = -5.5\%$). The growth of age indexes of BC incidence was noted at 50-59 years ($T_g = +3.0\%$), 60-69 years ($T_g = +4.1\%$) and 70 years and older ($T_g = +2.5\%$).

Its elimination with different population standards was carried out with the aim of possible influence exception

ASR	per 100,000		$T_g, \%$
	M±m	95% CI	
World	33.2 ± 0.5	32.1-34.2	+2.0
Europe	44.8 ± 0.8	43.3-46.3	+2.1
Africa	22.1 ± 0.3	21.6-22.7	+1.3

Table 2. Age-standardized Incidence Rates of Breast Cancer in Kazakhstan (1999-2008)

of age composition of female population on frequency appearance of BC in Kazakhstan, and non-homogenous standardized indexes of incidence were received (Table 2), where its 95% of CI in all cases was not laid.

In the dynamics the standardized indexes of BC incidence had a tendency to the growth: World ($T_g = +2.0\%$), Europe ($T_g = +2.1\%$) and Africa ($T_g = +1.3\%$).

Conclusions

BC grows for the last years in Kazakhstan. Average age of patient with BC had a tendency to the «growing old» from 57.5 years till 59.0 years. In the dynamics the rough index of BC incidence grows ($T_g = +2.8\%$). Age indexes of BC were higher in the age of 60-69 years ($115.8 \pm 3.6^{0/0000}$). In the dynamics age indexes of BC had a tendency to the growth in the age groups older than 50 years. Standardized indexes of BC incidence statically significantly have differed from rough index and in the dynamics also had a tendency to the growth.