

ESOPHAGEAL CANCER

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Epidemiology of esophageal cancer in the Republic of Kazakhstan in 2006-2015

Esophageal cancer ranks 10 among cancer pathologies. Kazakhstan has registered more than 1,300 cases of esophageal cancer each year and about 1,000 deaths from this type of cancer.

Purpose of the study: the incidence of esophageal cancer in the Republic of Kazakhstan in 2006-2015 for the purpose of target anti-cancer activities.

Materials and methods: The study included processing of data of all the patients with esophageal cancer registered in the Republic of Kazakhstan in 2006-2015. The dynamics of esophageal cancer incidence in men and women was studied in 10-years' time intervals and age intervals.

Basis for the study was the statistical data of the RK Agency on the number, sex-, age- and ethnic structure of population by the regions of the country. Standardization was done using direct method and world population.

Results and conclusions: During the studied period, the share of esophageal cancer among all the malignant tumours in the Republic of Kazakhstan amounted to 2.3%. The intensive incidence during 10 years were changing in dynamics from 9.3‰ in 2006 to 9.6‰ in 2007, with a decrease starting from 2007 to reach 7.7‰ by the end of the study.

The leading regions in esophageal cancer incidence were the Qyzylorda (17.2‰) and West Kazakhstan (17.1‰) regions. High incidences were also registered in Aktobe (13.1‰), Atyrau (12.2‰), and Mangistau (11.5‰) regions.

The lowest esophageal cancer incidences were registered in the cities of Almaty (4.4‰) and Astana

(4.9‰), the Almaty (5.8‰) and South Kazakhstan (6.8‰) regions and some northern areas of Kazakhstan.

Keywords: esophageal cancer, morbidity, mortality, intensive indicators.

In 2015, esophageal cancer ranked 10th in the structure of cancer pathologies. Esophageal cancer is one of the 5 main causes of death from cancer, and the main cause of death in 900,000 fatal cases [1, 2].

During the 10 years of study, 13354 cases of esophageal cancer were registered in Kazakhstan what amounts to 2.3% of all the malignant tumours [3, 4].

The analysis showed an upward trend of average annual intensive incidence rates of esophageal cancer in the RK in different age groups in dynamics in the studied period. No cases were registered at the age of 00-29 for both sexes. In the age group of 30-39, the incidence showed an average increase from 0.4‰ in 10 years. The incidence in the age group of 40-49 amounted to: 2.6‰ among women, 4.4‰ among men, and 3.5‰ for both sexes. In the age group of 50-59, the incidence of esophageal cancer has grown from 9.1‰ to 22.9‰. The growth of incidence of this cancer in the age group of 60-69 has been significant: 65.7‰ among men, and 32.4‰ among women per 100,000.

Age-related indicators of esophageal cancer incidence among male and female population of Kazakhstan have grown during the study period due to the population growth. The peak of incidence was in the age groups of 60-69 and 70+, with bimodal growth pattern (Fig. 1).

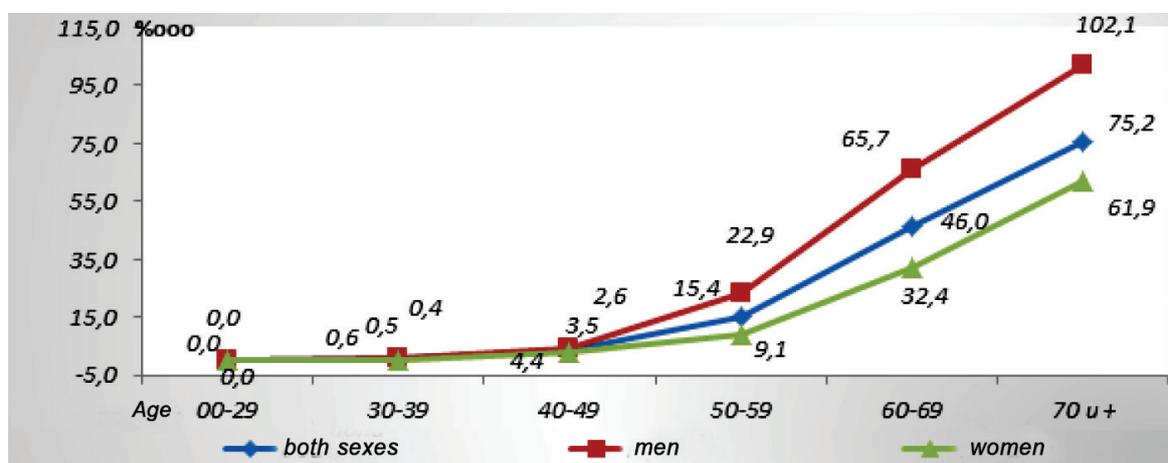


Figure 1 – Average annual sex- and age-related intensive incidence indicators of esophageal cancer in the RK, 2006-2015

The intensive incidence during 10 years were changing in dynamics from 9.3‰ in 2006 to 9.6‰ in 2007, with a decrease starting from 2007 to reach 7.7‰ by the end of the study (Fig. 2).

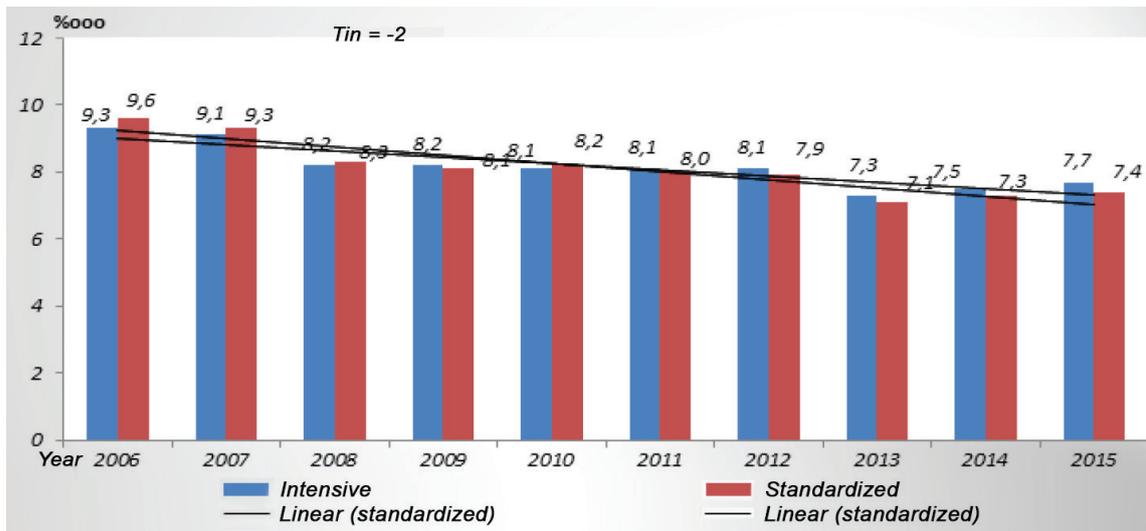


Figure 2 – Intensive and standardized incidence indicators of esophageal cancer in the RK, 2006-2015

Intensive and standardized indicators of incidence of esophageal cancer in the male population tended to decrease during the study period to reach 9.0‰ in 2015 vs. 10.3‰ in 2006, at the beginning of the study

(Fig. 3). The rates of intensive and standardized indicators of incidence did not coincide. The age structure of the national population did not coincide with the world standard.

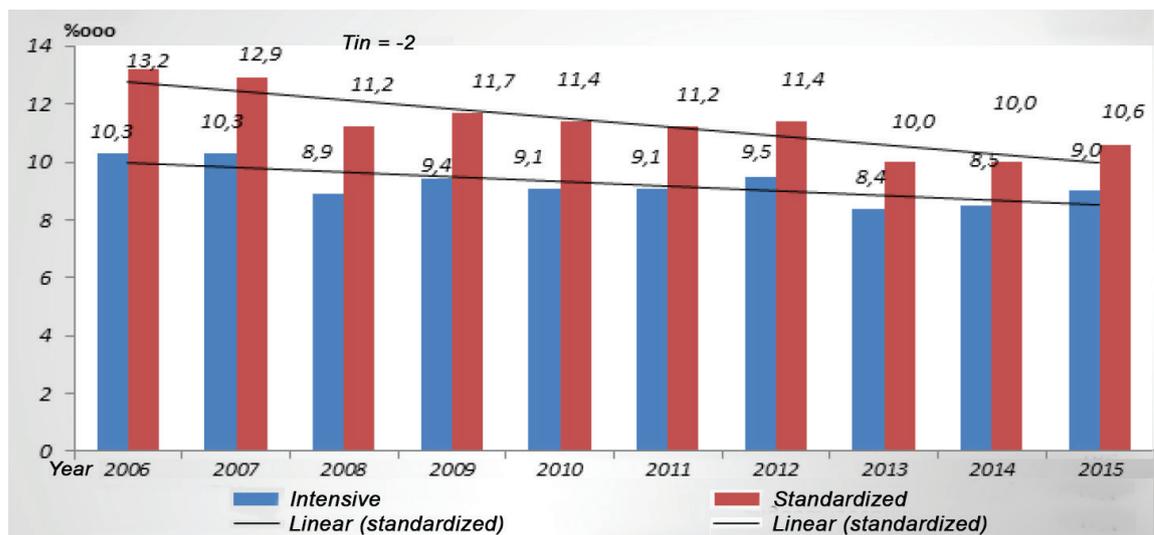


Figure 3 – Intensive and standardized incidence indicators of esophageal cancer among male population of the RK, 2006-2015

Among women, the indicators have decreased in 2006-2015 from 8.5‰ in the beginning of the period to 6.5‰

in the end of the study (Fig. 4). The rates of intensive and standardized indicators of incidence coincided.

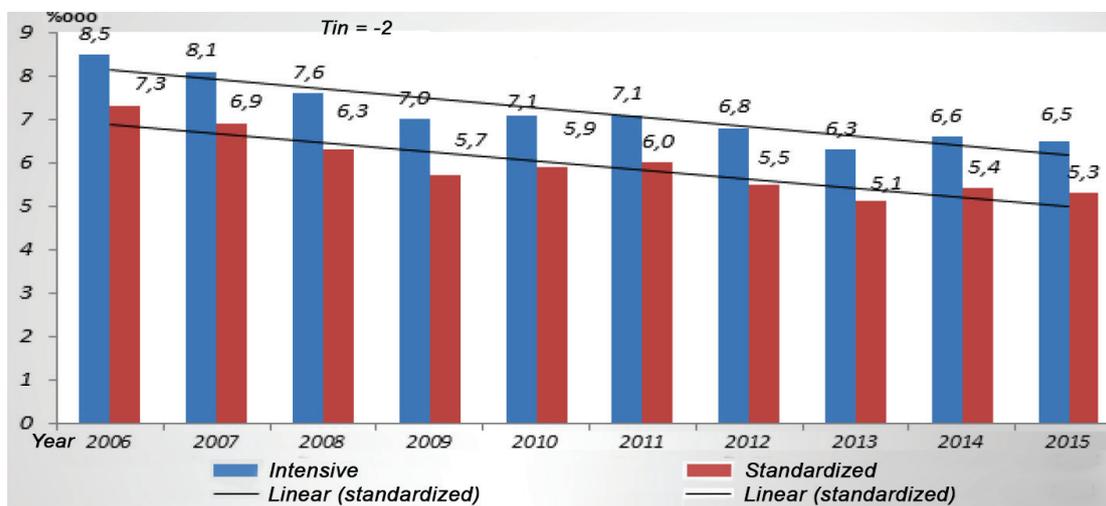


Figure 4 – Intensive and standardized incidence indicators of esophageal cancer among female population of the RK, 2006-2015

High share of esophageal cancer in all population of the RK (Fig. 5) was growing in all the age groups. In the age group of 60-69, the share among men (32.8%) was

higher than among women (28.1%). The peak was in the age group of 70+ among women (52.1%) while the share among men in that age group amounted to 35.5%.

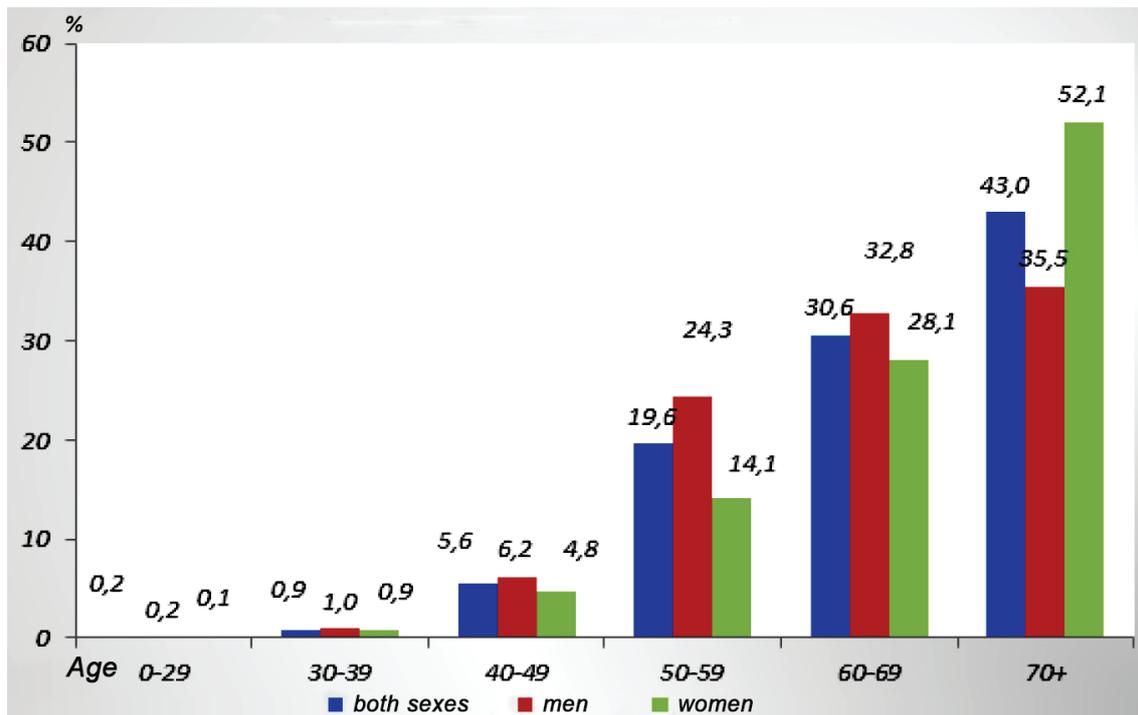


Figure 5 – The share of esophageal cancer by age groups in the RK, 2006-2015

The total annual average intensive incidence of esophageal cancer in Kazakhstan was equal to $8.2 \pm 0.2\text{‰}$, with the standardized (world) incidence of $8.1 \pm 0.3\text{‰}$.

Conclusions: Qyzylorda (17.2‰) and West Kazakhstan (17.1‰) regions were leading in esophageal cancer incidence. High incidences were also registered in Aktobe

(13.1‰), Atyrau (12.2‰), and Mangistau (11.5‰) regions.

The lowest esophageal cancer incidences were registered in the cities of Almaty (4.4‰) and Astana (4.9‰), the Almaty (5.8‰) and South Kazakhstan (6.8‰) regions and some northern areas of Kazakhstan (Fig. 6).

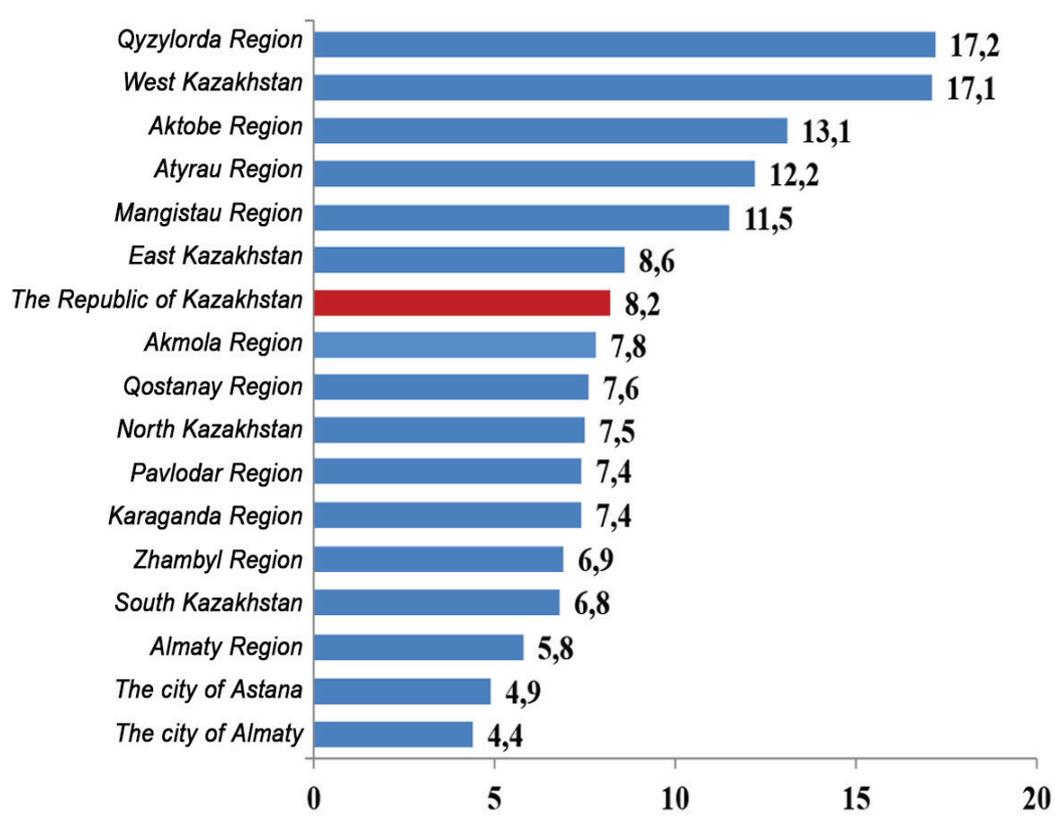


Рисунок 6 – Среднегодовые показатели заболеваемости раком пищевода по областям РК за 2006-2015 годы

Age-related specifics of prevalence of esophageal cancer in the RK in the studied period were characterized by the tendency towards an increase in the incidence rate in dynamics in the age groups of 60-69 and 70+ and a bimodal pattern of growth.

The analysis of age- and sex-related incidence in the RK during 10 years (2006-2015) showed an age-dependant incidence rate in dynamics, that is, the incidence of esophageal cancer was growing with the age.

In this paper, we were not considering the ethnical structure of the RK population though the ethnical factor had a certain influence on the incidence of some forms of cancer, especially, esophageal cancer, in Kazakhstan. Regional differences caused the peculiarities of the nature of nutrition due to differences in customs, habits of the peculiarities of the everyday life of the population living in certain regions of the Republic of Kazakhstan. Those differences have undoubtedly influenced the incidence of esophageal cancer. The incidence of esophageal cancer was higher in the regions where people mainly consumed

food rich in starch (bread, potato, ground corn products) and lacked animal protein, milk, fresh vegetables and fruits. Demographic changes in the population, its regional differences were the main factors affecting the incidence of malignant tumours in general, and of esophageal cancer in Kazakhstan in particular.

References

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