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Medical Sciences

Cancer Incidence and Mortality - Major Patterns in GLOBOCAN 2012, Worldwide and Georgia

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ABSTRACT. Estimates of the worldwide incidence and mortality from 27 major cancers and for all cancers combined for 2012 are now available in the GLOBOCAN series of the WHO International Agency for Research on Cancer. We review the sources and methods used in compiling the national cancer incidence and mortality estimates, and briefly describe the key results by cancer site worldwide and in Georgia. Overall, there were 14.1 million new cases and 8.2 million deaths in 2012. More than 12000 new cancer cases and more than 7000 deaths were estimated in 2012 in Georgia. *© 2015 Bull. Georg. Natl. Acad. Sci.*

Key words: *cancer, incidence, mortality, prevalence.*

Cancer Worldwide

Incidence. Cancer is a leading cause of disease worldwide. The estimated 14.1 million new cancer cases occurred in 2012. Lung, female breast, colorectal and stomach cancers accounted for more than 40% of all cases diagnosed worldwide. In men, lung cancer was the most common cancer (16.7% of all new cases in men). Breast cancer was by far the most common cancer diagnosed in women (25.2% of all new cases in women) [1,2,3].

Mortality. Cancer is a leading cause of death worldwide, with 8.2 million deaths in 2012. More than half of all cancer deaths each year are due to lung, stomach, liver, colorectal and female breast cancers. Approximately 44% of cancer cases and 53% of cancer deaths occur in countries at a low or medium level of the Human Development Index (HDI).

Prevalence. 32.5 million people diagnosed with cancer within the five years previously were alive at the end of 2012. Most were women after their breast cancer diagnosis (6.3 million), men after their prostate cancer diagnosis (3.9 million), and men and women after their colorectal cancer diagnosis (3.5 million).

Healthy Years of Life Lost (or Disability Adjusted Life Years, DALYs) - are the sum of life years lost to premature mortality (deaths before the age of 80 years for males and 82.5 for females) and the years lived with disability, given as a number or as a standardised rate per 100,000).

The estimated 169.3 million years of healthy life

Table 1. Estimated incidence, mortality and 5-year prevalence: Georgia, both sexes

Cancer	Incidence			Mortality			5-year prevalence		
	Number	(%)	ASR (W)	Number	(%)	ASR (W)	Number	(%)	Prop.
Lip, oral cavity	205	1.7	2.6	63	0.9	0.8	443	1.8	12.3
Nasopharynx	57	0.5	0.9	27	0.4	0.4	102	0.4	2.8
Other pharynx	103	0.8	1.4	70	1	0.9	209	0.8	5.8
Oesophagus	48	0.4	0.6	45	0.6	0.6	41	0.2	1.1
Stomach	711	5.8	9.6	597	8.2	7.6	864	3.5	24
Colorectum	605	4.9	8.5	350	4.8	4.6	1239	5	34.5
Liver	439	3.6	6	421	5.8	5.4	248	1	6.9
Gallbladder	35	0.3	0.5	33	0.5	0.4	45	0.2	1.3
Pancreas	182	1.5	2.3	177	2.4	2.2	121	0.5	3.4
Larynx	416	3.4	5.7	158	2.2	2.1	1059	4.3	29.5
Lung	1129	9.1	15.9	1011	14	13.9	934	3.8	26
Melanoma of skin	105	0.8	1.7	38	0.5	0.5	240	1	6.7
Breast	1541	13	44	530	7.2	13.2	5060	21	260
Cervix uteri	425	3.4	14.2	200	2.7	5.7	1122	4.5	57.7
Corpus uteri	432	3.5	14.2	147	2	3.9	1584	6.4	81.5
Ovary	128	1	3.7	82	1.1	2.1	304	1.2	15.6
Prostate	570	4.6	18.6	278	3.8	7.6	1407	5.7	85.3
Testis	82	0.7	3.3	28	0.4	1	278	1.1	16.9
Kidney	167	1.4	2.7	104	1.4	1.6	351	1.4	9.8
Bladder	331	2.7	4.1	133	1.8	1.5	813	3.3	22.6
Brain, nervous system	610	4.9	8.5	352	4.8	4.6	880	3.6	24.5
Thyroid	88	0.7	1.7	26	0.4	0.4	209	0.8	5.8
Hodgkin lymphoma	69	0.6	1.1	29	0.4	0.4	174	0.7	4.8
Non-Hodgkin lymphoma	148	1.2	2.6	91	1.2	1.4	239	1	6.7
Multiple myeloma	35	0.3	0.6	26	0.4	0.4	42	0.2	1.2
Leukaemia	214	1.7	3.3	161	2.2	2.3	194	0.8	5.4
All cancers excl. non-melanoma skin cancer	12361	100	181	7319	100	97.9	24708	100	688

Incidence and mortality data for all ages. 5-year prevalence for adult population only.

ASR (W) and proportions per 100,000.

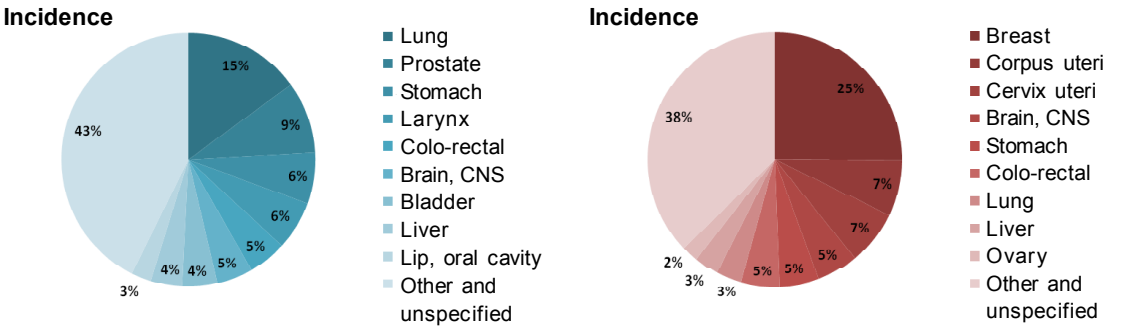

Fig. 1. Most frequent cancers (ranking defined by total number of cases) in men and women. Georgia, 2012.

were lost globally because of cancer in 2008. Colorectal, lung, female breast and prostate cancers were the main contributors in most regions of the world, explaining 18%-50% of the total healthy years lost.

World Cancer Trends

Approximately 44% of cancer cases and 53% of cancer deaths occur in countries at a low or medium level of the HDI.

As low HDI countries become more developed through rapid societal and economic changes, they are likely to become "westernised". As such, the pattern of cancer incidence is likely to follow that seen in high HDI settings, with likely declines in cervix uteri and stomach cancer incidence rates, alongside increasing incidence rates of female breast, prostate and colorectal cancers. This "westernisation" effect is a result of reductions in infection-related cancers, outweighed by an increasing burden of cancers more associated with reproductive, dietary and hormonal risk factors[1, 2, 3].

Data for cancer frequency by country. Age-standardised rate for all cancers (excluding non-melanoma skin cancer) ordered by the countries with the 50 highest rates.

Both sexes

- The highest cancer rate for men and women together was found in Denmark with 338 people per 100,000 being diagnosed in 2012.
- The age-standardised rate was at least 300 per 100,000 for nine countries (Denmark, France, Australia, Belgium, Norway, United States of America, Ireland, Republic of Korea and The Netherlands).
- The countries in the top ten come from Europe, Oceania, Northern America and Asia.

Men

- The highest cancer rate was found in France with 385 men per 100,000 being diagnosed in 2012.
- The age-standardised rate was at least 350 per 100,000 in eight countries (France, Australia, Norway, Belgium, Martinque, Slovenia, Hungary and Denmark).
- The countries in the top ten come from Europe, Oceania and the Americas.

Women

- The highest cancer rate was found in Denmark with 329 women per 100,000 being diagnosed in 2012.
- The age-standardised rate was at least 280 per 100,000 for Denmark, United States of America, Republic of Korea, The Netherlands and Belgium.
- The countries in the top ten come from Europe, Oceania, Asia and Northern America.

This factsheet would not have been possible without the data collected and available from population-based cancer registries. Knowledge about the cancer burden enables the development, implementation, monitoring and evaluation of cancer strategies that prevent, cure and care. This knowledge lacks in many low- and middle income countries, making cancer control efforts less effective [4, 5].

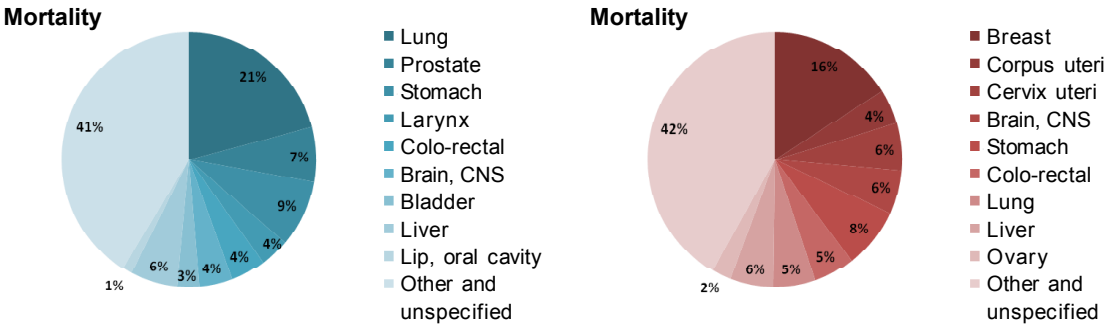

Fig. 2. Most frequent cancer death in men and women. Georgia, 2012

Projections to 2030

If recent trends in major cancers are seen globally in the future, the burden of cancer will increase to 23.6 million new cases each year by 2030. This represents an increase of 68% compared with 2012 (66% in low and medium HDI countries and 56% in high and very high HDI countries). In the European Union, there are currently an estimated 2.66 million new cancer cases and 1.28 million cancer-related deaths per year. Moreover, due to the effects of population growth and ageing, the burden of cancer in Europe is projected to increase in the coming years and decades [1].

Cancer in Georgia

The International Agency for Research on Cancer (IARC), the specialized cancer agency of the World Health Organization (WHO) estimated the numbers of new cancer cases and deaths that occurred in the World and published the most recent data on incidence, mortality, and survival by populations and cancers. This data can be used as a resource for cancer control planning at the state level, as well as to address questions from the media or constituents. They are encouraged to use it with state and local officials, reporters, and other public health and advocacy groups in local communities.

According to the latest WHO/IARC data, published in February 2014, there were more than 12.000 new cancer cases in Georgia in 2012 [1].

Table 1 presents the estimated numbers of new cases of invasive cancer in Georgia in 2012. The overall estimate of 12361 new cases is the equivalent of more than 30 new cancer diagnoses each day.

Figure 1 indicates the most common cancers estimated to occur in men and women in 2012. Among men, cancers of the lung and bronchus, prostate, stomach, larynx and colorectum account for about 50% of all newly diagnosed cancers. Lung cancer alone accounts for 15% (931) of incident cases in men. The 3 most commonly diagnosed types of cancer among women in 2012 were breast, corpus uteri and cervix uteri, accounting for one-half of all cases in women. Breast cancer alone accounts more than 25% (1541) of all new cancers among women.

Figure 2 also shows the estimated numbers of deaths from cancer for 2012. It is estimated that about 7319 Georgians died from cancer per year, corresponding to about 20 deaths per day. Cancers of the lung and bronchus, prostate, and stomach in men and cancers of the lung and bronchus, breast, and colorectum in women continue to be the most common causes of cancer death. These 4 cancers account for almost half of the total cancer deaths among men and women, with more than one-quarter of all cancer deaths due to lung cancer.

Risk of getting cancer before age 75 (%)* in population of Georgia is 18.7% (22.0% among men and 16.2% among women).

Risk of dying from cancer before age 75 (%)* in population of Georgia is 10.9% (14.2% among men and 10.3% among women).

*The probability or risk of individuals dying from cancer. It is expressed as the number of new born children (out of 100), who would be expected to de-

velop/die from cancer before the age of 75, if they had cancer rates (in the absence of other causes of death).

Conclusion. This estimation of cancer incidence would not be possible without population-based cancer registries functioning in many European countries.

These up-to-date estimates of the cancer burden alongside the description of the varying distribution of common cancers at both the regional and countries level provide a basis for establishing priorities to cancer control actions. The important role of cancer registries in disease surveillance and in planning and evaluating national cancer plans is becoming increasingly recognised and needs to be further advocated.

სამედიცინო მეცნიერებანი

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