Czech Cancer Care in Numbers – Presentation of the Czech Society for Oncology

By the Institute of Institute of Biostatistics and Analyses, Masaryk University, on behalf of the Board of the Czech Society for Oncology

Cancer epidemiology in the Czech Republic

Cancer care in the Czech Republic has been under considerable strain due to the growing incidence and prevalence rates of most cancer types. Each year in the Czech Republic (total population over 10.5 million), more than 77,000 people are diagnosed with cancer and nearly 28,000 die from it. In 2011, there were more than 475,000 people alive in the country, who have received a diagnosis of cancer at some point in the past [1]. The health care load is further aggravated by the high proportion of cancer cases diagnosed in late stages.

The cancer load of the Czech population ranks among the highest worldwide [2] and has been growing continuously. Czech men are most frequently affected by colorectal cancer, closely followed by trachea, bronchus and lung cancer and prostate cancer. The most frequent diagnoses in Czech women are breast cancer, followed by colorectal cancer, cancer of the uterus, and trachea, bronchus and lung cancer. All these diagnoses also rank among the most frequent ones with respect to mortality rates in both men and women. High mortality rates have been also observed in pancreatic cancer, stomach cancer and ovarian cancer. Growth in cancer incidence rates can be also expected in near future, due to the demographic structure and overall ageing of the Czech population.

The Czech Society for Oncology has also developed an information system which employs data from population records, data from clinical registries and data provided by an expert panel to predict the number of cancer patients who would be probably treated in the years to come. The predictions of epidemiological benchmarks are adjusted using survival probability models, making it possible to estimate quite reliably the number of cancer patients who would probably undergo a specific stage of anticancer treatment in a given year. These estimates are done with respect to the patients' age, to the stage of malignant disease, and to the changing demographic parameters of the Czech population.

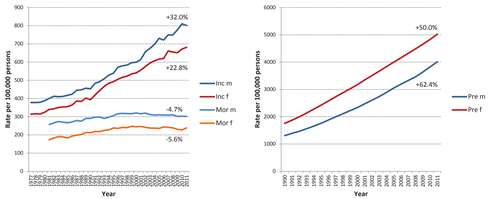

Figure 1. Trends of cancer (all cancer diagnoses, C00–C97) incidence, mortality, and prevalence in the Czech Republic. %: growth index (2001–2011).
Source: Czech National Cancer Registry.

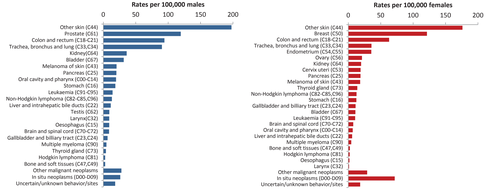

Figure 2. Incidence of individual cancer diagnoses in the Czech males and females in the period 2007–2011.
Source: Czech National Cancer Registry.

▹ *Find more at www.svod.cz*

Czech National Cancer Control Programme

Czech National Cancer Control Programme was created in accordance with the conditions and needs of the Czech Republic and in compliance with the conclusions of WHO Consultation on Strategies to Improve and Strengthen Cancer Control Programmes in Europe held on 25–28 November 2003 in Geneva.

Aims:

- Lowering cancer incidence and mortality.
- Improving quality of life of cancer patients.
- Making the best use of available resources for cancer diagnosis and treatment in the Czech Republic
- Optimising approach to modern diagnostic and treatment methods

Strategy:

- Fight against malignant tumours as a part of nationwide and regional political agenda
- Making the fight against malignant tumours an interest of vital concern to lay and professional public
- Emphasising importance of cancer risk factors and decreasing their effects
- Ensuring early and effective diagnosis of cancer
- Ensuring equity in accessibility of cancer care for all patients, including palliative care
- Sustainability of the fight against cancer by cost control
- Assessment and continuous evaluation of indicators, outputs and outcomes, functioning and effectiveness of NOP
- Supporting clinical oncology as an important and stand-alone specialty in terms of education, clinical practice, and research. Strengthening the specialty position as a guarantor of good clinical practice in cancer care
- International cooperation and harmonization within EU and WHO partnership structures

Figure 3. Official website of the Czech Society for Oncology – www.linkos.cz.

Figure 4. Network of comprehensive cancer centres in the Czech Republic.

▹ *Find more at www.onconet.cz and www.linkos.cz*

National cancer screening programmes

All internationally recommended cancer screening programmes are available for citizens of the Czech Republic. People aged 50 years and over can participate in colorectal cancer screening, women aged over 45 can undergo mammography, and all adult women can attend cervical cancer screening. In accordance to the recommendation by the Council of the European Union, all screening examinations are offered by means of organised programmes, with strictly defined procedures and ensured quality control. Health care facilities selected for providing screening examinations (mammography centres, colonoscopy centres, and cytology laboratories) are therefore continuously monitored to provide high-quality examinations. A system of personalised invitation to cancer screening was launched in early 2014, which turned the organised programmes into population-based.

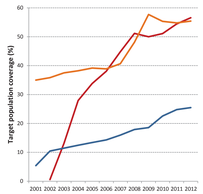

Figure 5. Coverage of the target population in three Czech national cancer screening programmes (breast, colorectal, and cervical cancer).
Source: National Reference Centre and screening registries.

Figure 6. Web portals of the Czech cancer screening programmes.

▹ *Find more at www.mamo.cz, www.kolorektum.cz and www.cervix.cz*

Survival of Czech cancer patients

Although cancer mortality rates have been high in the Czech Republic in comparison with other countries, recent studies have demonstrated major increase in survival rates. For most cancer types the 5-year relative survival rates of cancer patients are significantly higher than survival times of cancer patients in other Eastern European countries and are catching up with survival rates in Western and Northern European countries [3,4]. In spite of these positive findings there have been several challenges for the Czech cancer care, which were identified, e.g., in the country note to the OECD's publication Cancer Care: Assuring Quality to Improve Survival [5]: promotion of prevention and healthy life style (preventive examinations, reduction of smoking, obesity and other risk factors), availability of new drug treatment, or strengthening the feedback mechanisms to promote best practices in cancer diagnosis and treatment among providers.

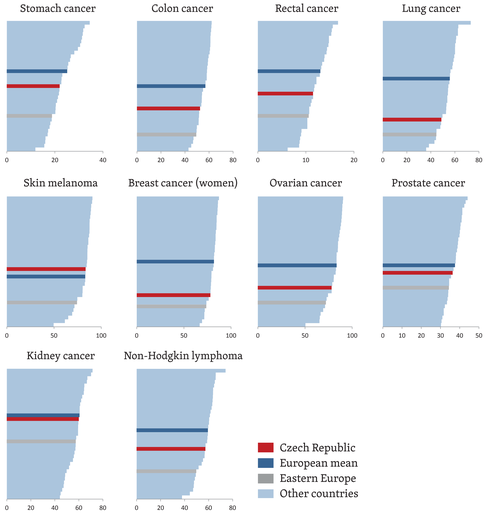

Figure 7. Five-year relative survival of Czech cancer patients in the period 2000–2007 according to the EUROCARE-5 study.
Source: de Angelis et al., 2014 [3].

Table 1. Time trends in stage-adjusted 5-year relative survival by cancer diagnosis (Pavlík et al. 2014)

Diagnosis	2000-2004		2005-2008		Difference in %	p-value for trend
	Syr RSR (%)	SE (%) [a]	Syr RSR (%)	SE (%) [a]		
Oral cavity	45.7	2.6	47.5	2.7	1.8	0.177
Pharynx	34.8	3.5	41.2	3.6	6.4	<0.001
Oesophagus	9.5	1.7	13.1	2.2	3.6	<0.001
Stomach	19.0	1.0	22.8	1.2	3.8	<0.001
Colon and rectum	48.0	0.7	53.1	0.7	5.1	<0.001
Liver [b]	5.3	1.0	5.2	1.2	-0.1	0.576
Biliary tract [b]	11.3	1.3	12.0	1.4	0.8	0.425
Pancreas [b]	4.5	0.7	5.4	0.7	1.0	0.005
Larynx	49.8	3.0	49.7	3.0	-0.2	0.499
Lung	8.8	0.4	10.9	0.5	2.1	<0.001
Melanoma of skin [b]	81.2	1.3	84.7	1.2	3.5	<0.001
Breast	80.1	0.8	82.0	0.7	1.9	0.001
Vulva and vagina	53.0	3.4	53.1	3.5	0.1	0.695
Cervix uteri	64.8	1.7	66.6	1.7	1.8	0.010
Corpus uteri	71.7	1.8	78.1	1.7	6.4	<0.001
Ovary	37.9	1.5	39.0	1.6	1.1	0.015
Prostate	78.6	1.8	84.3	2.5	5.7	<0.001
Testis	92.4	1.2	94.4	1.2	2.0	0.042
Kidney	61.0	1.9	63.8	1.3	2.8	0.116
Bladder	72.7	1.4	72.5	1.3	-0.1	0.645
Thyroid [b]	91.6	1.9	93.4	1.7	1.8	0.012

[a] SE: standard error.
[b] Aggregated TNM coding was used for adjustment in melanoma, liver, biliary tract, pancreatic, and thyroid cancer.

Further readings

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4. Pavlík T, et al. Trends in stage-specific population-based survival of cancer patients in the Czech Republic in the period 2000-2008. Cancer Epidemiol 2014; 38(1): 28-34.
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