GLOSSARY

Crude incidence (mortality) rate (CR) - number of new cancer cases (or cases of death from cancer) occurring in a population during a year divided by the average number of this population in the same year, expressed per 100,000. It describes the frequency of new cases in a population of a region and used for the analysis of epidemiological situation in a region.

Age-standardized incidence (mortality) rate (ASR) – incidence (mortality) rate in a defined population calculated applied to the age distribution of a "standard population". The World Standard Population is generally used for comparison of cancer levels between countries. The Ukrainian Standard Population was calculated in the Ukrainian National Cancer Registry based on the age distribution of Ukrainian population in 2000. ASR with Ukrainian Standard Population is advisable for comparing cancer incidence (mortality) levels between the regions of Ukraine or in time analysis in a region.

Standard error (SE) presents some measure of precision of the estimated age-standardized rate; it is used for estimation of its confidence interval.

Prevalence rate is a proportion of cancer patients in a defined population, expressed per 100,000. Most common is a ***complete prevalence rate*** calculated as number of persons with cancer divided by the number of this population at the end of a year. It describes the level of cancer burden in a population, usually used to determine the required medical resource for oncological services which fulfill treatment and clinical follow-up of cancer patients.

DESCRIPTION

All information in the Bulletin is calculated based on the personified data of regional cancer registries which are the component parts of the National Cancer Registry (NCR) of Ukraine.

The information is given by articles that represent selected cancers by ICD-10 codes. A separate article contains information about all children cancers (0-17 years old). Children cancer incidence and mortality rates by nosologic forms are included into the corresponding articles.

> *Please note that* in 2017 the ***NCR did not receive the database from AR Krym, Sevastopol city, some parts of Donetska and Luhanska oblasts***. That is why numbers of cancer patients, cancer cases and deaths from cancer in Ukraine as a whole, if provided, do not cover the cases occurred in these regions. All rates for Ukraine as a whole are calculated with the exception of data of the oblasts mentioned above; rates for Donetska and Luhanska oblasts are not calculated.

Table 1 of each article includes rates for 2015 calculated using the adjusted data registered until the end of 2016. All rates are given for total, male and female population. Age-standardized rates are given for World Standard Population (ASR(*W*)) and Ukrainian Standard Population (ASR(*U*)). Children rates are calculated for the number of children population aged 0-17 years.

Change of the incidence rate 2015 is shown compared to the one of 2014. A negative value indicates decrease of the ASR(*U*) in 2015; a positive value indicates its increase. If the change of the rate is statistically significant for a significance level $p \leq 0.05$ then it is marked by ↑ or ↓. If the change is statistically significant for a significance level $p \leq 0.01$ then it is marked by ↑↑ or ↓↓. Statistically insignificant difference is marked ~~ and suggests that it could be due to random fluctuations.

Rate "**Lived less than 1 year since the diagnosis in 2015**" is calculated with respect to the total number of cancer patients with diagnosis of 2015, regardless of whether they were diagnosed and registered alive or dead.

Rate "**From among the newly diagnosed – diagnosed post mortem**" is calculated as a ratio of number of cancer patients with post mortem diagnosis to the total number of those diagnosed in 2015.

Rate "**Microscopically verified**" is a proportion of cancer cases of 2015 verified with histological or cytological examination. Rate "**Histologically verified**" is a proportion of histologically verified cases of the total number of cancer cases of 2015.

"**Not specified morphology**" is a percentage of microscopically verified cases with ICDO morphology codes 8000-8005.

Rate "**Patients diagnosed during the preventive medical examinations**" is defined as a ratio of patients with cancer determined during the preventive medical examination or in a doctor's consulting room for women of the total number of cancer patients of 2015.

Rate "**Newly diagnosed patients received the special treatment**" is a ratio of cancer patients who received the special anti-cancer treatment (curative, palliative or prophylactic anti-cancer therapy), along with surgery or without it, during 12 months from the moment of diagnosis, to the total number of cancer patients. Ratio of patients received "**treatment combined or complex**" shows percentage of patients who received chemotherapy, hormonal treatment, immunotherapy and radio-therapy along with surgery, as distinct from those who received "**surgical treatment only**" (*now this proportion is given referred to the whole number of the patients)*.

Rates "**Incidence and mortality of children population**" are calculated as a ratio of number of cancer cases and deaths from cancer in population of persons under 18 years old at time of diagnosis or death to the total number of children population of the correspondent gender.

Table 2 - Incidence and mortality, 2015 includes rates by administrative territories (oblasts and Autonomous Republic of Crimea). All rates are given for total, male and female population in according to such pattern: crude rate, ARS(*W*) and ASR(*U*). These data are calculated considering corrections and additive information received by regional registries during 2016.

Table 3 - Incidence and mortality, 2016 includes incidence rates by administrative territories according to the on-line data of regional cancer registries. The rates are given for total, male and female population in according to a pattern: number of cases and crude rate. This Table includes on-line (not adjusted) data that were registered until the end of 2016, and therefore these rates could change after receiving the additional information at a later date.

Comparing of rates in Table 2 and Table 3 is improper.

Table 4 includes some important rates of 2016 calculated based on the on-line data of regional registries.

Rates "**Stage distribution of new cases**" consist of proportions of cancer patients with respective stage that was automatically defined based on (p)TNM indices (TNM classification of the 6th edition was used). Column "**Not determined**" accounts cancers that are subject to TNM staging system but were registered without TNM indices (though they are to be classified) or the indices were incorrect or any other relevant information was missed (e.g.differentiation grade of tumour of bones, etc.). Cancers that are not subject to staging by TNM were not taken into account in "Not determined" stage. The articles **Hodgkin lymphoma** and **Non-Hodgkin lymphoma** show the distribution by

Ann-Arbour stages. The article **Leukaemia** includes proportions of acute, sub-acute, chronic and unspecified forms of the disease. The **Children** article shows the distribution by stage of solid cancers and lymphomas (C00-C85) and by form of leukaemia (C91-C95).

The **distribution by stage** as well as rates "**Received special treatment**" and "**During the preventive examination**" are calculated as a ratio of the corresponding on-line number of cancer patients of 2016 to the total number of new cancer patients registered in 2016, and rate "**Microscopically verified**" is calculated based on the relevant *cancer cases*.

Rate "**Lived less than 1 year since diagnosis in 2015**" is calculated in a similar way to that described in Table 1. Number of cancer patients who were **diagnosed post-mortem** is also given.

"**Patients per 100,000 of population**" represents rates of complete cancer prevalence at the end of 2016 per 100,000.

Tables of **Annex A** "**Rates for selected cancer sites by age groups, incidence**" and **Annex B** "**Rates for selected cancer sites by age groups, mortality**" include total numbers of cancer cases and deaths from cancer, age-specific rates, crude rates, age-standardized rates (World Standard Population) per 100,000 of population and standard errors of the ASR for 53 nosologic forms of cancer as well as for all sites in total and for all sites with the exception of non-melanoma skin cancer. All rates are calculated for population of Ukraine by gender and age groups and based on the adjusted NCR data of 2015.

Table of **Annex C** "**Cancer prevalence**" includes proportions of cancer patients alive at the end of 2016 in oblasts of Ukraine per 100,000 of population by gender and age groups (complete cancer prevalence rates).

Annex D includes maps of age-standardized cancer incidence rates calculated with World Standard Population for 2015 per 100,000 of males/females.

Annex E includes maps of age-standardized cancer mortality rates calculated with World Standard Population for 2015 per 100,000 of males/females.

Annex F includes maps of 5-year cancer prevalence rates for adult (in this case – *aged 15+*) Ukrainian population in 2016 per 100,000 of males/females. These rates are calculated to achieve the comparability with the forthcoming estimations that IARC usually do in its GLOBOCAN project (see GLOBOCAN 2012 *http://globocan.iarc.fr/Pages/fact_sheets_population.aspx*).

The rate of ***partial 5-year cancer prevalence*** is a proportion of cancer patients diagnosed during five years in the past (in this case – 2012-2016) and alive at the end of a given year (2016) in a defined population, expressed per 100,000; it is considered to be useful for measurement of cancer patients' cure. Patients who are still alive five years after the diagnosis of cancer are usually considered cured since the death rates of such patients are similar to those in the general population (there are exceptions, particularly breast cancer).