

IMPLEMENTATION OF INTERNATIONAL CLASSIFICATION OF CHILDHOOD CANCER IN THE NATIONAL CANCER REGISTRY OF UKRAINE

Structure of cancer incidence of children population differs from that of the adults. This makes analysis of childhood cancer incidence based on the principle of primary tumor site used in the ICD-10 uninformative. Instead, the International Classification of Childhood Cancer (ICCC) was developed in 1996 and is now widely used. It focuses mainly on morphological type of tumor rather than site. The 3rd revision of the classification has been worked out in 2005 (ICCC-3) [1]. It consists of 12 main groups, divided into 47 subgroups of most typical childhood cancers. ICC3 is preferably used in most scientific publications and cancer epidemiology presenting information about cancer in children. At the same time, statistics on childhood cancer incidence in Ukraine is presented in terms of ICD-10 classification.

The National Cancer Registry of Ukraine (NCRU) collects information about all cancer cases in all age groups, including childhood cancer. Implementation of ICC3 in NCRU was a completely technical task. The automated procedure of coding of childhood cancer cases in ICC3 was implemented in NCRU's software in 2015, that allows analysis of incidence, mortality and survival rates by ICC3 codes.

This short note presents results of the incidence analysis of children and adolescents with cancer diagnosed in 2002-2013. The age group 0-19 of the cohort of patients was selected to provide comparability with the results of the project International Incidence Of Childhood Cancer, IICC [2], conducted by the International Agency for Research on Cancer (IARC) and the International Association of Cancer Registries (IACR).

In summary, the NCRU has facilities to carry out detailed analysis of childhood cancers and malignant hematological diseases and can perform international comparison in terms of the ICC3 classification. The National Cancer Institute of Ukraine and the NCRU invite experts and scholars to participate in these activities and to give suggestions or comments on further analysis.

1. <http://seer.cancer.gov/iccc/>
2. <http://iicc.iarc.fr/index.php>

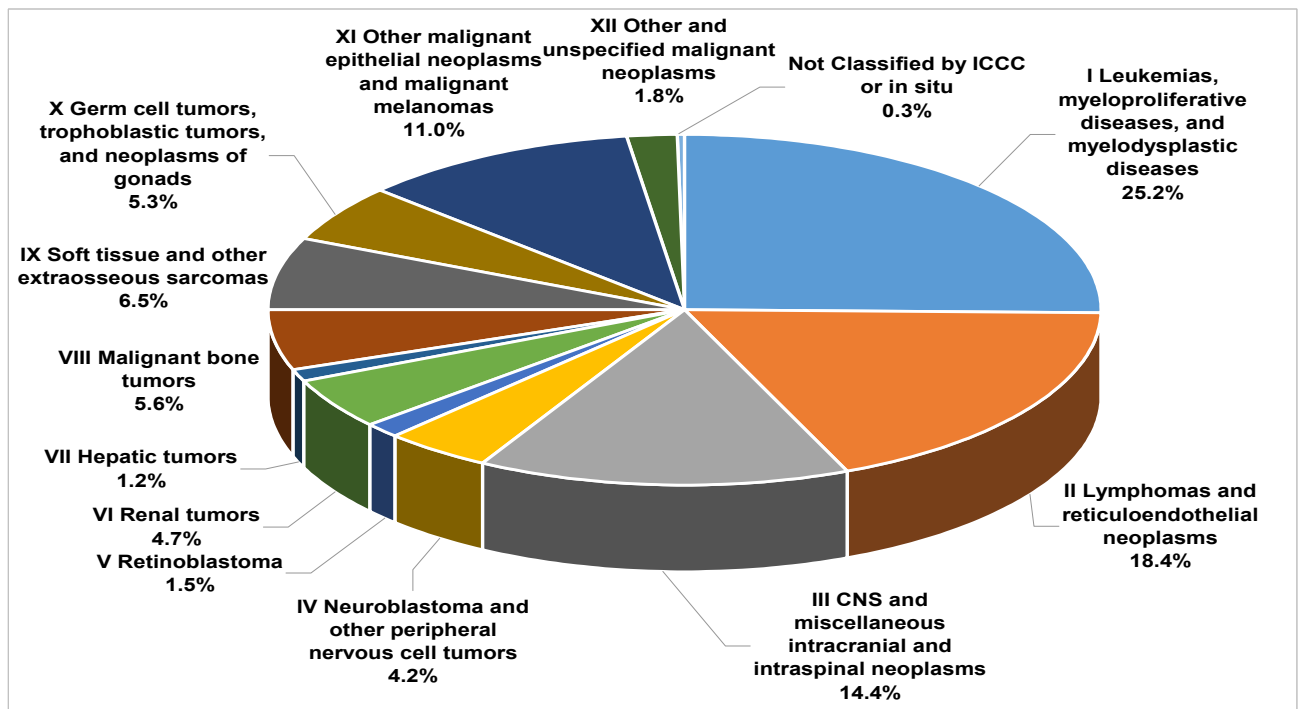


Fig. 11 – ICC3 groups distribution of new cancer cases in children and adolescents aged 0-19, 2002-2013

Table I1- Cancer incidence of children and adolescents aged 0-19 in Ukraine, 2002-2013

ICCC-3 group	Cases	per 100,000
All	18014	14.86
I Leukemias, myeloproliferative diseases, and myelodysplastic diseases	4540	3.74
(a) Lymphoid leukemias	3081	2.54
(b) Acute myeloid leukemias	766	0.63
(c) Chronic myeloproliferative diseases	233	0.19
(d) Myelodysplastic syndrome and other myeloproliferative diseases	58	0.05
(e) Unspecified and other specified leukemias	402	0.33
II Lymphomas and reticuloendothelial neoplasms	3315	2.73
(a) Hodgkin lymphomas	2017	1.66
(b) Non-Hodgkin lymphomas (except Burkitt lymphoma)	834	0.69
(c) Burkitt lymphoma	244	0.20
(d) Miscellaneous lymphoreticular neoplasms	145	0.12
(e) Unspecified lymphomas	75	0.06
III CNS and miscellaneous intracranial and intraspinal neoplasms	2592	2.14
(a) Ependymomas and choroid plexus tumor	211	0.17
(b) Astrocytomas	967	0.80
(c) Intracranial and intraspinal embryonal tumors	510	0.42
(d) Other gliomas	149	0.12
(e) Other specified intracranial and intraspinal neoplasms	65	0.05
(f) Unspecified intracranial and intraspinal neoplasms	690	0.57
IV Neuroblastoma and other peripheral nervous cell tumors	750	0.62
(a) Neuroblastoma and ganglioneuroblastoma	663	0.55
(b) Other peripheral nervous cell tumors	87	0.07
V Retinoblastoma	274	0.23
VI Renal tumors	839	0.69
(a) Nephroblastoma and other nonepithelial renal tumors	698	0.58
(b) Renal carcinomas	101	0.08
(c) Unspecified malignant renal tumors	40	0.03
VII Hepatic tumors	213	0.18
(a) Hepatoblastoma	112	0.09
(b) Hepatic carcinomas	81	0.07
(c) Unspecified malignant hepatic tumors	20	0.02
VIII Malignant bone tumors	1009	0.83
(a) Osteosarcomas	435	0.36
(b) Chondrosarcomas	84	0.07
(c) Ewing tumor and related sarcomas of bone	250	0.21
(d) Other specified malignant bone tumors	139	0.11
(e) Unspecified malignant bone tumors	101	0.08
IX Soft tissue and other extrasosseous sarcomas	1170	0.97
(a) Rhabdomyosarcomas	326	0.27
(b) Fibrosarcomas, peripheral nerve sheath tumors, and other fibrous neoplasms	223	0.18
(c) Kaposi sarcoma	2	0.00
(d) Other specified soft tissue sarcomas	494	0.41
(e) Unspecified soft tissue sarcomas	125	0.10
X Germ cell tumors, trophoblastic tumors, and neoplasms of gonads	956	0.79
(a) Intracranial and intraspinal germ cell tumors	63	0.05
(b) Malignant extracranial and extragonadal germ cell tumors	167	0.14
(c) Malignant gonadal germ cell tumors	472	0.39
(d) Gonadal carcinomas	164	0.14
(e) Other and unspecified malignant gonadal tumors	90	0.07
XI Other malignant epithelial neoplasms and malignant melanomas	1975	1.63
(a) Adrenocortical carcinomas	15	0.01
(b) Thyroid carcinomas	763	0.63
(c) Nasopharyngeal carcinomas	69	0.06
(d) Malignant melanomas	322	0.27
(e) Skin carcinomas	158	0.13
(f) Other and unspecified carcinomas	648	0.53
XII Other and unspecified malignant neoplasms	327	0.27
(a) Other specified malignant tumors	34	0.03
(b) Other unspecified malignant tumors	293	0.24
Not Classified by ICCC or in situ	54	0.04

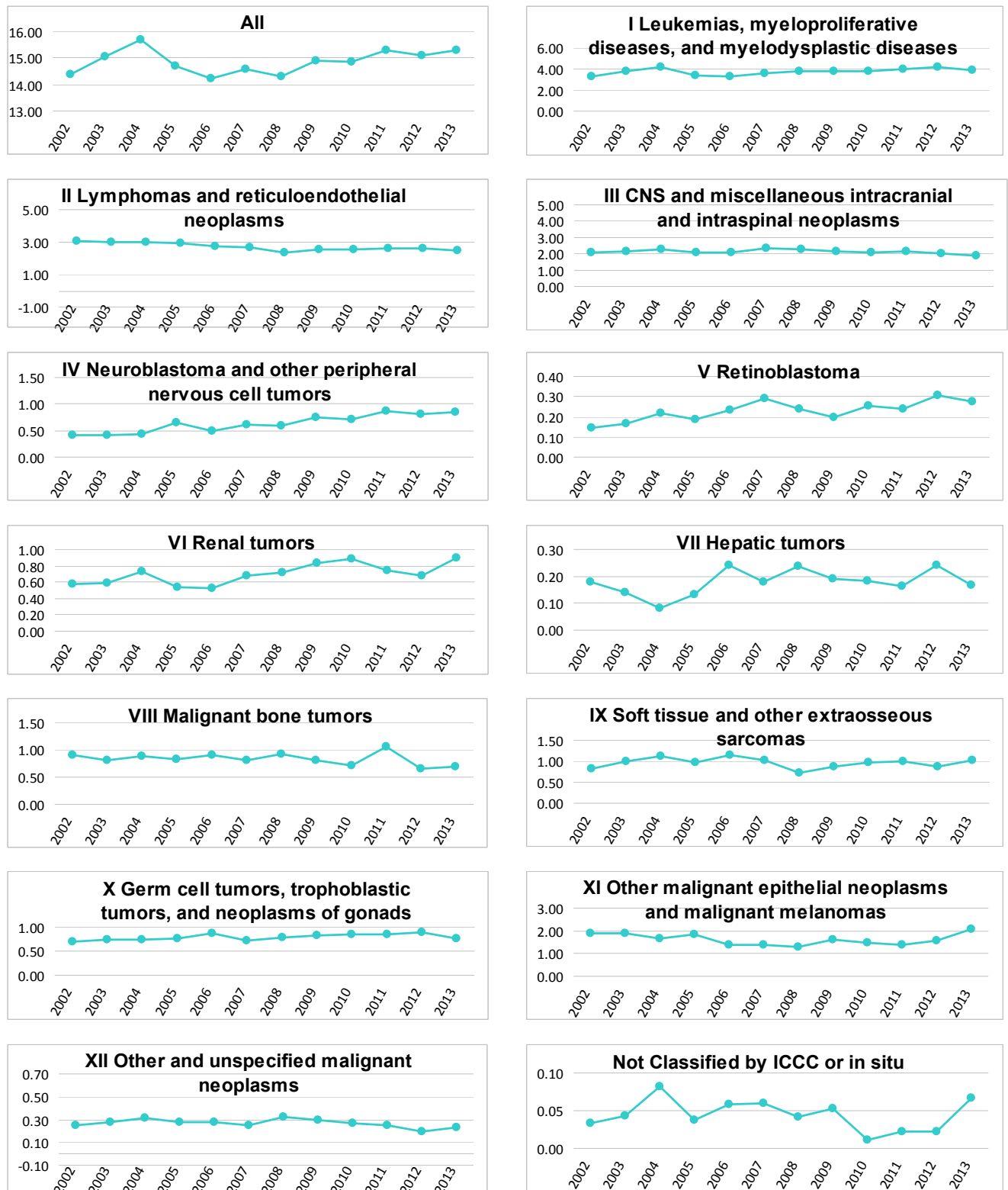


Fig. I2 – Cancer incidence of children and adolescents aged 0-19, Ukraine, 2002-2013 (per 100,000 of children population)

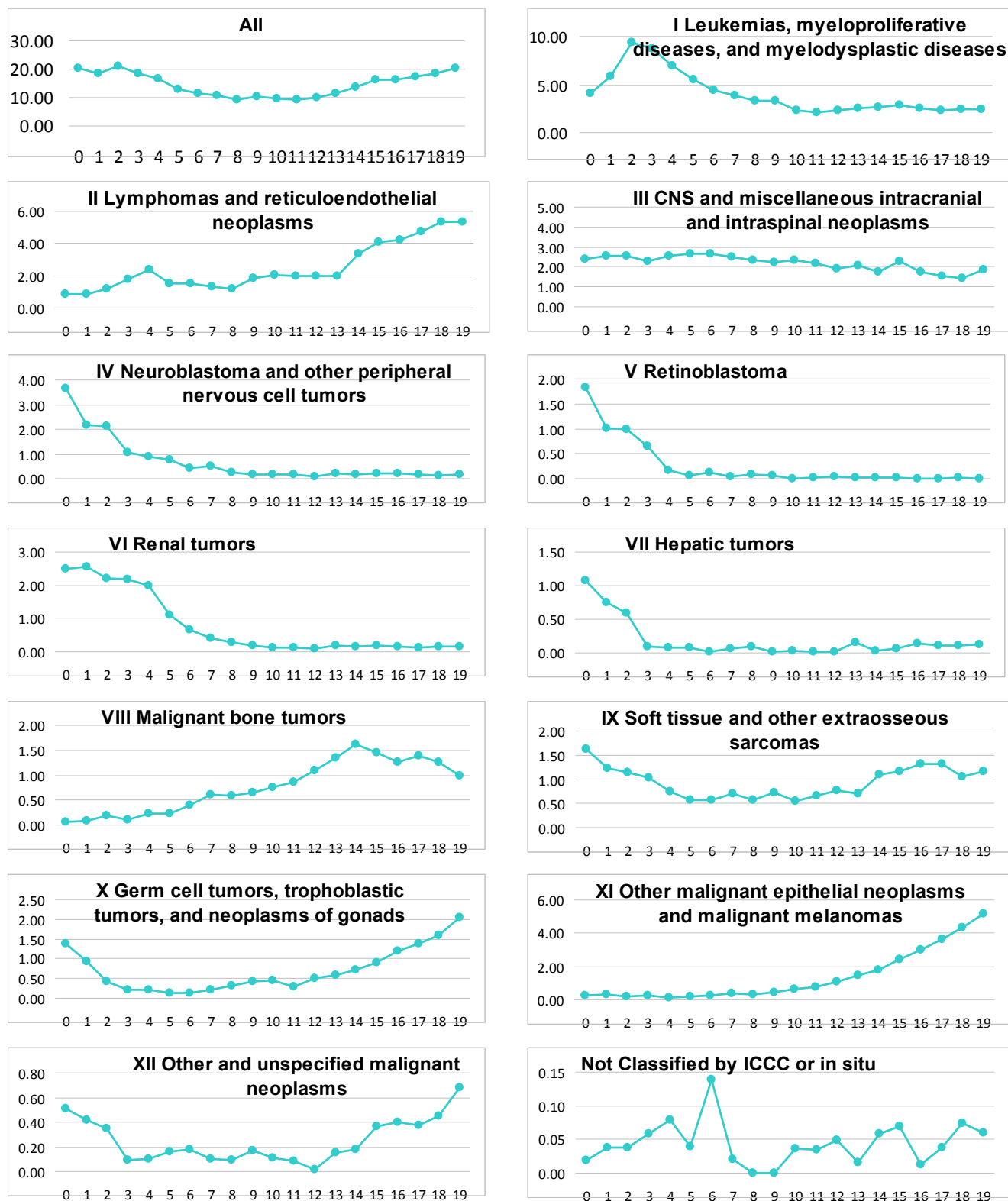


Fig. 13 – Age-specific cancer incidence rates of children and adolescents aged 0-19, Ukraine, 2002-2013 (per 100,000 of children population)