

Statistical data for children with malignant and benign diseases according to age and gender in Prilep in the period from 2015-2019

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Abstract

Cancer is a class of diseases where a group of cells show uncontrolled growth by dividing outside the normal range, invading and attaching to adjacent tissues, and sometimes metastases, which spread to other parts of the body through the lymphatic system and bloodstream. For this research were used data obtained from the database of the Institute for Health Protection Prilep, city hospital "Borka Taleski" from Prilep for the prevalence of identified malignant and benign diseases by age in the department of child health service in the period from 2014 until 2019. The purpose of this research is to give a clearer picture of the occurrence and causes of malignant and benign diseases in children, the method of diagnosis and the process of treatment and treatment of this type of disease with special reference to the occurrence of malignant and benign diseases, diagnosed in children in Prilep in the period from 2014-2019. Most cancer cases were detected in 2018 – 125 cases, then in 2015 (117), 2016 (116), 2017 (104) and the least cases were detected in 2019 (94 cases). In all periods, most affected was the age group from 14 to 20 years. Mostly were affected the female patients (4:1). Most common neoplasms were the ones with uncertain nature and benign skin cancers. The purpose of the research is primarily to guide the population from the timely diagnosis of malignant and benign tumors in children as well as the efficient and timely treatment in order to avoid adverse consequences for human health and life.

Key words: Malignant, benign, cancer, statistics, oncology

Date of Submission: 13-08-2021

Date of Acceptance: 28-08-2021

I. Introduction

Cancer (medical term: malignant neoplasm) is a class of diseases in which a group of cells show uncontrolled growth by dividing outside the normal range, invading and attaching to adjacent tissues, and sometimes metastasizing, spreading the cells to other parts of the body through lymphatic system and bloodstream. These three malignant properties separate cancer from benign tumors, which are self-limiting and do not invade or metastasize. Cancer in children differs from cancer in adults in several ways. The most important difference is that children generally have a better prognosis than adults. Another difference between cancer in children and that in adults is in the cells from which the cancer originated. Many cancers in adults start in certain organs, such as the lungs, chest, or colon. Cancers in children, in addition to leukemias and brain tumors, often occur in connective tissues, such as bones and muscles. Cancer in children is often more aggressive than in adults. It grows faster and often metastasizes to other parts of the body or larger organs by the time it is diagnosed. However, cancers that occur in children tend to respond more to chemotherapy and radiation than those in adults. Another important difference is that there are no useful screening tests to diagnose cancers in children. Quite often the diagnosis is made during routine pediatric visits.

The causes of most cancers in children are unknown, but certain links can be identified. The risk of childhood leukemia is increased in children with Down syndrome, in boys, in white people and in those with higher socioeconomic status. Exposure to radiation in the uterus also increases the risk. Central nervous system cancer is also more common in boys, white people, and those who have already received radiotherapy for other cancers. Many inherited and developmental conditions are associated with an increased risk of cancer in children. These include Bloom's syndrome, neurofibromatosis, tuberous sclerosis and ataxia - telangiectasia. A family history of Hodgkin's disease increases the likelihood of developing it, and a family history of retinoblastoma in both eyes gives children a 50% chance of carrying the same gene. Ninety percent of children who carry the gene will develop the disease. Smoking is associated with several forms of cancer, and is the cause of 90% of lung cancers. Mesothelioma is associated with prolonged exposure to asbestos fibers. Alcohol

as well as various types of radiation can cause cancer, long-term exposure to ultraviolet radiation from the sun can lead to melanoma and other skin malignancies, often tomographic radiation, ionizing radiation, such as radon gas. Non-ionizing radiofrequency radiation from cell phones and other similar devices that use radio frequencies has also been cited as a cause of cancer, but there is still insufficient evidence to support this thesis. [1-8]

II. Material And Methods

For this research were used data obtained from the database of the Institute for Health Protection Prilep, city hospital "Borka Taleski" from Prilep for the prevalence of identified malignant and benign diseases by age in the department of child health service in the period from 2014 to 2019.

Statistical data from the results obtained from the Institute for Health Protection Prilep, City Hospital "Borka Taleski" from Prilep were used as working methods in order to simplify, efficiently and effectively present the data and results in tables.

The obtained results from the examinations in this research are statistically processed, clearly and concisely presented in tables from where the obtained answers and the obtained results from the data of infected and determined malignant and benign diseases according to age and gender in children in Prilep in the period can be clearly seen. from 2015-2019.

With the systematization and grouping of the data, more specific values were obtained, which enabled their statistical processing, where the next stage was the systematization of the data in Microsoft Office Excel, from where their further processing was approached.

From there, the next step was the interpretation of the obtained results, ie the interpretation of the data from the tables, which obtained a clear and concise picture of the obtained results from the conducted research.

III. Result and Discussion

Table 1 - Malignant and benign diseases diagnosed in children in the City Hospital Borka Taleski - Prilep in 2015

Data for 2015	Up to 3 years		From 3-6 years		From 6-14 years		From 14-20 years	
	Gender		Gender		Gender		Gender	
	Male	Female	Male	Female	Male	Female	Male	Female
Malignant neoplasms of the lip, oral cavity and pharynx	0	0	0	0	0	0	0	0
Other malignant skin neoplasms	0	0	0	0	0	0	0	0
Other malignant neoplasms of the genitals	0	0	0	0	0	0	0	0
Malignant neoplasms of the brain	0	0	0	0	0	1	0	0
Testis unmarked	0	0	0	0	0	0	6	0
Other malignant neoplasms	0	0	0	0	2	0	0	0
Hodgkin disease	0	0	0	0	0	0	2	2
Leukemia	0	0	0	0	0	1	0	2
Benign skin neoplasm	0	0	0	0	2	2	10	12
Benign breast neoplasm	0	0	0	0	0	0	0	8
Benign neoplasm of the urinary organs	0	0	0	0	0	0	0	1
Other or neoplasms or uncertain or unmarked nature	5	4	9	7	9	6	12	14

Table 2 - Malignant and benign diseases diagnosed in children in the City Hospital Borka Taleski - Prilep in 2016

Data for 2016	Up to 3 years		From 3-6 years		From 6-14 years		From 14-20 years	
	Gender		Gender		Gender		Gender	
	Male	Female	Male	Female	Male	Female	Male	Female
Malignant neoplasms of the lip, oral cavity and pharynx	0	0	0	0	0	0	0	0
Other malignant skin neoplasms	0	0	0	0	0	0	0	0
Other malignant neoplasms of the genitals	0	0	0	0	0	0	0	0

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Malignant neoplasms of the brain	0	0	0	0	0	1	0	0
Testis unmarked	0	0	0	0	0	0	0	0
Other malignant neoplasms	0	0	0	0	0	0	0	0
Hoctin disease	0	0	0	0	0	0	1	0
Leukemia	0	0	0	0	0	0	0	2
Benign skin neoplasm	0	0	0	0	7	9	9	12
Benign breast neoplasm	0	0	0	0	0	0	0	8
Benign neoplasm of the urinary organs	0	0	0	0	0	0	0	0
Other or neoplasms of uncertain or unmarked nature	9	6	8	6	10	8	19	10

Table 3 - Malignant and benign diseases diagnosed in children in the City Hospital Borcka Taleski - Prilep in 2017

Data for 2017	Up to 3 years		From 3-6 years		From 6-14 years		From 14-20 years	
	Gender		Gender		Gender		Gender	
	Male	Female	Male	Female	Male	Female	Male	Female
Malignant neoplasms of the lip, oral cavity and pharynx	0	0	0	0	0	0	0	0
Other malignant skin neoplasms	0	0	0	0	0	0	0	0
Other malignant neoplasms of the genitals	0	0	0	0	0	0	0	0
Malignant neoplasms of the brain	0	0	0	0	0	0	0	0
Testis unmarked	0	0	0	0	0	0	4	0
Other malignant neoplasms	0	0	0	0	0	0	0	0
Hoctin disease	0	0	0	0	0	0	0	0
Leukemia	0	0	0	0	0	1	0	0
Benign skin neoplasm	0	0	0	0	12	10	11	9
Benign breast neoplasm	0	0	0	0	0	0	0	1
Benign neoplasm of the urinary organs	0	0	0	0	0	0	0	0
Other neoplasms of uncertain or unmarked nature	4	5	3	5	6	13	12	9

Table 4 - Malignant and benign diseases diagnosed in children in the City Hospital Borcka Taleski - Prilep in 2018

Data for 2018	Up to 3 years		From 3-6 years		From 6-14 years		From 14-20 years	
	Gender		Gender		Gender		Gender	
	Male	Female	Male	Female	Male	Female	Male	Female
Malignant neoplasms of the lip, oral cavity and pharynx	0	0	0	0	0	0	1	0
Other malignant skin neoplasms	0	0	0	0	0	0	0	0
Other malignant neoplasms of the genitals	0	0	0	0	0	0	0	0
Malignant neoplasms of the brain	0	0	0	0	2	1	1	0
Testis unmarked	0	0	0	0	0	0	0	0
Other malignant neoplasms	0	0	0	1	0	0	0	0
Hoctin disease	0	0	0	0	0	0	0	0
Leukemia	0	0	0	0	0	2	0	0
Benign skin neoplasm	0	0	0	0	8	7	14	11

Benign breast neoplasm	0	0	0	0	0	1	0	1
Benign neoplasm of the urinary organs	0	0	0	0	0	0	0	0
Other or neoplasms of uncertain or unmarked nature	6	10	4	2	10	10	17	16

Table 5 - Malignant and benign diseases diagnosed in children in the City Hospital Borka Taleski - Prilep in 2019

Data for 2019	Up to 3 years		From 3-6 years		From 6-14 years		From 14-20 years	
	Gender		Gender		Gender		Gender	
	Male	Female	Male	Female	Male	Female	Male	Female
Malignant neoplasms of the lip, oral cavity and pharynx	0	0	0	0	0	0	0	0
Other malignant skin neoplasms	0	0	0	0	0	0	0	0
Other malignant neoplasms of the genitals	0	0	0	0	0	0	0	0
Malignant neoplasms of the brain	0	0	0	0	2	1	0	0
Testis unmarked	0	0	0	0	0	0	0	0
Other malignant neoplasms	0	0	1	2	0	0	0	0
Hoclin disease	0	0	0	0	0	0	0	1
Leukemia	0	0	0	0	0	0	0	0
Benign skin neoplasm	0	0	0	0	3	8	12	15
Benign breast neoplasm	0	0	0	0	0	0	0	4
Benign neoplasm of the urinary organs	0	0	0	0	0	0	1	0
Other or neoplasms of uncertain or unmarked nature	1	0	3	5	7	9	12	7

According to the results obtained from the tables for the period from 2015 to 2019 in terms of identified malignant and benign diseases by age and sex in the child health service in Prilep it can be noted that in 2015 at the age of 6-14 years was diagnosed malignant brain neoplasm in a female child in the municipality of Prilep. In 2015, 6 male children aged 14-20 were diagnosed with testicular cancer. Also, 2 malignant neoplasms were diagnosed in 2 male children aged 6-14 years in the municipality of Prilep. In the same year, Hodgkin's disease was diagnosed in 2 male and two female children aged 14-20 years. In 2015, leukemia was diagnosed in 1 female child aged 6-14 years and in 2 female children aged 14-20 years.

Benign skin neoplasm in 2015 was diagnosed in 2 male and two female children aged 6-14 years and in 10 male and 12 female children aged 14-20 years. In 2015, in the municipality of Prilep, a benign breast neoplasm was diagnosed in 8 female children aged 14-20 years. Benign neoplasm of the urinary organs in 2015 at the level of the municipality of Prilep was diagnosed in 1 female child aged 14-20 years. Other or all neoplasms or neoplasms of uncertain or unmarked nature in 2015 were diagnosed in 5 boys and 4 girls up to 3 years old, aged 3-6 years in 9 boys and 7 girls, while at the age of 6-14 years in 9 male and 6 female children. At the age of 14-20 years, others or all neoplasms or neoplasms of uncertain or unmarked nature in 2015 were observed or diagnosed in 12 male and 14 female children in the municipality of Prilep.

In 2016, in the municipality of Prilep, a malignant brain neoplasm was diagnosed in a female child aged 6-14 years. At the age of 14-20 years in 2016, Hodgkin's disease was diagnosed in 1 boy. In 2016, leukemia was diagnosed in 2 female children aged 14 to 20 years in the municipality of Prilep. Benign skin neoplasm in 2016 was diagnosed in 7 male and 9 female children aged 6-14 years, as well as in 9 male and 12 female children aged 14 to 20 years. In 2016, benign breast neoplasm was diagnosed in 8 female children aged 14 to 20 years in the municipality of Prilep. Other or all neoplasms or neoplasms of uncertain or unspecified nature have been diagnosed in 9 male and 6 female children under 3 years of age, in 8 male and 6 female children aged 3-6 years, in 10 male and 8 female children aged from 6-14 years as well as 19 male children and 10 female children aged 14-20 years.

In 2017, in the city hospital Borka Taleski from Prilep, unmarked testicular cancer was diagnosed and determined in 4 male children aged 14 to 20 years. Leukemia is diagnosed in 1 female child aged 6-14 years. Benign skin neoplasm has been diagnosed in 12 male and 10 female children aged 6-14 years as well as in 11 male and 9 female children aged 14 to 20 years. In 2017, a benign breast neoplasm was diagnosed in 1 female child aged 14 to 20 years. Other or all neoplasms or neoplasms of uncertain or unmarked nature in 2017 in

Prilep was diagnosed in 4 male and 5 female children up to 3 years old, in 3 male and 5 female children aged 3-6 years, in 6 male and 13 female children aged 6-14 years as well as 12 male children and 9 female children aged 14 to 20 years.

In 2018, a malignant neoplasm of the oral cavity was diagnosed in 1 male child aged 14 to 20 years. Malignant neoplasm of the brain in 2018 in the municipality of Prilep was diagnosed in 2 boys and 1 girl aged 6-14 years as well as in 1 boy aged 14 to 20 years. Other malignant neoplasms are diagnosed in 1 female child aged 3-6 years. Leukemia in 2018 in the city hospital Borka Taleski was diagnosed in 2 female children aged 6-14 years. Benign skin neoplasm in 2018 was diagnosed in 8 male and 7 female children aged 6-14 years as well as in 14 male and 11 female children aged 14-20 years.

In 2018 in Prilep, a benign breast neoplasm was diagnosed in 1 female child aged 6-14 years as well as in 1 female child aged 14-20 years. Other or all types of neoplasms or neoplasms of uncertain or unmarked nature in 2018 were diagnosed in 6 boys and 10 girls up to 3 years old, in 4 boys and 2 women aged 3-6 years, in 10 men children and 10 female children aged 6-14 years as well as 17 male children and 16 female children aged 14-20 years.

In 2019, at the level of the municipality of Prilep in the city hospital Borka Taleski from Prilep, a manic brain neoplasm was diagnosed in 2 boys and 1 girl aged 6-14 years. Other malignant neoplasms have been diagnosed in 1 male and 2 female children aged 3-6 years. Hotkin's disease was diagnosed in 1 female child aged 14-20 years. Benign skin neoplasms in 2019 in Prilep were diagnosed in 3 male and 8 female children aged 6-14 years as well as in 12 male and 15 female children aged 14 to 20 years. Benign neoplasm of the breast in 2019 in Prilep was diagnosed in 4 female children aged 14-20 years while benign neoplasm of the urinary organs was diagnosed and confirmed in 1 male child aged 14 to 20 years. Other or all neoplasms of uncertain or unmarked nature have been diagnosed in 1 male child under 3 years of age, 3 male and 5 female children aged 3-6 years, 7 male and 9 female children aged 6-14 years years and in 12 male and 7 female children aged 14-20 years.

IV. Conclusion

Most cancer cases were detected in 2018 – 125 cases, then in 2015 (117), 2016 (116), 2017 (104) and the least cases were detected in 2019 (94 cases). In all periods, most affected was the age group from 14 to 20 years. Mostly were affected the female patients (4:1). Most common neoplasms were the ones with uncertain nature and benign skin cancers.

The purpose of the research is primarily to guide the population from the timely diagnosis of malignant and benign tumors in children as well as the efficient and timely treatment in order to avoid adverse consequences for human health and life.

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Jihe Zhu. P. al. "Statistical data for children with malignant and benign diseases according to age and gender in Prilep in the period from 2015-2019." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(08), 2021, pp. 17-21.