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Analysis of cancer incidence structure in the Republic of Uzbekistan

Relevance: Globocan reports 19.3 million new cases of malignant neoplasms in 2020 globally. Mammary gland cancer has become the most commonly diagnosed oncological pathology, followed by lung, colon and rectum, prostate, and stomach cancers. In Uzbekistan, malignant neoplasms of the breast, stomach, cervix, lungs, and brain dominate the structure of cancer incidence.

The study aimed to analyze the cancer incidence trends and structure in the Republic of Uzbekistan in 2020.

Results: In 2020, 21976 new cancer cases were registered in Uzbekistan. The ratio of men and women newly diagnosed with cancer was 0.7:1.4. Cancers of the breast, cervix, and ovary were the most common in women; cancers of the stomach, lung, and prostate – in men. Hemoblastoses were more common at a young age, breast cancer – at working age, and stomach cancer – at old age.

Conclusions: The statistical information analysis showed that in 2020 the cancers of the mammary gland, stomach, and cervix were leading in the overall cancer structure, with significant differences in different age categories. This determines the need for further improvement of cancer care in Uzbekistan.

Keywords: Malignant neoplasms, cancer incidence, cancer incidence structure, Republic of Uzbekistan.

Introduction: Cancer is considered the leading cause of death and one of the main obstacles to increasing life expectancy. According to Globocan, 19.3 million new cases of malignant neoplasms (MNs) and about 10.0 million deaths from MNs were registered worldwide in 2020. Almost 2.3 million new cancer cases in women were due to breast cancer. Cancers of the breast (11.7%), lung (11.4%), colorectum (10.0%), prostate (7.3%), and stomach (5.6 %) led the cancer incidence structure. Lung cancer remained the leading cause of death from cancer and caused 1.8 million deaths (18%). Other causes of death included cancers of the rectum (9.4%), liver (8.3%), stomach (7, 7%), and breast (6.9%) [1].

According to World Health Organization (WHO), in 2020, MNs were the main cause of death at the age below 70 in 112 countries, the second in frequency cause of death in 183 countries, and the third/fourth – in 23 countries [1, 2].

In general, the burden of cancer morbidity and mortality is growing rapidly worldwide. This trend reflects the annual aging of the population and demographic growth and the changing prevalence of the main risk factors for MNs. Some of these risks are associated with the level of socio-economic development [3, 4].

Strengthening public health and ensuring the upbringing of a mature and harmoniously developed young generation is one of the priority directions of the Republic of Uzbekistan state policy after gaining independence. Currently, Uzbekistan pays special attention to creating conditions for further improving the quality of medical services in all country regions. Improving and modernizing oncological care for the population is one of the main

directions of further reforming the health care system and one of the most important priorities for the country's social development [5, 6].

Increasing the life expectancy of cancer patients and improving their quality of life is the most important task of the cancer service. There is an urgent need for a detailed assessment of the state of the cancer service in Uzbekistan on the total and the regions. In our opinion, such an assessment will help identify the problems of cancer care and outline the strategic and tactical ways of problem-solving for the near future.

Statistical information is the basis for the development and monitoring of the results of anti-cancer activities. This article demonstrates detailed analysis of cancer incidence in Uzbekistan.

The study aimed to analyze the cancer incidence trends and structure in the Republic of Uzbekistan in 2020.

Materials and Methods:

The object of the study was statistical data on all cases of malignant neoplasms in the Republic of Uzbekistan obtained from the reports provided by oncological institutions in the state form of accounting and reporting approved by the Ministry of Health of the Republic of Uzbekistan – No. 7 "Information on diseases of malignant neoplasms."

To calculate all indicators, we used the data of the State Statistics Committee of the Republic of Uzbekistan on the average annual population by region for 2020.

Results:

In 2020, 21,976 new cases of malignant (MN) neoplasms were detected in the Republic of Uzbekistan (of them, 9059 (41.2%) and 12917 (58.8%) in males and fe-

males, respectively). The growth rate of this indicator was negative compared to 2019 and amounted to -12.1% (in 2019, the growth rate was positive and amounted to 5.4%). The incidence rate of malignant tumors per 100,000 population of the Republic of Uzbekistan was 64.8. Due to the difficulties in cancer cases registration

during the Covid-19 pandemic, this figure in 2020 was quite low [7, 8].

In the structure of cancer incidence for 2020, the leading positions were retained by cancers of the breast, stomach, and cervix with incidence rates of 9.8; 5.1; and 4.8 per 100,000 population, respectively (Figure 1).

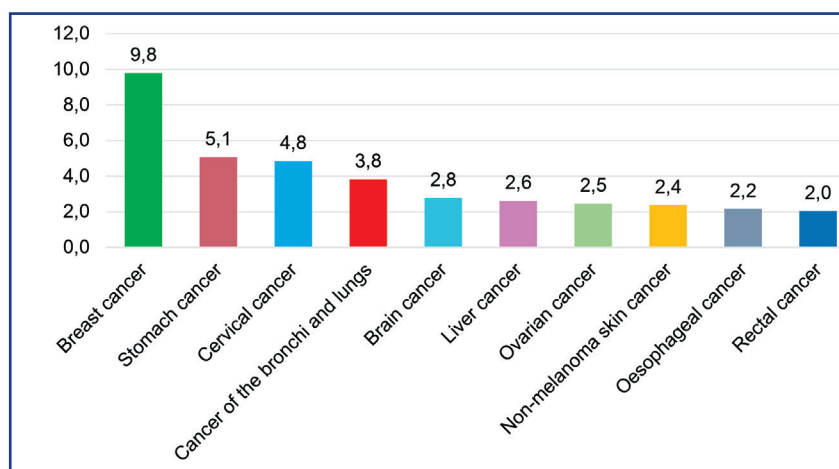


Figure 1 – The structure of cancer incidence in the Republic of Uzbekistan, 2020

The structure of female cancer incidence was as follows: breast cancer – 19.5‰, cervical cancer – 9.7‰, and ovarian cancer – 4.9‰. In males, the cancer inci-

dence was led by the cancers of the stomach – 6.2‰, the bronchi and lungs – 5.4‰, and the prostate – 3.0‰ (Figures 2, 3).

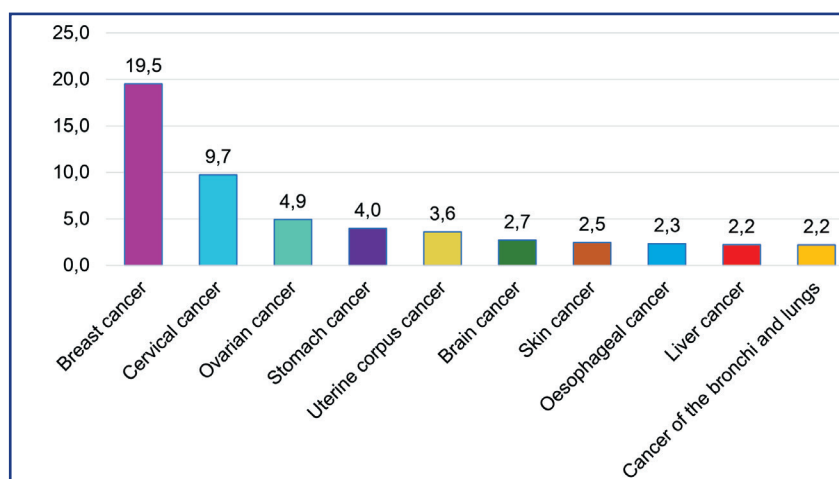


Figure 2 – The structure of female cancer incidence in the Republic of Uzbekistan, 2020

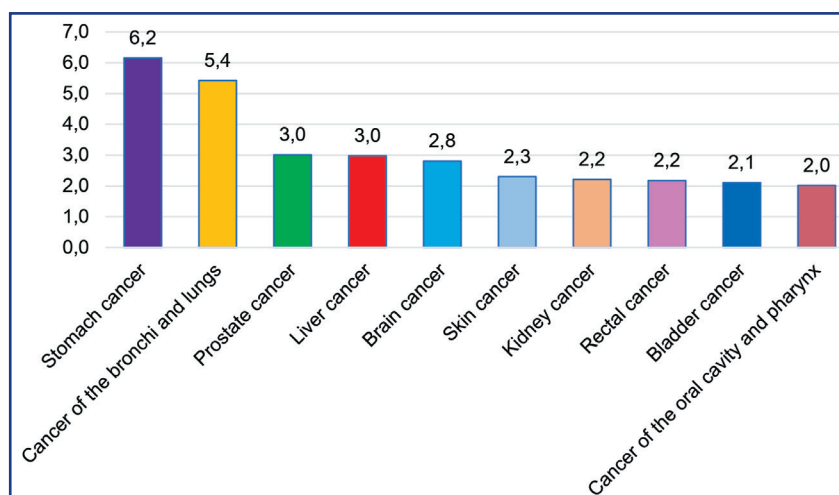


Figure 3 – The structure of male cancer incidence in the Republic of Uzbekistan, 2020

Worth noting that the proportion of MN of the digestive system in women (12.5%) was twice lower than in men (24.6%). Every 4th MN in men (11.4%) was localized in the respiratory

organs; in women, the share of this MN was four times lower (3.4%). The share of MN of the head, neck, and urinary system organs in men was 2.5 times higher than in women (Figure 4).

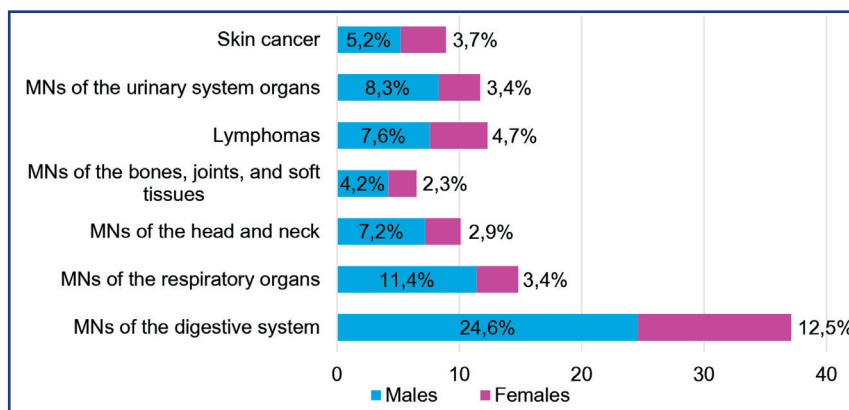


Figure 4 – Shares of malignant neoplasms of various organs and systems in men and women in Uzbekistan

The study of the incidence rate by age categories showed a constant increase in this indicator until the age of 70-74, but with a sharp decline in cancer inci-

dence at 75+. Most likely, this indicates that in old age, the true cause of death has not been sufficiently studied (Figure 5).

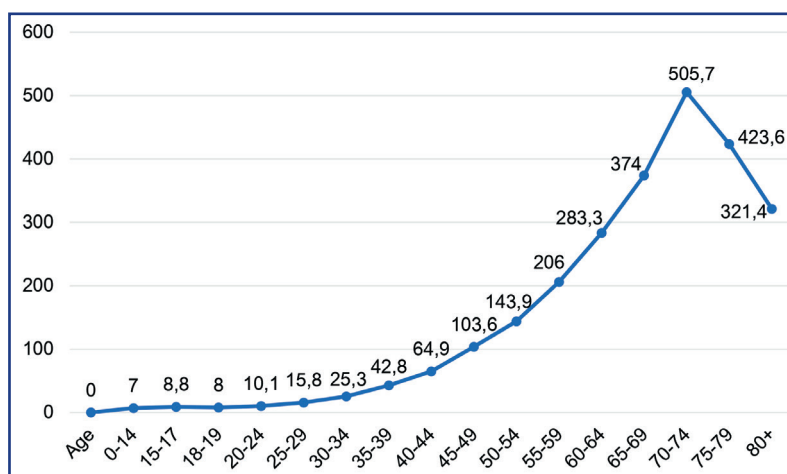


Figure 5 – Incidence rate per 100,000 population by age, 2020

The study of shares of all new cancer cases by age showed the predominance of hemoblastoses (26%), cancers of the brain (16.3%), bones and joints (6.9%), and kidneys (5,7%) at the age below 30. At the age of 30-45, the cancers of the breast (23.5%), cervix (10,8%), and brain

(8.8%) prevailed. At the age of 45-65, the cancers of the breast (18.2%), cervix (10.0%), stomach (7.6%), and lung (7.3%) were most common. In aged people, the cancers of the stomach (10.5%), lung (9.2%), and skin (8.3%) prevailed (Figures 6, 7).

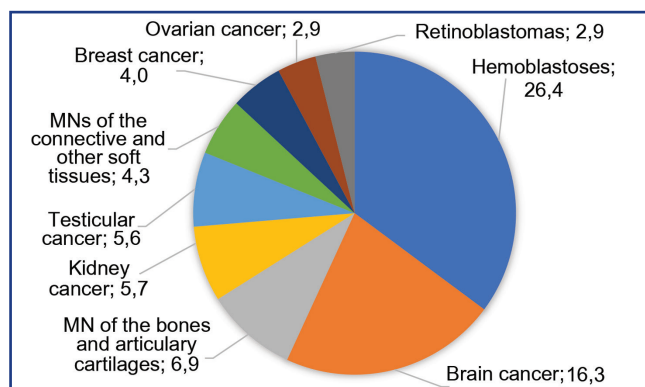


Figure 6 – Malignant neoplasms, most common at the age below 30 in Uzbekistan, 2020 (%)

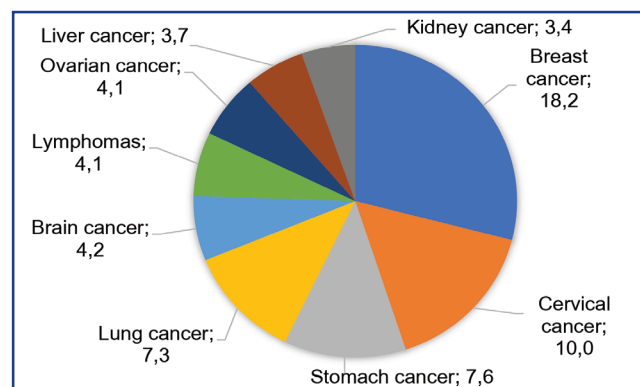


Figure 7 – Malignant neoplasms, most common at the age of 45-65 in Uzbekistan, 2020 (%)

At that, at the age of 30 to 45, brain cancer (14.3%), lymphomas (13.6%), testicular cancer (10.0%), and stomach cancer (8.0%) prevailed in males. Breast cancer (34.3%), cervical cancer (15.9%), lymphomas (6.4%), and brain cancer (6.3%) prevailed in females (Figures 8, 9).

The incidence structure at the age of 45-65 also differed by sex. In males of this age, the incidence structure was dominated by the cancers of the lung (13.5%), stom-

ach (13.2%), and liver (6.0%); in females – the cancers of the breast (29.5%), cervix (16.3%), and ovary (6.7%). At the age of 65+, the male incidence structure was dominated by the cancers of the stomach (14.0%), lung (13.1%), and prostate (8.8%); in females – the cancers of the breast (17.8%), skin (9.4%), and cervix (7.5%). The share of skin malignancies (8.5% in men and 9.4% in women) shows their notable significance at this age (Figures 10, 11).

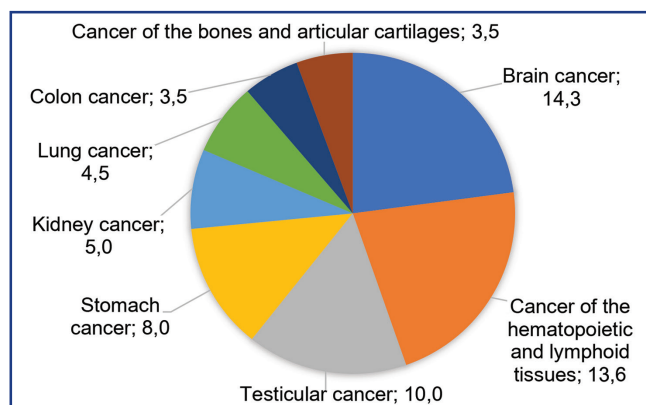


Figure 8 – Malignant neoplasms, most common in males at the age of 30-45 in Uzbekistan, 2020 (%)

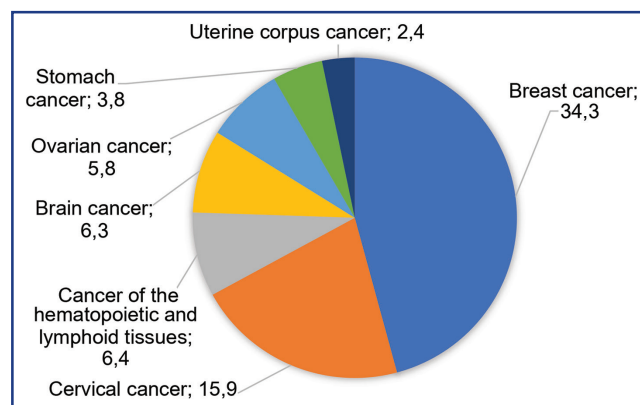


Figure 9 – Malignant neoplasms, most common in females at the age of 30-45 in Uzbekistan, 2020 (%)

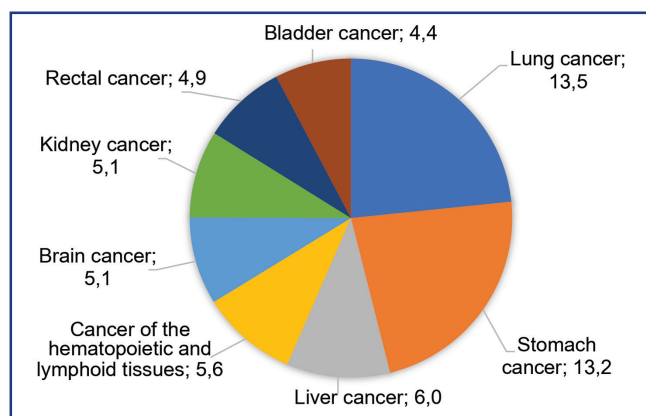


Figure 10 – Malignant neoplasms, most common in males at the age of 45-65 in Uzbekistan, 2020 (%)

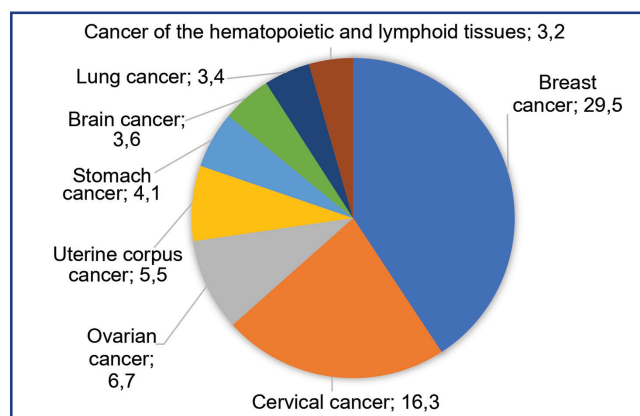


Figure 11 – Malignant neoplasms, most common in females at the age of 45-65 in Uzbekistan, 2020 (%)

The highest incidence by region of Uzbekistan per 100 000 population in 2020 was registered in the city of Tashkent (190.4), and in Bukhara (82.3) and Tashkent (70.2) re-

gions. In turn, the lowest cancer incidence was registered in Syrdarya (35.1), Surkhandarya (44.2), and Samarkand (48.0) regions (Figure 12).

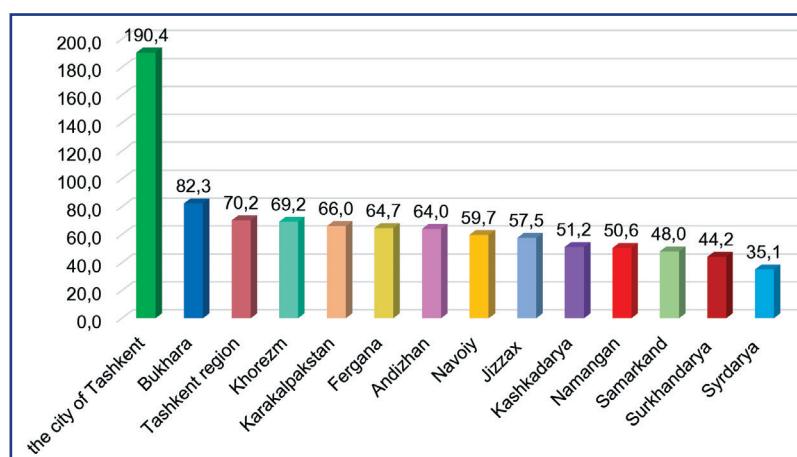


Figure 12 – Cancer incidence per 100 000 population by region of Uzbekistan, 2020

Conclusions:

The statistical information analysis showed that in 2020 the cancers of the mammary gland, stomach, and cervix were leading in the overall cancer structure, with significant differences in different age categories. In men, cancers of the stomach, lung, and prostate were most frequent; in women – cancers of the breast, cervix, and ovary. Cancer incidence in Uzbekistan was the highest at the age of 65-75; by regions – in the city of Tashkent and Bukhara and Tashkent regions. Hemoblastoses prevailed in children; lung cancer and breast cancer – in males and females aged 30-45, respectively. The obtained statistics are the main basis for developing measures aimed at improving the cancer incidence and mortality rates in the Republic of Uzbekistan.

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ТҶУЖЫРЫМ

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Ўзбекистон Республикасындағы онкологиялық аурулардың құрылымын талдау

Өзектілігі: Globocan мәліметтері бойынша, 2020 жылы бүкіл әлемде қатерлі ісіктердің 19,3 млн. жаңа жағдайы тіркелген. Әйелдерде сүт безі қатерлі ісігі жиі диагноз қойылған онкологиялық патологияға айналды, одан кейін өкпе қатерлі ісігі, колоректальды қатерлі ісік, қуық асты безі қатерлі ісігі және асқазан қатерлі ісігі пайда болды. Өз кезегінде Өзбекстанда онкологиялық аурулардың жалпы құрылымында сүт безі, асқазан, жатыр мойны, бронхтар мен өкпе мен мидың қатерлі ісіктері жетекші орын алады.

Зерттеу мақсаты: 2020 жылы Өзбекстан Республикасындағы онкологиялық аурулардың тенденциялары мен құрылымын талдау.

Нәтижелері: Өзбекстанда 2020 жылы 21976 жаңа қатерлі ісік тіркелді. Алғаш рет анықталған ерлер мен әйелдердің арақатынасы 0,7:1,4 құрады. Сүт безінің, жатыр мойнының және аналық бездердің қатерлі ісіктері әйелдерде жиі кездесетін онкологиялық патологияға айналды, ал ерлерде асқазанның, бронхтың және өкпенің және қуық асты безінің қатерлі ісіктері жиі кездеседі. Жас кезінде гемобластоздар жиі диагноз қойылады, еңбекке қабілетті жаста – сүт безінің қатерлі ісіктері, ал егде жаста – асқазанның қатерлі ісіктері.

Қорытындылар: Статистикалық ақпаратты талдау 2020 жылы онкологиялық аурулардың жалпы құрылымында сүт безінің, асқазанның және жатыр мойнының қатерлі ісіктері жетекші орын алғанын көрсетті. Әр түрлі жас санаттарында қатерлі ісік ауруының құрылымында айтарлықтай айырмашылықтар байқалды. Бұл Өзбекстандағы онкологиялық көмекті одан әрі жетілдіру қажеттілігін айқындайды.

Түйінді сөздер: қатерлі ісіктер (ҚІ), онкологиялық аурулар, онкологиялық аурулардың құрылымы, Өзбекстан Республикасы.

АННОТАЦИЯ

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Анализ структуры онкологической заболеваемости в Республике Узбекистан

Актуальность: По данным Globocan, в 2020 г. во всем мире было зарегистрировано 19,3 млн. новых случаев злокачественных новообразований (ЗН). Рак молочной железы у женщин стал наиболее часто диагностируемой онкологической патологией, за ним следует рак легких, колоректальный рак, рак предстательной железы и рак желудка. В свою очередь, в Узбекистане в общей структуре онкологической заболеваемости ведущие позиции занимают ЗН молочной железы, желудка, шейки матки, бронхов и легких и головного мозга.

Цель исследования: проанализировать тенденции и структуру онкозаболеваемости в Республике Узбекистан в 2020 г.

Результаты: В Узбекистане в 2020 г. зарегистрировано 21976 новых случаев ЗН. Соотношение впервые выявленных мужчин и женщинам составило 0,7:1,4. ЗН молочной железы, шейки матки и яичников стали наиболее часто диагностируемыми онкологическими патологиями у женщин, а у мужчин чаще встречались ЗН желудка, бронхов и легких и предстательной железы. В молодом возрасте чаще диагностируются гемобластозы, в трудоспособном возрасте – ЗН молочной железы, а в пожилом возрасте – ЗН желудка.

Выводы: Анализ статистической информации показал, что в общей структуре онкологических заболеваний в 2020 году лидирующие позиции занимали злокачественные новообразования молочной железы, желудка и шейки матки. В различных возрастных категориях в структуре онкологической заболеваемости отмечались существенные различия. Это определяет необходимость дальнейшего совершенствования онкологической помощи в Узбекистане.

Ключевые слова: злокачественные новообразования (ЗН), онкозаболеваемость, структура онкозаболеваемости, Республика Узбекистан.