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STATISTICAL ANALYSIS OF ENDOMETRIOSIS, PROSTATE, AND BREAST CANCER INCIDENCE IN SAMARKAND STATE: A RETROSPECTIVE REVIEW OF PATIENT DATA (2022–2024)

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Abstract: This study presents a retrospective analysis of the incidence and clinical staging of endometriosis, prostate cancer (РПЖ), and breast cancer (РМЖ) in Samarkand State over a three-year period (2022–2024). We examine patient data from the Samarkand Cancer Center to identify trends in the number of new diagnoses and the distribution of disease stages at the time of diagnosis. This analysis highlights the burden of these conditions in the region and provides a basis for improving early detection, clinical management, and treatment outcomes.

Keywords: Endometriosis, prostate cancer, breast cancer, disease staging, Samarkand, epidemiology, treatment standards.

Introduction

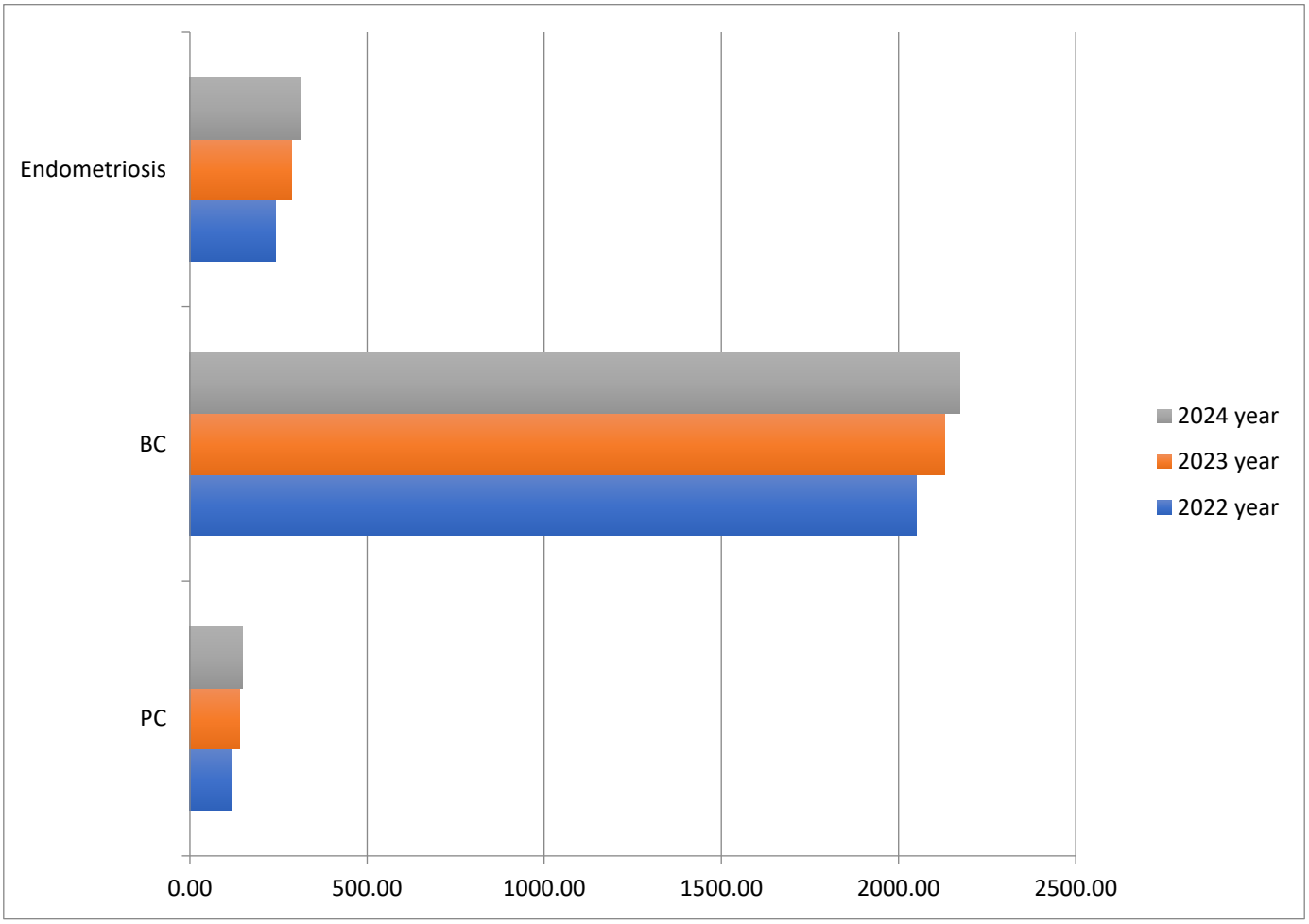
Endometriosis, prostate cancer, and breast cancer are significant health concerns globally, with varying incidence rates depending on geographical, environmental, and genetic factors. In Samarkand, a major city in Uzbekistan, these diseases have shown varying trends in recent years, particularly with respect to patient diagnosis and disease progression at the time of first medical consultation. This study aims to explore the epidemiology and clinical staging of endometriosis, prostate cancer, and breast cancer, using patient data from the Samarkand State Cancer Center, with the goal of informing public health strategies and clinical practices.

Methods

This is a retrospective cohort study using data from the Samarkand State Cancer Center. The data spans from January 2022 to June 2024, including new diagnoses of endometriosis, prostate cancer (РПЖ), and breast cancer (РМЖ), as well as disease staging at the time of diagnosis.

Data Collection

- **Prostate Cancer (РПЖ)**: The number of prostate cancer patients who registered with the center in 2022, 2023, and the first half of 2024 was recorded. Additionally, the distribution of prostate cancer patients by stage was documented for the years 2022–2024.
- **Breast Cancer (РМЖ)**: Similarly, the number of breast cancer patients and their staging data were collected from the Cancer Center's records for 2022, 2023, and the first half of 2024.
- **Endometriosis**: The number of patients diagnosed with endometriosis in the same period was reviewed.



Statistical Analysis

Descriptive statistics were used to summarize the incidence rates and staging of each disease. The data was further analyzed to observe trends over time and differences in the distribution of disease stages. Statistical software (e.g., SPSS or R) was employed to calculate the percentage changes year-over-year and to perform any necessary tests for statistical significance (e.g., Chi-square tests for categorical data).

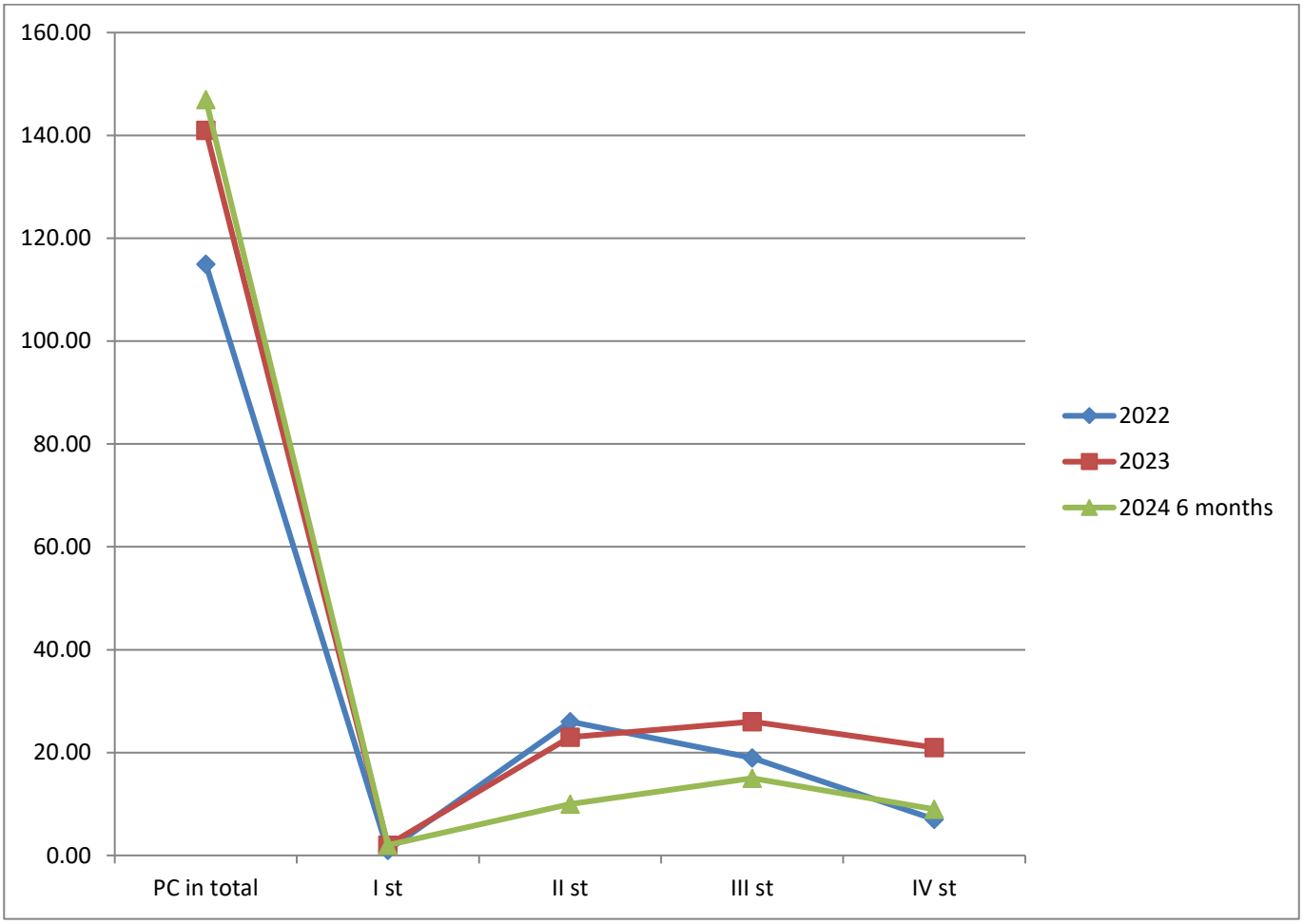
Results

Incidence of Prostate Cancer (РПЖ)

The number of prostate cancer cases registered in the Samarkand Cancer Center increased from 115 in 2022 to 141 in 2023, and 147 in the first half of 2024. These numbers represent an annual increase in cases.

Prostate Cancer Staging

- **2022**: 1 (Stage I), 26 (Stage II), 19 (Stage III), 7 (Stage IV)
- **2023**: 2 (Stage I), 23 (Stage II), 26 (Stage III), 21 (Stage IV)
- **2024 (6 months)**: 2 (Stage I), 10 (Stage II), 15 (Stage III), 9 (Stage IV)



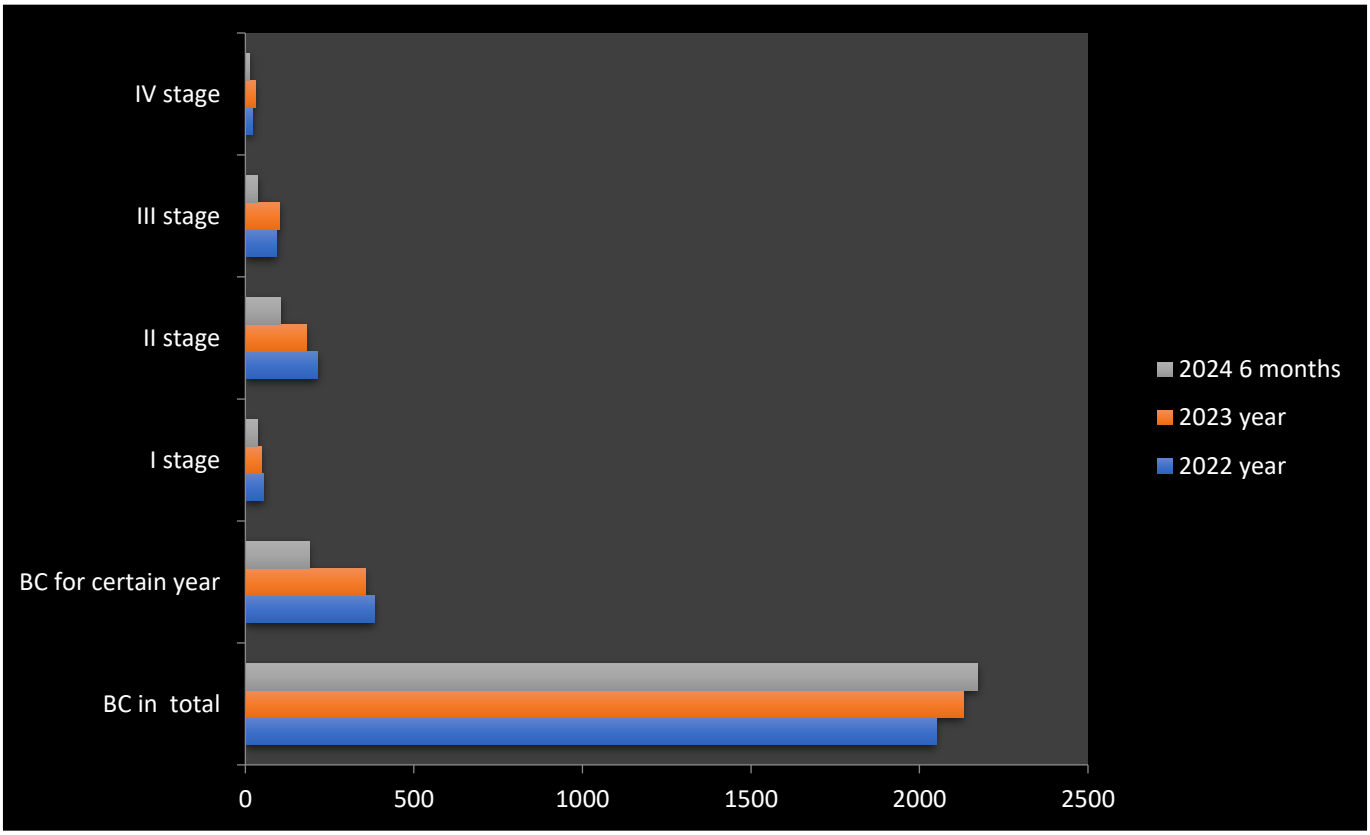
While the total number of cases increased, there was a notable shift towards later-stage diagnoses in 2023, and this trend continued in 2024, particularly for Stage III and IV cases.

Incidence of Breast Cancer (РМЖ)

Breast cancer cases also showed an increase in total registrations from 2050 in 2022 to 2130 in 2023, and 2173 in 2024 (6 months).

Breast Cancer Staging

- **2022**: 54 (Stage I), 214 (Stage II), 92 (Stage III), 22 (Stage IV)
- **2023**: 48 (Stage I), 181 (Stage II), 102 (Stage III), 30 (Stage IV)
- **2024 (6 months)**: 35 (Stage I), 105 (Stage II), 37 (Stage III), 13 (Stage IV)



Despite the increase in overall breast cancer cases, early-stage diagnoses (Stage I) appear to have decreased slightly, while later stages (Stage III and IV) saw relatively stable numbers.

Endometriosis

The number of endometriosis cases reported increased from 241 in 2022 to 287 in 2023, and 311 in the first half of 2024. This increase mirrors the general trend observed in both prostate and breast cancer cases.

Discussion

The rising incidence of prostate and breast cancer in Samarkand, particularly in later stages, suggests a need for improved screening and early detection programs. The increased awareness of endometriosis, reflected in the rising number of diagnoses, could be linked to better diagnostic practices and increasing patient education.

Disease Trends and Implications

- **Prostate Cancer**: The shift towards more advanced stages of prostate cancer could be attributed to late presentation and limited access to early diagnostic tools. Further investigation into the accessibility of screening services and public awareness campaigns is recommended.
- **Breast Cancer**: Similarly, while breast cancer diagnoses are increasing, the decline in early-stage (Stage I) cases could signal challenges in early detection, although improved awareness and screening programs could address this.
- **Endometriosis**: The rise in endometriosis diagnoses may indicate better recognition of symptoms and improved diagnostic techniques, though it also underscores the ongoing need for research into optimal treatment options.

Treatment Standards

Both prostate and breast cancers follow standardized treatment protocols. For prostate cancer, treatment often includes surgery, radiation therapy, or hormone therapy, depending on the stage of the disease. Breast cancer treatment varies widely based on the stage, with early-stage cancers typically managed through surgery and chemotherapy, while advanced-stage cancers may require a combination of chemotherapy, radiation, and targeted therapies.

In the Samarkand region, adherence to these standards needs to be carefully monitored, particularly as staging data suggests late-stage diagnosis. Regional differences in healthcare access, availability of treatment facilities, and patient education must also be considered.

Conclusion

The data from Samarkand's cancer registry highlights important trends in the incidence and staging of prostate cancer, breast cancer, and endometriosis. While the overall number of cases has increased, particularly in more advanced stages, this underscores the need for enhanced screening, early detection, and more widespread patient education. Given the increasing incidence of these diseases, further research is required to understand underlying causes, improve diagnostic practices, and enhance treatment outcomes.

Recommendations

1. **Enhanced Screening Programs**: Especially for prostate and breast cancers, to catch cases at earlier, more treatable stages.
2. **Public Awareness Campaigns**: Focused on early detection and risk factors for these cancers and endometriosis.
3. **Improvement in Treatment Accessibility**: Ensuring that both urban and rural populations have access to high-quality cancer treatment.

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