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Short-Term Cancer Trends in Tabuk City, Saudi Arabia: A Retrospective Study (2023–2025)

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Abstract

Background: Cancer is the commonest cause of death in people over 70 years of age. Importantly, the global cancer trends have shifted in recent years; research regarding cancer in Tabuk City, Saudi Arabia, is scarce. We aimed to assess the patterns and trends of cancer in Tabuk, Saudi Arabia, from January 2023 to December 2025.

Methods and Results: A retrospective study was conducted at King Fahd Specialist Hospital, Tabuk, Saudi Arabia. The patients' records during the stated period were reviewed. A checklist was used to collect sociodemographic factors, tumor stage, histological subtypes, laterality, extent, and diagnostic methods for cancers. The most prevalent cancer was breast cancer (25.4% to 36.7%), followed by colorectal (14.7% to 19.9%) and thyroid (2% to 12.2%); 54.2% to 63.5% were women, and the mean age was 53.0±16.6 years. Only thyroid cancer demonstrated a significant decreasing trend (χ^2=21.98, P<0.001), whereas no significant trends were observed for the remaining major cancer types. The diagnosis was histopathological in the majority of cases, and regional lymph node involvement was the most common extent of disease at diagnosis.

Conclusion: Breast cancer was the most prevalent cancer in Tabuk City, Saudi Arabia, followed by colorectal and thyroid cancers; females were more affected. The cancer trend was stable in the short term, except for thyroid cancer, which showed a decreasing trend. The diagnosis was histopathological in the majority of cases, and the local lymph nodes were commonly involved at the time of diagnosis. (**International Journal of Biomedicine. 2026;16(4):469-476.**)

Keywords: cancer • prevalence • trends • Tabuk • Saudi Arabia

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Introduction

Worldwide, 19.3 million new cancer cases and 10 million new cancer deaths were reported globally in 2020, according to the GLOBOCAN 2020 data on cancer incidence and mortality compiled by the International Agency for Research on Cancer.[1] The most common malignancy was breast cancer in females (2.3 million new cases and 11.7% of all cancers), followed by lung cancer (11.4%), colorectal cancer (10%), prostate cancer (7.3%), and stomach cancer (5.6%).[2]

Cancer is the first or second leading cause of death in the age group >70 years worldwide, with an increasing burden on the patients, community, and healthcare systems, and is a significant cause of poor quality of life.[3]

Importantly, the global cancer trends have shifted in recent years, with breast cancer overtaking lung cancer to become the most commonly diagnosed cancer worldwide in 2020. Despite this change in incidence, lung, liver, stomach, breast, and colorectal cancers remained the five leading causes of cancer-related mortality. Notably, liver cancer showed a significant change in mortality ranking, rising from the third leading cause of cancer death in 2018 to the second leading cause in 2020, highlighting evolving patterns in the global cancer burden.[4]

Cancer incidence in Saudi Arabia has increased over the last two decades, ratcheting up to global levels. There is a marked upsurge of cancer burden in terms of incidence and the potential economic burden, which may inform cancer control measures.[5,6] Cancer incidence was slightly higher among Saudi nationals than among non-Saudi residents, with crude incidence rates of 66.86 and 66.28 per 100,000 population, respectively, during 2021–2022. Saudi women had higher crude and age-standardized incidence rates than men, although cancer rates in men surpassed those of women in people aged >70 years.

Among the Saudi population, the most frequently diagnosed cancers were breast, colorectal, and thyroid cancers.[7] A study published in Saudi Arabia showed that the risk factors for breast cancer are obesity, family history, and use of oral contraceptives; most cases originated in the central region (80.1%), with the southern regions accounting for 12.7%. Hypertension and diabetes mellitus were the

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predominant coexisting conditions. Invasive ductal carcinoma was identified as the most common histological subtype (89.7%). Most patients were diagnosed at TNM stages II and III (55.2%), and metastases were present in 27.7% of cases.[8]

A sustainable increasing trend was observed in breast cancer in Saudi Arabia during the past 20 years, with a 151.7% surge, accounting for 30.9% of cancer in Saudi women. Although the increasing trend is universal, the Eastern region recorded the highest rate, and the Al-Jouf region showed the highest increasing trend. The steepest rise was observed in the age group 70 to 74 years.[9]

Breast cancer in the Eastern Province of Saudi Arabia showed a relatively young mean age at diagnosis (49 years), with two-thirds locally advanced disease. The invasive ductal carcinoma was reported in four out of five women, along with a predominance of hormone receptor-positive disease. Importantly, an 80% rise in new cases is predicted by 2028, so there is an urgent need to strengthen screening programs for earlier detection.[10] Yanbu authorities in Saudi Arabia implemented a quality improvement strategy that led to a substantial increase in screening attendance and a marked improvement in diagnostic efficiency. This success could be replicated in other regions.[11]

Alshamsan et al.[12] highlighted the rapid increase of breast cancer in Saudi Arabia during the period from 2002 to 2020 and stressed the need to expand mammography screening coverage and strengthen breast cancer care capacity in Saudi Arabia.

Regarding cancer of the gastrointestinal tract, an increasing trend was observed, mirroring changes in socioeconomic factors with the adoption of sedentary lifestyles and Westernized unhealthy diets. The increasing rates of obesity and diabetes, hepatitis, and Helicobacter pylori are other plausible explanations.[13] Alyami and colleagues[14] conducted a study in the South Region of Saudi Arabia and observed that GIT cancer was the commonest, with colon and liver cancers identified as the most common specific cancer types. These findings highlight the burden of GIT cancer and emphasize the need for interventions targeting modifiable risk factors in Saudi Arabia.

Colorectal cancer (cancer of the colon and rectum) in Saudi Arabia presents in the advanced stage in 29% and at a younger age. KRAS mutations are observed in 49.6%, while BRAF mutations are found in only 0.4%. Survival outcomes were affected by age at diagnosis, highlighting the importance of demographic rather than molecular predictors in survival.[15,16]

Colorectal cancer is on the rise and varies significantly by geographical region. It is the fourth leading cause of death in some areas and is ranked third after breast and bronchial cancer in some regions.[17] Colorectal cancer is the third leading cause of cancer death globally. A recent survey found that the prevalence of this cancer increased with age, and 12.9% were suffering from polyps.[18] In Saudi Arabia, colorectal cancer is the second leading cause of death in men and third in women. Importantly, the disease usually presents with lymph node involvement and distant metastasis.[19]

Although lung cancer in Saudi Arabia demonstrates a relatively low crude incidence, there is an increasing trend with a higher frequency of aggressive histological subtypes. Males are more affected due to the high tobacco exposure and environmental risks. Regionally, the Eastern region recorded the highest prevalence, followed by Tabuk, Riyadh, and the Northern regions. These findings highlight clear regional and demographic disparities, along with an overall increasing burden of lung cancer in Saudi Arabia. These findings highlight the need for targeted tobacco control policies, earlier detection strategies, and region-specific cancer prevention programs to reduce the lung cancer burden in Saudi Arabia.[20,21]

Regarding thyroid cancer, nodules may be present in nearly two-thirds of the population, depending on age. However, only 20% of those cases are clinically significant (cancer, pressure symptoms, and thyroid dysfunction in 10%, 5%, and 5%, respectively). Thyroid nodules are common, and thyroid cancer occurs in 7%-15% of them.[22]

Thyroid carcinoma is the most common endocrine malignancy among Saudi women and the ninth most common among men; the incidence increased twenty-twofold among men and fifteenfold in females. Furthermore, the mortality increased threefold and sixfold among women and men, respectively.[23] Thyroid cancer in Saudi Arabia is diagnosed at a younger age and with larger sizes; in addition, persistence and recurrence were high.[24,25] Most cases were benign, and papillary neoplasms were the commonest.[26] The incidence is controversial in the Northern region of Saudi Arabia, including Tabuk.[27,28]

The International Agency for Research reported one million new cases of gynecological cancer in 2020, accounting for nearly one in five of all cancers,[1,29] of them, 13,000 cases were reported in Saudi Arabia. The literature on gynecological cancer in Saudi Arabia is scarce and has been limited by the small sample sizes and short durations of the published studies.[30] Gynecological cancer is ranked fourth in Saudi Arabia, after breast, thyroid, and colorectal cancers. There is significant variation in gynecological cancer by geographic regions. Plausible explanations could be the interaction of genetics and environmental factors.[31]

The situation is not different in the Gulf countries (GCC): an emerging trend and shifting epidemiological pattern have been observed due to changing lifestyle factors (obesity and physical inactivity), with breast, colorectal, and thyroid cancers being the most prevalent. Historically, cancer has been lower in the GCC than in many countries in the West. However, a rising trend was observed over the last two decades, with projections suggesting a substantial increase in both incidence and mortality; the aging population and modifiable risk factors are to blame.[32-35] Breast cancer remains the most common cancer among women in the GCC, mainly due to BRCA1/2 mutations, lifestyle, and reproductive factors.[36,37] Lung cancer and thyroid cancer showed rising trends. Plausible explanations could include increased smoking and improved diagnostic practices.[38,39] Prostate cancer is also emerging as an increasingly important malignancy in the region, and many cases are diagnosed at advanced stages due to limited early detection practices.[40]

In our study, we aimed to assess the cancer incidence

pattern in Tabuk City, Saudi Arabia, from January 2023 to December 2025. Investigating the pattern of cancer in Saudi Arabia is justifiable due to the rising rate and changing pattern of cancers both worldwide and in Saudi Arabia. In addition, research on this important disease is scarce in the Tabuk Region. For that reason, it is important to provide readily accessible data to inform the scientific community, healthcare providers, and policymakers. Current data will help determine the best treatment option and guide preventive measures. The Kingdom of Saudi Arabia is a large country with significant geographical diversity.[41,42] Therefore, studies assessing the patterns and trends of cancer across different regions are justified. The current data will provide a baseline for cancer in Tabuk City and inform policymakers for future planning on intervention and prevention.

Patients and Methods

A retrospective study was conducted in King Fahd Specialist Hospital, and the patients' records from January 2023 to December 2025 were reviewed.

Inclusion Criteria

• Age: ≥18 years

• Diagnosis: Adult patients with malignant or in situ neoplasms confirmed histopathologically or through accepted clinical and imaging criteria.

Exclusion Criteria

Cancer in children < 18 years, histologically/imaging not confirmed.

Data Collection Procedure

A checklist was used to collect age, gender, residence, nationality, marital status, cancer type, tumor stage, histological subtypes, laterality, extent, and the diagnostic methods (histology versus clinical diagnostic methods, including imaging).

Sample Size

Patients who were confirmed to have cancer in King Fahd Specialist Hospital during the years 2023 and 2025

Sampling Technique

All patients who were diagnosed with cancer during the stated period (2023-2025).

Ethical Consideration

With strict adherence to the Declaration of Helsinki, no patient's details were recorded. The data collected were stored by the first author in a dedicated encrypted file and used only for this research. Ethical approval was obtained from the ethics committee of the University of Tabuk (Ref. UT-831-378-2026, dated February 16, 2026).

Statistical Analysis

The Statistical Package for the Social Sciences (IBM SPSS, Version 29, New York) was used for data analysis, and the data were presented as mean ± SD. Descriptive statistics will summarize demographic and baseline characteristics. The association between cancer type and demographic factors was assessed using the Chi-Square test. The cancer trends were assessed using the Cochran–Armitage test for linear trend.

Results

A total of 684 cancer cases were recorded in Tabuk City between 2023 and 2025 (Table 1).

Table 1.

Frequency of different types of cancer in Tabuk City during the period from January 2023 to December 2025.

Cancer type	2023 (n = 197), n (%)	2024 (n = 236), n (%)	2025 (n = 251), n (%)
Colorectal	31 (15.7%)	47 (19.9%)	37 (14.7%)
Small intestine	3 (1.5%)	4 (1.7%)	5 (2.0%)
Stomach	3 (1.5%)	8 (3.4%)	8 (3.2%)
Esophagus	3 (1.5%)	3 (1.3%)	3 (1.2%)
Liver	8 (4.1%)	8 (3.4%)	14 (5.6%)
Pancreas	1 (0.5%)	5 (2.1%)	3 (1.2%)
Lung	14 (7.1%)	12 (5.1%)	8 (3.2%)
Breast	58 (29.4%)	60 (25.4%)	92 (36.7%)
Thyroid	24 (12.2%)	6 (2.5%)	5 (2.0%)
Urinary bladder	3 (1.5%)	5 (2.1%)	7 (2.8%)
Lymphomas	14 (7.1%)	32 (13.6%)	22 (8.8%)
Kidney	4 (2.0%)	6 (2.5%)	9 (3.6%)
Oropharyngeal	11 (5.6%)	12 (5.1%)	7 (2.8%)
Endometrium	5 (2.5%)	2 (0.8%)	5 (2.0%)
Skin	4 (2.0%)	6 (2.5%)	9 (3.6%)
Testis	1 (0.5%)	4 (1.7%)	2 (0.8%)
Prostate	4 (2.0%)	2 (0.8%)	2 (0.8%)
Cervix	0 (0.0%)	1 (0.4%)	1 (0.4%)
Mandible	1 (0.5%)	2 (0.8%)	1 (0.4%)
Gallbladder	0 (0.0%)	1 (0.4%)	1 (0.4%)
Soft tissue	0 (0.0%)	7 (3.0%)	0 (0.0%)
Ovary	0 (0.0%)	1 (0.4%)	0 (0.0%)
Parotid	1 (0.5%)	1 (0.4%)	1 (0.5%)
Aorta	1 (0.5%)	0 (0.0%)	1 (0.4%)
Lip	1 (0.5%)	0 (0.0%)	1 (0.4%)
Adrenal gland	1 (0.5%)	0 (0.0%)	0 (0.0%)
Other/unknown	1 (0.5%)	1 (0.4%)	7 (2.8%)

The mean age of patients was 52.97±16.56 years; 58.3% were women, 41.7% were men (Table 2). Most patients were Saudi nationals (79.4%), whereas non-Saudi patients represented 20.6%. Regarding marital status, the data were incomplete: unknown status accounted for the largest proportion (65.4%), followed by married (19.0%) and single (14.9%). Divorced and widowed patients represented only a small fraction of cases. Regional lymph node involvement (61.3%) was the most common presentation, followed by in situ tumors (19.3%).

Interestingly, the most frequent category of tumors was paired site with unspecified laterality (39.2%), followed

by right-sided (30.5%) and left-sided tumors (23.9%), while bilateral tumors accounted for 6.6%. The majority of cases had unknown grade (74.3%), whereas grade II tumors accounted for 16.1%, grade I (4.8%), and grade III (4.8%). Regarding diagnostic methods, histological confirmation was the predominant method (94.6%), while clinical or imaging methods were used in 5.4% of cases (Table 2).

There were 197 cancer cases in Tabuk City, Saudi Arabia, in the year 2023. The distribution of malignancies was not uniform, with breast cancer constituting the most prevalent malignancy of the total reported cancers (29.4%), followed by colorectal cancer (15.7%), thyroid cancer (12.2%), lymphomas (7.1%), and lung cancer (5.1%) (Table 3).

In the current data, the highest number of cancer cases was reported in 2024 (236 cases). The distribution was like that observed in 2023, with breast cancer remaining the most prevalent malignancy (25.4%) of the total reported cases, followed by colorectal cancer (19.9%), lymphomas (13.6%), and lung cancer (5.1%). A higher prevalence of breast cancer was observed in the year 2025 (36.7%) of the total malignancies, followed by colorectal cancer (14.7%), lymphomas (8.8%), and liver cancer (5.6%).

Regarding the temporal profile of cancer in Tabuk City from 2023 to 2025, there was an increasing trend, with 197, 236, and 251 cases reported in 2023, 2024, and 2025, respectively.

Table 2 presents demographic and clinical characteristics of cancer patients in Tabuk City, Saudi Arabia, 2023–2025.

Table 2.

Demographic and clinical characteristics of cancer patients in Tabuk City, Saudi Arabia, 2023–2025.

Characteristic	2023	2024	2025	Overall
Age (years), mean ± SD	52.58 ±16.42	52.65 ±16.4	53.59 ±16.88	52.97 ±16.56
Gender				
Women	125 (63.5%)	137 (58.1%)	137 (54.2%)	399 (58.3%)
Men	72 (36.5%)	99 (41.9%)	114 (45.8%)	285 (41.7%)
Nationality				
Saudi	151 (76.6%)	194 (82.2%)	198 (78.9%)	543 (79.4%)
Non-Saudi	46 (23.4%)	42 (17.8%)	53 (21.1%)	141 (20.6%)
Marital status				
Single	32 (16.2%)	32 (13.6%)	38 (15.1%)	102 (14.9%)
Married	36 (18.3%)	43 (18.2%)	51 (20.3%)	130 (19.0%)
Divorced	0 (0.0%)	2 (0.8%)	0 (0.0%)	2 (0.3%)
Widowed	1 (0.5%)	1 (0.4%)	1 (0.4%)	3 (0.4%)
Unknown	128 (65.0%)	158 (66.9%)	161 (64.1%)	447 (65.4%)
Extent of disease				
In situ	41 (20.8%)	40 (16.9%)	51 (20.3%)	132 (19.3%)
Regional direct extension	0 (0.0%)	0 (0.0%)	1 (0.4%)	1 (0.1%)
Regional lymph nodes	126 (64.0%)	149 (63.1%)	144 (57.4%)	419 (61.3%)
Regional NOS	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Distant metastasis	28 (14.2%)	15 (6.4%)	20 (8.0%)	63 (9.2%)
Regional lymph nodes and distant metastasis	2 (1.0%)	32 (13.6%)	35 (13.9%)	69 (10.1%)
Laterality				
Right	64 (32.5%)	64 (27.1%)	80 (31.9%)	208 (30.5%)
Left	47 (23.9%)	55 (23.3%)	61 (24.3%)	163 (23.9%)
Bilateral	22 (11.2%)	17 (7.2%)	6 (2.4%)	45 (6.6%)
Paired site, laterality not stated	64 (32.5%)	100 (42.4%)	104 (41.4%)	268 (39.2%)
Grade				
I	6 (3.0%)	15 (6.3%)	12 (4.8%)	33 (4.8%)
II	34 (17.2%)	41 (17.4%)	35 (13.9%)	110 (16.1%)
III	6 (3.0%)	10 (4.2%)	17 (6.8%)	33 (4.8%)
Unknown	151 (76.6%)	170 (72.0%)	187 (74.5%)	508 (74.3%)
Method of diagnosis				
Histology	195 (99.0%)	221 (93.6%)	231 (92.0%)	647 (94.6%)
Clinical methods/imaging	2 (1.0%)	15 (6.4%)	20 (8.0%)	37 (5.4%)

Table 3.

Cancer trends in Tabuk City, Saudi Arabia, during the period from January 2023 to December 2025.

Cancer type	2023 n (%)	2024 n (%)	2025 n (%)	χ^2	P-value	Trend interpretation
Breast	58 (29.4)	60 (25.4)	92 (36.7)	3.12	0.073	No significant trend
Colorectal	31 (15.7)	47 (19.9)	37 (14.7)	0.15	0.696	No significant trend / fluctuating
Lymphomas	14 (7.1)	32 (13.6)	22 (8.8)	0.17	0.676	No significant trend
Lung	14 (7.1)	12 (5.1)	8 (3.2)	3.60	0.058	No significant trend
Liver	8 (4.1)	8 (3.4)	14 (5.6)	0.71	0.400	No significant trend
Thyroid	24 (12.2)	6 (2.5)	5 (2.0)	21.98	0.001	Significant decreasing trend
Kidney	4 (2.0)	6 (2.5)	9 (3.6)	1.02	0.312	No significant trend
Skin	4 (2.0)	6 (2.5)	9 (3.6)	1.02	0.312	No significant trend

Notes: Percentages were calculated using the total number of cancer cases diagnosed in each year as the denominator. Trends were assessed using the Cochran–Armitage test for linear trend.

Table 3 presents the overall trends in cancer types in Tabuk City, Saudi Arabia, from January 2023 to December 2025. No significant trend was observed for lung cancer from 2023 to 2025 (7.1%, 5.1%, and 3.2%, respectively; χ^2=3.60, P=0.058). A significant decreasing trend was observed in thyroid cancer over the same period (12.2%, 2.5%, and 2.0%, respectively; χ^2=21.98, P<0.001). Regarding breast cancer, the rate increased from 29.4% in 2023 to 36.7% in 2025. No significant trend was observed for colorectal cancer (15.7%, 19.9%, and 14.7%, respectively; χ^2=0.15, P=0.696), lymphomas (7.1%, 13.6%, and 8.8%; χ^2=0.17, P=0.676), liver cancer (4.1%, 3.4%, and 5.6%; χ^2=0.71, P=0.400), kidney cancer (2.0%, 2.5%, and 3.6%; χ^2=1.02, P=0.312), or skin cancer (2.0%, 2.5%, and 3.6%; χ^2=1.02, P=0.312).

Short-term cancer trends were stable across nationality, marital status, grade, and laterality. However, we found significant differences across the study years for extent of disease (P=0.010) and method of diagnosis (P=0.016) (Table 4).

Table 4.

Chi-Square Test for Selected Variables by Year (2023–2025).

Variable	χ^2-value	df	P-value	Interpretation
Gender vs Year	3.42	2	0.181	Not significant
Nationality vs Year	2.96	2	0.227	Not significant
Marital status vs Year	5.88	8	0.661	Not significant
Extent of disease vs Year	16.74	6	0.010	Significant
Laterality vs Year	9.52	6	0.146	Not significant
Tumor grade vs Year	7.88	6	0.247	Not significant
Method of diagnosis vs Year	8.21	2	0.016	Significant

Discussion

A total of 684 cases were recorded during the period (from January 2023 to December 2025) in Tabuk City, Saudi Arabia, with a gradual increase in the number of cases from 197 in 2023 to 251 in 2025. The increase in the number of registered cancer cases may reflect population growth, improved access to healthcare, expansion of screening services, enhanced diagnostic capacity, or changes in referral patterns. Our findings are in line with previous global findings and those in the Middle East, the increasing trends in cancer could be due to improvements in diagnostic methods and demographic changes.[5,6,43]

Similarly, shifting epidemiological patterns and rising cancer burden were observed in the Gulf Cooperation Council countries. The most prevalent cancers in the GCC countries were breast, colorectal, and thyroid. Importantly, there were 42,475 new cancer cases and 19,895 cancer-related deaths in the year 2020, and the projections for the year 2040 could be more than double the current rate.[32-35] Lifestyle factors, a high body mass index, and shifting demographic factors are the major determinants of the increasing cancer rate. Early detection and obesity prevention to reduce the increasing cancer rate are highly needed. The mean age of patients was 52.97±16.56 years. This finding is consistent with reports from the Saudi Cancer Registry, which show that the majority of cancer cases occur in individuals older than 45 years.[44,45] Age is a well-established risk factor for cancer due to cumulative exposure to environmental carcinogens and genetic mutations over time.[1]

Females accounted for 58.3% of all cancer cases. A plausible explanation might be the high prevalence of breast cancer among women in Saudi Arabia. Breast cancer remained the most common cancer throughout the study period. Although a higher proportion was observed in 2025, no statistically significant temporal trend was detected. Breast cancer contributes significantly to the national cancer burden.[8,9,44,46] Similarly, Cao et al.[4] found that breast cancer displaced lung cancer globally and in China; the increasing rate of breast cancer could be explained by declining fertility rates,[47] and shorter breastfeeding duration. Obesity and rapid societal and economic development are further plausible explanations.[34,48-50]

The predominance of breast cancer observed in the present study is similar to regional trends in GCC countries. Breast cancer in the GCC occurs at younger ages and advanced stages compared to Western countries.[8,9] Lifestyles, reproductive factors, and genetic susceptibility are significant,

with studies identifying non-BRCA and BRCA-related variants. Breast cancer screening programs, promoting early detection, and expanding genetic counseling are recommended.

In this study, colorectal cancer was the second most common cancer in Tabuk City, followed by lymphomas, lung, and thyroid cancer. Our findings were similar to those of Elwali et al.,[19] who conducted a study in Saudi Arabia and found that colorectal cancer is the leading cause of cancer in men and the second in women. Regarding lung cancer, our findings were similar to a study published in Almadinah Almunawara,[51] which found a rate of 13 cases/year, like the current observed annual cases ranging from 8 to 14. In this study, thyroid cancer was the third most common cancer, accounting for 2.0%–12.2% of all cancers during the study period, in line with a recently published study that found that the commonest cancer was breast, followed by colorectal, and thyroid cancer.[52] The observed decline may reflect changes in referral patterns, diagnostic practices, case ascertainment, or true disease occurrence. Further studies are required to clarify this finding.

The proportion of lung cancer varied from 3.2% to 7.1% of all cancers and was higher than in previous studies.[20,21,51,53] Saudi nationals constitute the majority of cases (79.5%), while non-Saudi residents account for approximately one-fifth of cases. The current findings were like previous studies published in Saudi Arabia,[25,43,50] which reported a higher prevalence of cancer in Saudi nationals.

In the current study, regional lymph node involvement was the most common extent of disease, accounting for 61.3%. Our findings were in line with Leong et al.[54] This pattern may reflect delayed diagnosis, referral pathways, differences in screening practices, or variations in case mix.

In this study, in 39.2% of cases, the laterality was not specified,, which may reflect incomplete documentation or recording of laterality in the cancer registry. Laterality reporting is vital for clinical decision-making and epidemiological monitoring. The current data showed that 94.6% of cancers were diagnosed by histopathology; these findings were consistent with international oncology guidelines, which consider histopathology the gold standard for cancer diagnosis.

Study Limitations

The results of this study should be viewed in the presence of the following limitations: the retrospective nature of the study and the missing or unknown data observed in a significant proportion (the histological grade is unknown in 74.3% of cases, and marital status was unknown in 65.4%) may have affected the accuracy of certain estimates. The study was retrospective and had a single-center design. Therefore, generalization to the whole Tabuk Region cannot be ensured. Improving the reporting methods for Registry data is highly recommended, particularly for histological grading, given its importance for prognosis estimation and treatment planning.

Conclusion

The most common cancer in Tabuk, Saudi Arabia, was breast cancer, followed by colorectal and thyroid cancer. Most patients were middle-aged or older adults, and females accounted for a greater proportion of cases. Breast cancer remained the most common malignancy throughout the study period, although no statistically significant temporal trend was observed. No statistically significant temporal trends were observed for the major cancer types except thyroid cancer, which demonstrated a significant decreasing trend; regional lymph node involvement was common at the time of diagnosis. The diagnosis was made by histopathology in the majority of cases. Future studies focusing on specific cancer types and associated risk factors are highly recommended in the Tabuk region.

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