

Pattern, distribution and trends of cancer among patients registered at Hadramout National oncology center(HNOC) during 2005-2015

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Abstract:

Background: Cancer is a major public health problem in developing countries and worldwide. Cancer registry in Yemen stills a big challenge in absence of national cancer surveillance. In Yemen, there are three cancer registries: Sanaa cancer registry, Aden cancer registry and Hadramout cancer registry.

Objective: To describe the spectrum of the pattern, distribution and trends of cancer among patients attend at HNOC during 2005 – 2015.

Methodology: Retrospective study was carried on data that had been collected through medical records during the study period from 1st January 2005 to 31st December 2015.

Results: Cancers were reported frequently in age group of 41-60 years, and both males and females have nearly an equal representation with ratio of 1:1. The most cancer patients registered were from Hadramout governorate, followed by patients from Shabwa and Al-Mahrah governorates. Regarding the trend of cancer registered in HNOC over period 2005-2015, we observed that the cases decreasing from 4.8% in year 2005 to 4.7% in year 2006 with slight increasing to 5.1% in year 2007 and increase in year 2008 to 8.1%. In year 2009, there was mild decrease to 6.0% with repeated increasing in 2010 to 7.2%. The major increasing occurred in 2011 to 17.4%, then decreased to 13.4% in 2012 and still decreased to 8.8% in 2015.

Conclusion: The most common affected age group with cancer was middle age, and most patients were from Hadramout governorate, with major increase in number of cancer cases reported in 2011.

Keywords: Cancer, Hadramout, Hadramout National oncology center.

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نمط وتوزيع واتجاهات السرطان عند المرضى المسجلين في مركز الأورام الوطني - حضرموت خلال الفترة 2005-2015 م

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ملخص البحث

الخلفية: يعد السرطان مشكلة صحية عامة رئيسية في البلدان النامية والعالم. ويشهد سجل السرطان في اليمن تحدياً كبيراً في غياب الرقابة الوطنية على السرطان في اليمن، وهناك ثلاثة مراكز لتسجيل السرطان: سجل السرطان في صنعاء، سجل السرطان في عدن وسجل السرطان في حضرموت.

الهدف: وصف طيف نمط وتوزيع واتجاهات السرطان عند المرضى الذين يحضرون إلى مركز الأورام الوطني - حضرموت خلال 2005 - 2015م.

الطريقة: أجريت الدراسة بأثر رجعي على البيانات التي تم جمعها من خلال السجلات الطبية خلال فترة الدراسة من 1 يناير 2005 إلى 31 ديسمبر 2015م.

النتائج: تم تسجيل كثرة الإصابة بالسرطان في الفئة العمرية 41-60 سنة مع تساوي الذكور والإناث بنسبة 1:1. كان معظم مرضى السرطان المسجلين من محافظة حضرموت تتبعها محافظة شبوة ثم المهرة. فيما يتعلق باتجاه السرطان المسجل خلال الفترة 2005-2015، لاحظنا أن الحالات انخفضت من 4.8% في عام 2005 إلى 4.7% في عام 2006 مع زيادة طفيفة إلى 5.1% في عام 2007 وزيادة في عام 2008 إلى 8.1%. في عام 2009 كان هناك انخفاض طفيف إلى 6.0% مع زيادة مطردة في عام 2010 إلى 7.2%. وقد حدثت الزيادة الكبرى في عام 2011 إلى 17.4%، ثم انخفضت إلى 13.4% في عام 2012 واستمرت في انخفاض إلى 8.8% عام 2015.

الخلاصة: أكثر الفئات العمرية المصابة بالسرطان شيوعاً هي منتصف العمر، وأكثر المصابين هم من محافظة حضرموت، وقد شهد عام 2011 أكبر زيادة في عدد حالات السرطان.

الكلمات المفتاحية: السرطان، حضرموت، المركز الوطني للأورام بحضرموت.

Introduction:

Cancer is a global disease. It is estimated that four million patients will die from it this year. In developed countries, the annual death rate is around 150 per 100,000 population. In other countries, cancer mortality is perhaps half this level. In many areas there is great expenditure on the diagnosis, treatment, rehabilitation and terminal care of these patients. Cancer brings about personal catastrophes that are not reflected in economic cost. This type of illness is responsible for a wide variety of psychological suffering, social distress, and financial hardship for patients and their families. Despite recent improvements in cancer therapy with subsequent high cure rates for many tumors, a sizable portion of patients still suffer dreadful effects of the disease, hence the importance of studying its pattern and investigating any potential causes in the hope of achieving earlier detection and possible disease prevention. Worldwide, there are enormous geographic differences in the incidence and anatomic distribution of cancer. Overall survival of these patients also varies, not only due to differences in the availability of medical care but also in the pattern of cancer seen, as some tumors are less amenable to therapy than others. It could be argued that the lower rate of certain tumors in some countries is due to underreporting. In others, there has been a definite increase in cancer incidence during the last several decades, especially with certain tumors such as lung cancer. This is possibly related to the recent increase in smoking habits among the general population in these areas. Several publications describe the pattern of cancer in the Kingdom. Initial reports have shown a cancer pattern distinctly different from the Western population, with malignant lymphoma as the commonest malignancy (1). Some evidence has suggested an increase in the incidence of cancer among the Saudi population during the last decade with a slowly changing pattern, especially with certain tumors, such as lung cancer, which has recently become common among males (2). Such changing trends have been noted previously in other Middle East countries, such as Kuwait and Iraq (3).

Cancer registry in Yemen stills a big challenge in absence of national cancer surveillance. There are three cancer registries in Yemen: cancer registry, Aden cancer registry and Hadramout cancer registry. So, the aim of this study is to describe the spectrum of the pattern, distribution and trends of cancer among patients attend at Hadramout national oncology cen-

ter (HNOC) during the period of 2005 – 2015.

Patients and Methods:

The study was conducted at Hadramout National Oncology Center which is located at Al-Mukalla city, Hadramout Governorate. A retrospective study was carried out on data that had been obtained from medical records during the study period from 1st January 2005 to 31st December 2015. The age, gender, and type of cancer of all included cancer patients who reported at HNOC, as well as age, gender and geographic distribution of their cancers, all are reported and analyzed by SPSS windows version 20 software.

Results:

The total of cancer patients was 4626 patients who were registered at cancer registry department of HNOC. The analysis showed that both males and females have a near equal representation with female to male ratio 1:1 (table 1).

Table 1: Gender description of the cancer cases:

Gender	No	%
Male	2124	45.9%
Female	2502	54.1%
Male : female ratio 1:1		

Although cancer was registered in all age groups, including infants and children, the most affected age group was between 41-60 years (table 2).

Table 2: Age distribution of the reported cancer cases 2005-2015 in Hadramout

Age group	No	%
0 - 9	254	5.4
10 - 18	248	5.3
19 - 40	1099	23.5
41 - 60	1689	36.2
More than 60 years	1336	28.2

The most common cancer in male patient is Blood, Spleen 12.6% , followed by lymph node 10.5% then colorectal 9.1% , 6.3% was liver , and 5.6% bladder (table 3).

Table 3: The most common pattern of cancer among males in Hadramout

Male		
Type of Cancer	Percentage	Frequency
BLOOD,SPLEEN	12.6	262
Lymph node	10.5	218
Colorectal	9.1	189
Liver	6.3	132
Bladder	5.6	116
Bronchus ,lung	5.3	111
Stomach	5.2	109
Pharynx	4.4	91
Prostate	4.1	86
Brain	3.8	79
Skin	2.7	57
Pancreas	2.7	57

The most common cancer in female patient was breast 28.2% followed by blood, spleen 8.6% then colorectal 5.8% and ovary was 5.5%. 5.4% was lymph node (table 4).

Table 4: The most common pattern of cancer among males in Hadramout

Female		
Type of Cancer	Percentage	Frequency
Breast	28.2	729
Blood, spleen	8.6	222
Colorectal	5.8	152
Ovary	5.5	143
Lymph node	5.4	140
Cervix, uteri	4.4	114
Brain	3.5	91
Liver	3.2	84
Stomach	3	78
Thyroid	2.7	70
Skin	1.8	47
Pancreas	1.8	47
Uterus	1.8	46

Table 5 shows that 48.4% of breast cancer occurred in age 41-60, while 27% of blood, spleen cancer in age group 19-40years, and 29.4% of brain cancer in 41-60years, colorectal (42.9%) also between 41-60 years. 30.2% of lymph node cancer found in 19-40 age group. Above 61 years of age, liver cancer have 48.1%, and stomach commonly occurred in ≥ 61 which have 42.8%, and also pharynx (42.8%), but bladder (55.6%) found between 19-40 years, and bronchus and lung 42.1% in 41-60 years (table 5).

Table 5: Distribution of commonest cancer types according to age group

	0-9		10-18		19-40		41-60		≥ 61	
	N	%	N	%	N	%	N	%	N	%
Breast	0.0	0.0	0.0	0.0	236	31.6	361	48.4	149	20.0
Blood	75	15.4	68	14.0	131	27	113	23.0	99	20.4
Brain	33	19.4	20	11.8	44	25.9	50	29.4	23	13.5
Colorectal	0	0	0	0	43	19.0	90	42.9	14	36.1
Lymph node	30	8.4	49	13.7	108	30.2	105	29.3	66	18.4
Liver	5	2.3	4	1.9	28	13.0	75	34.7	104	48.1
Stomach	2	1.1	5	2.7	39	20.9	61	32.6	80	42.8
Pharynx	0	0	11	8.7	42	33.1	53	41.7	20	42.8
Bladder	0	0	0	0	115	55.6	67	42.0	77	48.4
Bronchus, lung	0	0	1	0.7	15	10.6	67	42.1	58	41.1

Most of patients are coming from Hadramout governorate (78%), followed by Shabwah governorate (11%) then other governorates (Sanaa, Aden ,Taiz)(7.1%), while Al-Mahra governorate show the least number of case (2.8%) (Table 6).

Table 6: Distribution of commonest cancer types according to area

	Hadramout		Shabwah		Al-Mahra		others	
	N	%	N	%	N	%	N	%
Breast	618	82.8	57	7.6	17	2.3	54	7.3
Blood	387	79.6	60	12.3	10	2.1	29	5.9
Brain	137	80.6	21	12.4	2	1.2	10	5.9
Colorectal	249	76.0	44	13	12	3.3	22	6.7
Lymph node	290	81.0	49	13.7	4	1.1	15	4.2
Liver	166	76.9	33	15.3	10	4.6	7	3.3
Stomach	150	80.2	19	10.2	11	5.9	7	4.7
Pharynx	107	78.2	23	16.7	4	2.1	3	2.0
Bladder	134	82.2	15	9.4	5	3.1	5	3.1
Brounchus, lung	116	84.3	13	9.2	1	0.7	3	2.0

Regarding the trend of cancer registered in HNOC over period 2005-2015, we observed that it decreased from 4.8% in year 2005 to 4.7% in year 2006 with slight increase to 5.1% in year 2007 and more increase in year 2008 to 8.1%. In year 2009 there is mild decrease to 6.0% with sustained increase in 2010 to 7.2%. The major increasing occurred in 2011 to 17.4%, then decreased to 13.4% in 2012 and continue decreased to 8.8% in 2015 (table 7).

Table 7: Percent distribution and trend of cancer registered in HNOC over period 2005-2015

year	Number of patients	Percentage
2005	224	4.8
2006	218	4.7
2007	238	5.1
2008	377	8.1
2009	279	6.0
2010	333	7.2
2011	804	17.4
2012	620	13.4
2013	589	12.7
2014	538	11.6
2015	406	8.8
Total	4626	100.0

Discussion:

In many countries, cancer ranks the second or third most common cause of death following cardiovascular diseases. With significant improvement in treatment and prevention of cardiovascular diseases, the cancer will soon become the number one killer in many parts of the world. (4). As elderly people are most susceptible to cancer and population ageing continues in many countries, cancer will remain a major public health problem around the globe (5).

The top ten types of cancers among males were colon, Non-Hodgkin lymphoma (NHL), Leukaemia, Stomach, bladder, Oesophagus, skin, lung and trachea, liver, and Hodgkin diseases (HD). However, the incidence rates among male population were higher than in females except for the breast and the other specific related reproductive cancer. cancers among women include Breast, NHL, Leukaemia, skin, ovary, cervix uteri, Oesophagus, thyroid, stomach, and HD. (6)

In (2007) cancer Incidence in Qatar by age group among male population during the year 2006 is 40-60 years. In men, incidence rates per 100,000 population revealed that lung and lymph node cancers were the most frequently recorded malignancies, followed by bone marrow, connective tissue. In men above 65 years of age, the most common primary sites were prostate, lung, stomach, liver, followed by skin. In men, the incidence rate of all cancer sites per 100,000 population started to increase sharply from the age 45 years; 78.1 in the age group (45-54), followed by 256 in the age group (55-64) and 876.4 in the age group above 65 years. (7)

Whereas Among women, breast cancer 30.1 % had become the most common form of cancer, followed by genital organs 9 %, lymph node 6.8 %, rectum 6.1% and thyroid glands 5.7%. Cancers of the female breast began to occur at an early age (25-34) increased sharply with increasing age until 65 years. Incidence of breast cancer cases declined drastically in women above 65 years (105.4/100,000), whereas the incidence rate of other cancer sites peaked in the age group above 65 years old. (7)

During 2006 in Europe there were an estimated 3,191,600 cancer cases diagnosed and 1,703,000 deaths from cancer. Cancer remains an important public health problem in Europe and the ageing of the European population will cause these numbers to continue to increase even if age specific rates remain constant. (8)

It is documented that although the total population will remain fairly constant, compared with the year 2000, by 2015 there will be a 22% increase in the population aged >65 and a 50% increase in those above 80 years of age. Given the strong association between cancer risk and age, this will lead to a major increase in the cancer burden (9,10)

Recent reports from countries in the region have shown a similar trend for increases in the reporting of cancer cases over a 10 to 15-year period (11,12,13).

Population growth and aging, combined with reduction in mortality from infectious diseases could explain the reasons for the worldwide increased cancer incidence (14). It is worthwhile adding that changes in eating habits, tobacco use, and physical inactivity, or other factors that are already established in high income countries, such environmental or socioeconomic development, were not adequately assessed in Yemen, and accordingly could not be of great contribution to this study.

Studies from some registries in Middle Eastern countries, such as Jordan, Saudi Arabia and Egypt have patterns of cancer incidence that are different to our findings, except for breast cancer in females, which is the most common in many countries (15,16,17,18)

In one study applied in Aden (1997-2011) the overall annual incidence rate was 21.6 per 100,000 populations. In males the average annual incidence was 20.0 per 100,000 populations and in female 22.9 per 100,000 populations. Female to male ratio was 1.1: 0.9 with total of 52.9% female and 47.1% male. (15)

Conclusion:

In our study, the most common affected age group with cancer was middle age (41-60 years), and most patients were from Hadramout governorate, and the trend of cancer shows variability during the study period, but the major increase in number of cancer cases was reported in year 2011.

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