

Prevalence of Cancer in CENAR Quetta

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Abstract

Aims and Objectives: A retrospective study of all cancer registered cases at the Center for Nuclear Medicine and Radiotherapy (CENAR) Quetta From 1st Jan, 1998 to 31st December 2009(12 Years) was carried out. CENAR Quetta is the only cancer management center in Balochistan. The aim of this analysis was to highlight the prevalence of Cancer in Balochistan. **Study Design:** A retrospective study. **Place and duration of Study:** The study was conducted at CENAR Quetta. **Results:** During the study period, 12022 cancer patients were registered at CENAR and BMCH Quetta. Out of these 10924

files of patients (91.19%) were analyzed. The data were analyzed from various angles of prevalence e.g. total number of registered cancer patients, Sex, Age, Histopathology, Demographic profile etc. **Conclusion:** As cancer management is a global challenging health problem including Pakistan, so the first step for all health program worldwide is to highlight the prevalence, incidence and etiological factors of the disease in the locality, for step wise going towards management and control. **Key Words:** Retrospective study, Cancer prevalence.

INTRODUCTION

Cancer is a global challenging health problem. This is a wide group of diseases concerned with proliferation of cells of the body. In the human body, loss and renewal of cells is a constant process. In an adult person consisting of about three trillion cells, an estimated 350 billion of them divide everyday. Cancer is defined as uncontrolled growth of body cells on the expense of body. Cancer is fatal disease; it kills approximately 430,000 individuals in the U.S.A annually¹. The number of newly diagnosed cancer cases in the year 2007 was projected to be more than 12 million worldwide, 5.4 million of which will occur in economically developed countries and 6.7 million in economically developing countries. The corresponding number of cancer deaths is expected to be 7.6 million globally: 2.9 million in economically developed and 4.7 million in economically developing countries². Lung, colorectal, breast and prostate cancers are four most common causes of cancer deaths in U.S.A It is about half of all cancer deaths in U.S.A³. Cancer is major cause of mortality in European Union (E.U), with an estimated 1.9 million new cases diagnosed in 2000⁴. Approximately one in four deaths

in E.U. are from cancer and there are more than one million deaths from cancer each year⁴. Breast Cancer is the leading cause of new cancer diagnosis in U.S.A women⁵. In U.S.A during Jan 2000, approximately 9.6 million cancer diagnosed people were alive. Nearly 30% of U.S population is under the age of 20⁶⁻⁷. In this age group approximately 12,400 are diagnosed with cancer each year. About one in 300 boys and one in 333 girls will develop cancer before the age of 20⁷. Worldwide an estimated 405,000 new cases of oral cancer (excluding Nasopharynx) are diagnosed each year with 2/3rd of these cases occur in developing countries⁸. Each year an estimated of 66,650 new oral cancer cases are diagnosed in E.U⁹. The aging population is important as cancer predominately affects older people. There will be an enormous demographic shift towards the elderly in the countries of E.U¹⁰. The management of cancer is a team work with multi disciplinary approach as surgery, radiation therapy, chemotherapy, hormones and anti- hormones therapy, immunotherapy, hyperthermia, target cell therapy etc.

The prognosis of the disease depend upon

1. Organ of origin of cancer.

2. Type of cancer.
3. Grade of cancer.
4. Stage of cancer.
5. Performance status and age of patient.
6. Availability of diagnostic and treatment facilities.

MATERIAL AND METHODS

The record review was carried out of last 12 years in the Center for Nuclear medicine and Radiotherapy (CENAR) QUETTA .During this period, files of all registered patients were reviewed and data collected. Statistical percentages and mathematical ratios were used to evaluate the results.

Table-1

**Cancer In CENAR Quetta Balochistan (12 Years)
From January 1998 To December 2009
Gross analysis of Total No of Cancer Patients
Total No of Patients 12022**

Total No of Analyzed Patients	10861	(90.34 %)
Total No of Male Patients	5619	(51.74 %)
Total No of Female Patients	4644	(42.76 %)
Total No of Children patients	598	(5.51 %)

Table-(a)

Balochistani Patients Total: 7650(70.44%)

Male	Female	Children
3810	3403	437
(49.80 %)	(44.48 %)	(5.71 %)

Table-(b)

Afghani Patients Total 3211 (29.56 %)

Male	Female	Children
1809	1241	161
(56.34 %)	(38.65 %)	(5.01 %)

Table-2

CENAR QUETTA BALOCHISTAN

Tumor analysis in sequence with percentage

Total no of cancer patients male + female + children 10861

From Jan 1998 to Dec 2009 (12 years)

S. No	Tumor Type	No of Patients	% Age
1	GIT Tumors	2334	21.49
2	Ca Skin	1290	11.88
3	Head and Neck Tumors	1157	10.65
4	Ca Breast	965	8.89
5	Malignant Lymphomas	906	8.34
6	Genitourinary Tract Tumors	864	7.96

7	Hematological Malignancies	676	6.22
8	Gynecological Tumors	591	5.44
9	Sarcomas	550	5.06
10	Brain Tumors	371	3.42
11	Ca Thyroid	237	2.18
12	Ca Lung	235	2.16
13	Solid Tumors of Children	201	1.85
14	Tumors of U.K primary	103	0.95
15	Tumors of Eye	88	0.81
16	Miscellaneous Tumors	293	2.70

Total No of Patients: 10861

Total No of Male Patients: 5619 (51.74 %)

Total No of Female Patients: 4644 (42.76 %)

Total No of Children Patients: 598 (5.51 %)

Table -3

CENAR Quetta Balochistan

Tumor Analysis: Male and Female Patients in sequence and percentage.

Total No of Male Patients 5619

Total No of Female Patients 4644

S. #	Tumor Type	No of Pts	% age	S.#	Tumor Type	No of Pts	% age
1	GIT Tumors	1378	24.52	1	GIT Tumors	947	20.39
2	Ca Skin	764	13.60	2	Ca Breast	925	19.92
3	G.U.T Tumors	746	13.28	3	Gynae Tumor	588	12.66
4	Head & Neck Tumor	698	12.42	4	Ca Skin	522	11.24
5	Malignant Lymphomas	559	9.95	5	Head & Neck Tumors	438	9.43
6	Hematological Malignancies	377	6.71	6	Malignant Lymphomas	229	4.93
7	Sarcomas	325	5.78	7	Hematological Malignancies	204	4.39
8	Brain Tumors	203	3.61	8	Sarcomas	172	3.70
9	Ca Lung	177	3.15	9	Ca. Thyroid	125	2.69
10	Ca Thyroid	110	1.96	10	Brain Tumor	123	2.65
11	Tumors of U.K.O	54	0.96	11	G.U.T Tumors	101	2.17
12	Eye Tumors	44	0.78	12	Ca Lung	58	1.25
13	Ca Breast	40	0.71	13	Tumors of U.K.O	46	0.99
14	Miscellaneous	144	2.56	14	Eye Tumors	41	0.88
15				15	Miscellaneous	125	2.69

From January 1998 to December 2009 (12 years)

Male Patients 5619 (54.75 %)

Female Patients 4644 (45.25 %)

Total 10263

Table-4

CENAR Quetta Balochistan

Tumor Analysis on the Base of Organ of Origin in Male, Female and Children Patients

From Jan1998 to Dec2009 (12 Years)

Tumor Type	Total	Male	Total	Total	Total No
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	Pts 5025	Female Pts 4108	Children Pts 556	of All Pts
GIT	1378	947	09	2334
Ca Esophagus	633	540	-	1173
Stomach	188	76	-	264
Small Intestine	28	26	-	54
Ca Colo Rectum	208	101	06	315
CA Anal Canal	31	19	-	50
Ca Liver	213	88	03	304
Ca GB & Biliary Tract	40	61	-	101
Ca Pancreas	32	29	-	61
Others	05	07	-	12
Ca Skin	764	522	04	1290
BCC	322	182	02	506
SCC	345	281	01	627
Malignant Melanoma	64	35	01	100
Others	33	24	00	57
Head & Neck Tumors	698	438	21	1157
Oral Cavity	270	206	03	479
Ca Nasopharynx	134	79	09	222
Ca Hypopharynx	64	47	-	111
Ca Maxillary Antrum	51	38	04	93
Ca Larynx	99	40	01	140
Others	80	28	04	112
Ca Breast	40	925	-	965
Genitourinary Tract Tumors	746	101	17	864
Ca Prostate	203	-	-	203
Ca Kidney	100	45	08	153
Ca Urinary Bladder	291	56	-	347
Ca Urethra & Penis	10	-	-	10
Testicular	142	-	09	151
Malignant Lymphomas	559	229	118	906
Hodgkin's Lymphoma	146	75	46	267
Non Hodgkin's Lymphoma	390	148	64	602
Others	23	06	08	37
Sarcomas	325	172	53	550
Soft Tissue Sarcoma	235	130	38	372
Bone Sarcomas	90	42	15	137
Gynae Tumors	-	588	03	591
Cervix	-	180	-	180
Vag & Vulva	-	30	-	30
Uterus	-	84	-	84
G.T.D	-	16	-	16
Ovary	-	278	03	281
Hematological	377	204	95	676
CML	98	83	05	186
AML	63	37	25	125
CLL	42	20	-	62
ALL	101	47	58	206

Plasma Cell	50	10	01	61
Others	23	07	06	36
Brain	203	123	45	371
Tumors of U.K.O	54	46	03	103
Thyroid	110	125	02	237
Ca Lung	177	58	-	235
Eye Tumors	44	41	03	88
Miscellaneous	144	125	24	293
Solid Tumors of Children	-	-	201	201
Wilm' tumor	-	-	37	37
Neuroblastoma	-	-	19	19
Retinoblastoma	-	-	45	45
Rhabdomyosarc oma	-	-	39	39
Ewings Sarcoma	-	-	40	40
Germ Cell	-	-	21	21
	5619	4644	598	10861

Total No of Patients from 1998 to 2009 (12 years)
12202

Total No of Patients Analyzed 10861

No of Male Patients 5619 (51.74%)

No of Female Patients 4644 (42.76%)

No of Children Patients 598 (5.51%)

Table-5
CENAR Quetta Balochistan
1998- 2009 (12 years)

Tumor Type	Male Balochistani Patients	Female Balochistani Patients	Male Afghani Patients	Female Afghani Patients	Children Balochistani Patients	Children Afghani Patients	Total
GIT	870	605	50	342	08	01	2334
Ca Esophagus	326	288	30	252	-	-	1173
Stomach	142	63	46	13	-	-	264
Small Intestine	20	22	08	04	-	-	54
Ca Colo Rectum	155	71	53	30	05	01	315
CA Anal Canal	22	16	09	03	-	-	50
Ca Liver	144	73	69	15	03	-	304
Ca GB & Biliary Tract	35	44	05	17	-	-	101
Ca Pancreas	24	21	08	0	-	-	61
Others	02	07	03	-	-	-	12
Ca Skin	547	377	217	145	04	-	1290
BCC	191	127	131	55	02	-	506
SCC	300	204	45	77	01	-	627
Malignant Melanoma	36	26	28	09	01	-	100
Others	20	20	13	04	-	-	57
Head & Neck Tumors	487	321	21	117	13	08	1157
Oral Cavity	202	167	68	39	02	01	479

Ca Nasopharynx	80	52	54	27	04	05	222
Ca Hypopharynx	43	29	21	18	-	-	111
Ca Maxillary Antrum	34	23	17	15	02	02	93
Ca Larynx	77	28	22	12	01	-	140
Others	51	22	29	06	04	-	112
Ca Breast	26	716	14	209	-	-	965
Genitourinary Tract Tumors	556	86	190	15	15	02	864
Ca Prostate	159	-	44	-	-	-	203
Ca Kidney	78	36	22	09	06	02	153
Ca Urinary Bladder	215	50	76	06	-	-	347
Ca Urethra & Penis	08	-	02	-	-	-	10
Testicular	96	-	46	-	9	-	151
Malignant Lymphoma	341	168	218	61	75	43	906
Hodgkin's Lymphoma	83	43	63	32	28	18	267
Non Hodgkin's Lymphoma	241	121	149	27	41	23	602
Others	17	04	06	02	06	02	37
Sarcomas	201	127	124	45	36	17	550
Soft Tissue Sarcoma	145	98	98	32	25	13	403
Bone Sarcomas	56	29	34	13	11	04	147
Gynae Tumors	-	476	-	112	03	-	591
Cervix	-	149	-	31	-	-	180
Vag & Vulva	-	23	-	07	-	-	30
Uterus	-	67	-	17	-	-	84
G.T.D	-	11	-	05	-	-	16
Ovary	-	226	-	52	03	-	281
Hematological	260	148	117	56	82	13	676
CML	62	65	36	18	04	01	186
AML	41	24	22	13	22	03	125
CLL	26	12	16	08	-	-	62
ALL	71	35	30	12	49	09	206
Plasma Cell	40	06	10	04	01	-	61
Others	20	06	03	01	06	-	36
Brain Tumors of U.K.O	138	80	65	43	29	16	371
Thyroid	34	28	20	18	02	01	103
Ca Lung	79	100	31	25	02	-	237
Ca Lung	144	45	33	13	-	-	235
Eye Tumors	33	32	11	09	03	-	88
Miscellaneous	94	94	50	31	18	06	293
Solid Tumors of Children	-	-	-	-	147	54	201
Wilm's tumor	-	-	-	-	27	10	37
Neuroblastoma	-	-	-	-	17	02	19
Retinoblastoma	-	-	-	-	29	16	45
Rhabdomyosarcoma	-	-	-	-	26	13	39
Ewings Sarcoma	-	-	-	-	30	10	40
Germ Cell	-	-	-	-	18	03	21
	3810	3403	1809	1241	437	161	10861

Total No of Patients 1998 – 2009 12202

Total No of Patients Analyzed 1998 – 2009 10861

DISCUSSION

Cancer is one of the major global challenging health problems. The management of cancer is a team work with multi-disciplinary approach, but this approach is

stepwise. The first step to the management of cancer is to know about the statistical base of various factors like prevalence, incidence, spread, mortality, etiological and environmental factors, behavior of the disease with cellular, genetic and molecular changes etc. These factors reflect various angles of disease to provide guideline to clinical team for the management of cancer. In many economically developing countries major cancer risk factors such as cigarette smoking, obesity and physical inactivity continue to be more common among the educated higher socio economic group than poor^{11,12,13}. Other example is migrant studies have helped to differentiate whether variations in cancer rates across countries and among racial and ethnic groups one due to environmental or inherited genetic factors i.e among 1st generation Japanese men who migrated to California, the risk of dying from stomach or liver cancer was substantially lower than in Japan, although still higher than that of California whites. The risk among Japanese migrants and whites become more similar by the 2nd (Second) generation. In contrast, the risk of death from colon cancer increased rapidly after migration from Japan to California, approximately doubling in the first generation Japanese who move to California and approaching doubling the rates of California white's men by the 2nd generation^{14,15}. So the statistical study from various angles of the health problem is the 1st and essential step. This article "Prevalence of Cancer in Balochistan" is probably the first study available concerned to the subject in this locality. Balochistan is the widest province of Pakistan with poor, less-educated and scattered population. Due to poverty, illiteracy and lack of awareness about the cancer, the tendency to register the cases for management is very low, especially in case of female and child population. The condition of adjacent Afghanistan is weaker than Balochistan. So the actual prevalence of cancer is much more than mentioned in the article. CENAR Quetta is the only cancer management facilitated centre in Balochistan. It drains cancer patients from whole Balochistan and adjacent Afghanistan. A retrospective study of the last 12 years files was carried out in this article and arranged in various tables from various dimensions of the population. So it highlights the possible available data in this locality. It seems to be a mile stone in this direction for research workers in future.

CONCLUSION

Management of cancer is one of the global challenging health problem including Pakistan. In developing countries like Pakistan this problem is more severe and painful due to poverty, illiteracy, lack of awareness, especially in backward areas. As cancer management is a complicated, multi dimensional health problem, so in developing countries its management is in primary stages. In our clinical setting data collection concerned to cancer management is poorly established due to many reasons. This article is a step forward to this direction for research workers in future. Further research studies along with improvement of health care delivery system and public education are needed to deal with this complicated health problem.

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