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# National Scenario of Lung Cancer Incidence in Nepal - 2009

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**ABSTRACT:** Cancer is a disease caused by an uncontrolled division of abnormal cells in a part of the body, which is a major public health problem in the world. Lung carcinoma, is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung. This study aims to determine national scenario of lung cancer for 2009. This was a descriptive analysis of secondary data collected by hospital based cancer registry from 1st January to last December 2009. Most of the cases 79.1 % were Hindu, most prevalent age group 21.0% was 60-64 yrs. First choice of treatment 49.8% was chemotherapy followed by 17.7% radiotherapy & chemotherapy. The incidence of lung cancer was increasing day by day. A well organized awareness activity was recommended to control and prevent the lung cancer burden in Nepal.

**KEYWORDS:** Lung cancer, Incidence, National, Nepal

## I. INTRODUCTION

Lung cancer is a malignant lung tumor characterized by uncontrolled cell growth in tissue of the lung. Cancer is the second leading cause of death globally, accounting for an estimated 9.6 million deaths, or one in six deaths, in 2018. Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women (GLOBO CAN 2018). Globally, about 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries.

Asia accounts for 60% of the world population and half the global burden of cancer. The incidence of cancer cases is estimated to increase from 6.1 million in 2008 to 10.6 million in 2030. According to WHO, India has a cancer mortality rate of 79 per 100,000 deaths and accounts for over 6 percent of total deaths. These numbers are very close to those of high-income countries. Various studies showed that lung cancer is increasing day by day and there are different yearly reports about the incidence of lung cancer. Therefore the aim of this study is to hit upon the national scenario of hospital based lung cancer and relevant details.

## II. MATERIALS AND METHODS

This was a descriptive study with secondary data of new cancer that are recorded and collected in different data source institution since 1<sup>st</sup> January to 31<sup>th</sup> December 2009. The data were entry, edit, and coded based on ICD-O3<sup>rd</sup> and ICD -10, published by IARC/WHO. Whereas, analysis was carried out by using SPSS 19.0.



III. RESULTS

Table 1

Cancer cases by reporting institute-2009			
S.N.	Reporting institute	#	%
1	BP Koirala Memorial Cancer Hospital, Bharaptur, Chitwan	2732	44.1
2	Bhakatapur Cancr Hospital, Bhaktapur	1289	20.8
3	Bir Hospital, Kathmandu	1228	19.8
4	BPKoirala Institute of Health Science, Dharan	660	10.6
5	TU Teaching Hospital, Kathmandu	188	3
6	Manipal Teaching Hospital, Pokhara	79	1.3
7	Kanti Children Hospital, Kathmandu	23	0.4
	Total	6199	100

Table 2

Total cancer cases by site and sex-2009								
S.N.	ICD-10	Topography	Male		Female		Total	
			#	%	#	%	#	%
1	C00	Lip	12	0.4	5	0.2	17	0.3
2	C01	Base of tongue	6	0.2	0	0.0	6	0.1
3	C02	Other & unspecified parts of tongue	72	2.4	33	1.0	105	1.7
4	C03	Gum	9	0.3	1	0.0	10	0.2
5	C04	Floor of mouth	7	0.2	4	0.1	11	0.2
6	C05	Palate	13	0.4	6	0.2	19	0.3
7	C06	Other & unspecified parts of mouth	30	1.0	13	0.4	43	0.7
8	C07	Parotid gland	31	1.0	15	0.5	46	0.7
9	C08	Other & unspecified major salivary gland	18	0.6	8	0.2	26	0.4
10	C09	Tonsil	16	0.5	4	0.1	20	0.3
11	C10	Oropharynx	12	0.4	6	0.2	18	0.3
12	C11	Nasopharynx	56	1.9	17	0.5	73	1.2
13	C12	Pyriiform sinus	53	1.8	8	0.2	61	1.0
14	C13	Hypopharynx	10	0.3	3	0.1	13	0.2
15	C14	Other & ill defined sites in lip oral cavity & mouth	38	1.3	16	0.5	54	0.9
16	C15	Esophagus	88	3.0	41	1.3	129	2.1
17	C16	Stomach	231	7.8	117	3.6	348	5.6
18	C17	Small intestine	9	0.3	7	0.2	16	0.3
19	C18	Colon	74	2.5	76	2.4	150	2.4
20	C19	Rectosegmoid	3	0.1	2	0.1	5	0.1
21	C20	Rectum	60	2.0	66	2.0	126	2.0
22	C21	Anus & anal canal	10	0.3	9	0.3	19	0.3

23	C22	Liver	42	1.4	29	0.9	71	1.1
24	C23	Gall bladder	105	3.5	156	4.8	261	4.2
25	C24	Other & unspecified biliary tract	14	0.5	11	0.3	25	0.4
26	C25	Pancreas	25	0.8	19	0.6	44	0.7
27	C26	Ill defined digestive organs	3	0.1	4	0.1	7	0.1
28	C30	Nasal cavity & middle ear	20	0.7	20	0.6	40	0.6
29	C31	Maxillary sinus	22	0.7	9	0.3	31	0.5
30	C32	Larynx	167	5.6	51	1.6	218	3.5
31	C34	Bronchus & lung	595	20.0	340	10.5	935	15.1
32	C37	Thymus	1	0.0	3	0.1	4	0.1
33	C38	Mediastinum & Pleura	4	0.1	5	0.2	9	0.1
34	C40	Bones joints & articular cartilage	22	0.7	12	0.4	34	0.5
35	C41	Other & unspecified bones joints & articular cartilage	72	2.4	57	1.8	129	2.1
36	C42	Hematopoietic and reticuloendothelial system	203	6.8	106	3.3	309	5.0
37	C44	Skin other	43	1.4	35	1.1	78	1.3
38	C47	Peripheral nerves & autonomic nervous system	20	0.7	15	0.5	35	0.6
39	C48	Peritoneum & retroperitoneal	8	0.3	4	0.1	12	0.2
40	C49	Connective subcutaneous & other soft tissue	16	0.5	19	0.6	35	0.6
41	C50	Breast	14	0.5	510	15.8	524	8.5
42	C51	Vulva	0	0.0	20	0.6	20	0.3
43	C52	Vagina	0	0.0	13	0.4	13	0.2
44	C53	Cervix uteri	0	0.0	688	21.3	688	11.1
45	C54	Endometrium	0	0.0	21	0.7	21	0.3
46	C55	Uterus	0	0.0	6	0.2	6	0.1
47	C56	Ovary	0	0.0	216	6.7	216	3.5
48	C57	Other & unspecified female genital organs	0	0.0	28	0.9	28	0.5
49	C60	Penis	49	1.6	0	0.0	49	0.8
50	C61	Prostate gland	48	1.6	0	0.0	48	0.8
51	C62	Testis	16	0.5	0	0.0	16	0.3
52	C63	Other & unspecified male genital organs	15	0.5	0	0.0	15	0.2
53	C64	Kidney	46	1.5	23	0.7	69	1.1
54	C67	Bladder	77	2.6	17	0.5	94	1.5
55	C68	Other & unspecified urinary organs	1	0.0	3	0.1	4	0.1
56	C69	Eye & adexa	28	0.9	15	0.5	43	0.7
57	C70	Meninges	4	0.1	2	0.1	6	0.1
58	C71	Brain	81	2.7	44	1.4	125	2.0
59	C72	Spinal cord & other parts of CNS	3	0.1	2	0.1	5	0.1
60	C73	Thyroid	40	1.3	91	2.8	131	2.1
61	C74	Adrenal gland	1	0.0	0	0.0	1	0.0



62	C75	Other endocrine & related structure	1	0.0	1	0.0	2	0.0
63	C76	Other & ill defined sites	92	3.1	54	1.7	146	2.4
64	C77	Lymph nodes	158	5.3	75	2.3	233	3.8
65	C80	Unknown primary site	56	1.9	48	1.5	104	1.7
	Total		2970	100.0	3229	100.0	6199	100.0

**Table 3**

Top ten cancer by site & sex			
S.N.	Male ICD Code & site	Female ICD Code & site	Both sex ICD Code & site
1	C34 Bronchus & lung(20.0%)	C53 Cervix uteri(21.3%)	C34 Bronchus & lung(15.1%)
2	C16 Stomach(7.8%)	C50 Breast(15.8%)	C53 Cervix uteri(11.1%)
3	C42 Hematopoietic and reticuloendothelial system (6.8%)	C34 Bronchus & lung(10.5)	C50 Breast(8.5%)
4	C32 Larynx(5.6%)	C56 Ovary(6.7%)	C16 Stomach(5.6%)
5	C77 Lymph nodes(5.3%)	C23 Gall bladder(4.8%)	C42 Hematopoietic and reticuloendothelial system (5.0%)
6	C23 Gall bladder(3.5%)	C16 Stomach(3.6%)	C23 Gall bladder(4.2%)
7	C76 Other & ill defined sites(3.1%)	C42 Hematopoietic and reticuloendothelial system(3.3%)	C77 Lymph nodes(3.8%)
8	C15 Esophagus(3.0%)	C73 Thyroid(2.8%)	C32 Larynx(3.5%)
9	C71 Brain(2.7%)	C18 Colon(2.4%)	C56 Ovary(3.5%)
10	C67 Bladder(2.6%)	C77 Lymph nodes(2.3%)	C18 Colon(2.4%)

**Table 4**

Bronchus & lung cancer cases by sex			
S.N.	Sex	Number	Percent
1	Male	595	63.6
2	Female	340	36.4
	Total	935	100



Figure 1: Distribution of cases by sex (2009)

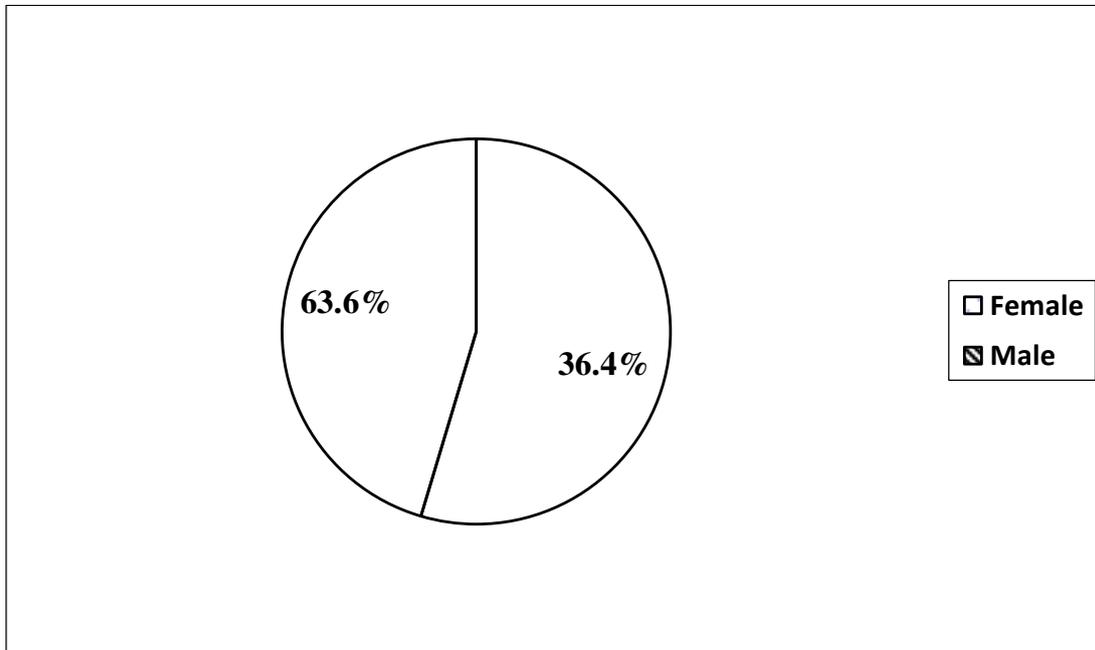


Table 5

Bronchus & lung cancer cases by religion			
S.N.	Religion	Number	Percent
1	Buddhist	49	5.2
3	Hindu	740	79.1
4	Islam	10	1.1
6	Others	136	14.5
	Total	935	100

Table 6

Bronchus & lung cancer cases by marital status			
S.N.		Number	Percent
2	Married	827	88.45
5	Unmarried	15	1.60
6	Widow	20	2.14
7	Not Available	73	7.81
	Total	935	100.00



**Table 7**

<b>Bronchus &amp; lung cancer cases by education</b>			
S.N.	Education	Number	Percent
1	Illiterate	257	27.5
2	Literate	493	52.7
3	Not Available	185	19.8
	Total	935	100

**Table 8**

<b>Bronchus &amp; lungcancer cases by occupation</b>			
S.N.	occupation	Number	Percent
1	Agriculture	450	48.1
2	Business	9	1.0
4	Housework	169	18.1
6	Office Work	26	2.8
7	Others	281	30.1
	Total	935	100

**Table 9**

<b>Bronchus &amp; lung cancer cases by treatment received (only 621 received treatment)</b>			
S.N.	Treatment received	Number	Percent
1	Chemotherapy	309	49.8
2	Radiotherapy	44	7.1
3	Radiotherapy &Chemotherapy	110	17.7
4	Supportive	97	15.6
5	Surgery	16	2.6
6	Surgery Chemotherapy	8	1.3
7	Surgery+Radiotherapy	4	0.6
8	Surgery+Radiotherapy+Chemotherapy	3	0.5
9	Symptomatic	30	4.8
	Total	621	100

**Table 10**

<b>Bronchus &amp; lung cancer cases by diagnostic method</b>			
S.N.	Method of diagnosis	Number	Percent
1	Microscopy	799	92.4
2	Non -microscopy	66	7.6
	Total	865	100



**Table 11**

<b>Bronchus &amp; lung cancer cases by age group and sex</b>			
S.N.		Total	
		#	%
1	0-4 yrs	0	0
2	5-9 yrs	1	0.1
3	10-14 yrs	1	0.1
4	15-19 yrs	2	0.2
5	20-24 yrs	5	0.5
6	25-29 yrs	4	0.4
7	30-34 yrs	5	0.5
8	35-39 yrs	15	1.6
9	40-44 yrs	33	3.5
10	45-49 yrs	52	5.6
11	50-54 yrs	110	11.8
12	55-59 yrs	132	14.1
13	60-64 yrs	196	21.0
14	65-69 yrs	170	18.2
15	70-74 yrs	102	10.9
16	75-79 yrs	78	8.3
17	80 + yrs	29	3.1
	Total	935	100

**IV. DISCUSSION**

In this study Cancer data of 2009 were collected from different data source institution. Collected data were entry, edit and coded according to international classification disease oncology, ICD- 03 and ICD- 10, double entries were deleted verified by name, age, sex and address. Indian cases were excluded and only Nepali cases were included for analysis. Among the cases bronchus & lung cancer 935 ranked as a first leasing cancer site for both sex. Most of the cases from Hindu community. Only bronchus & lung cancer cases were separated out of 6199 and proceed for descriptive analysis of bronchus and lung cancer. Whereas., lung cancer was 15.1% n= 935 for both sex ( Male 20.0% n=595, female 10.5% n= 340 ) Most of the cases 79.1% were from Hindu community. First choice of treatment 49.8% was chemotherapy followed by 17.7 % radiotherapy & chemotherapy

**V. CONCLUSION**

Lung cancer cases were most prevalent (21.0%) in age group of (60-64) years for both sex.

**REFERENCES**

1. Global Cancer Statics 2018
2. International Classification of Disease for oncology, WHO/IARC 3rd Edition, Lyon France , 2000
3. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2003, B.P. Koirala Memorial Cancer Hospital Bharatpur, Chitwan, Nepal
4. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2004, B.P. Koirala



- Memorial Cancer Hospital Bharatpur, Chitwan, Nepal
5. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2005, B.P. Koirala Memorial Cancer Hospital Bharatpur, Chitwan, Nepal
  6. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2006, B.P. Koirala Memorial Cancer Hospital Bharatpur, Chitwan, Nepal
  7. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2007, B.P. Koirala Memorial Cancer Hospital Bharatpur, Chitwan, Nepal
  8. National Cancer Registry Programme, Report of Hospital Based National Cancer Registry 2008, B.P. Koirala Memorial Cancer Hospital Bharatpur, Chitwan, Nepal



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