

Chapter 3

SITES OF CANCER ASSOCIATED WITH THE USE OF TOBACCO

According to the International Agency for Research on Cancer Monograph (IARC, 1987), sites of cancer that have been associated with the use of tobacco (TRC) include lip, tongue, mouth, pharynx (including oropharynx and hypopharynx), oesophagus, larynx, lung and urinary bladder. The IARC report of 2004 (IARC, 2004) states, that there was now sufficient evidence to establish a causal association between cigarette smoking and cancer of the nasal cavities and nasal sinuses, oesophagus (adenocarcinoma), stomach, liver, kidney (renal cell carcinoma), uterine cervix and myeloid leukemia apart from the sites in the earlier monograph (IARC, 1987).

Table 3.1 illustrates number and relative proportion of TRCs (IARC 1987) of different PBCRs. Among males, the highest relative proportion (%) of TRC was seen in Ahmedabad district (other than Ahmedabad urban) (50.6%), followed by Bhopal (47.6%), Kolkata (45.8%), Chennai (41.7%), Mumbai (40.5%), Delhi (39.1%), Barshi (36.8%) and Bangalore (33.4%). In females, the relative proportion (%) of TRC ranged from 10.7% in Delhi to 15.2% in Bangalore and Chennai. The number and proportion of tobacco related cancers relative to all sites of cancer is tabulated (as per IARC, 1987) and provided under Table 3.2. Figure 3.1 illustrates the proportion of TRCs relative to all sites.

TABLE 3.1: Number(#) & Relative Proportion(%) of TRCs : 2004-05

Registry	Males TRCs		Females TRCs	
	#	%	#	%
Bangalore	1544	33.4	857	15.2
Barshi	89	36.8	37	14.0
Bhopal	516	47.6	148	13.8
Chennai	1876	41.7	746	15.2
Delhi	4754	39.1	1204	10.7
Mumbai	3937	40.5	1474	14.7
Ahmedabad	431	50.6	85	14.9
Kolkata *	862	45.8	246	13.8

* only 2005 data.

Table 3.3 and figure 3.2 illustrate the number and proportion of specific sites of cancer among all tobacco related cancers. In males, lung was the leading site in all the registries contributing to 20.4% -

TABLE 3.2: Number(#) & Proportion(%) of Tobacco Related Cancers (TRCs) relative to all sites of cancer (Males & Females) - 2004-05

Site of Cancer	Bangalore		Barshi		Bhopal		Chennai		Delhi		Mumbai		Ahmedabad		Kolkata *	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Males																
Lip	3	0.1	0	0.0	7	0.6	10	0.2	39	0.3	39	0.4	3	0.4	29	1.5
Tongue	146	3.2	9	3.7	104	9.6	242	5.4	684	5.6	507	5.2	88	10.3	78	4.1
Mouth	133	2.9	14	5.8	111	10.2	259	5.8	575	4.7	746	7.7	93	10.9	84	4.5
Oropharynx	58	1.3	0	0.0	10	0.9	54	1.2	108	0.9	53	0.5	8	0.9	12	0.6
Hypopharynx	179	3.9	21	8.7	42	3.9	177	3.9	217	1.8	344	3.5	60	7.1	86	4.6
Pharynx Unsp.	56	1.2	0	0.0	1	0.1	18	0.4	39	0.3	62	0.6	16	1.9	5	0.3
Oesophagus	303	6.6	16	6.6	57	5.3	311	6.9	482	4.0	509	5.2	38	4.5	65	3.5
Larynx	168	3.6	15	6.2	50	4.6	193	4.3	802	6.6	520	5.3	32	3.8	141	7.5
Lung	374	8.1	7	2.9	111	10.2	488	10.8	1228	10.1	802	8.2	79	9.3	305	16.2
Bladder	124	2.7	7	2.9	23	2.1	124	2.8	580	4.8	355	3.6	14	1.6	57	3.0
TRC	1544	33.4	89	36.8	516	47.6	1876	41.7	4754	39.1	3937	40.5	431	50.6	862	45.8
All Sites	4619	100.0	242	100.0	1085	100.0	4501	100.0	12151	100.0	9731	100.0	851	100.0	1881	100.0
Females																
Lip	6	0.1	0	0.0	4	0.4	7	0.1	16	0.1	24	0.2	4	0.7	11	0.6
Tongue	55	1.0	2	0.8	22	2.1	73	1.5	163	1.4	179	1.8	7	1.2	42	2.4
Mouth	259	4.6	3	1.1	41	3.8	179	3.6	166	1.5	335	3.3	21	3.7	35	2.0
Oropharynx	4	0.1	0	0.0	0	0.0	9	0.2	22	0.2	12	0.1	0	0.0	0	0.0
Hypopharynx	53	0.9	2	0.8	5	0.5	84	1.7	36	0.3	98	1.0	10	1.8	14	0.8
Pharynx Unsp.	16	0.3	0	0.0	0	0.0	11	0.2	9	0.1	30	0.3	7	1.2	2	0.1
Oesophagus	269	4.8	18	6.8	42	3.9	197	4.0	273	2.4	342	3.4	21	3.7	30	1.7
Larynx	23	0.4	1	0.4	6	0.6	34	0.7	89	0.8	75	0.7	1	0.2	15	0.8
Lung	133	2.4	10	3.8	22	2.1	123	2.5	310	2.8	272	2.7	10	1.8	69	3.9
Bladder	39	0.7	1	0.4	6	0.6	29	0.6	120	1.1	107	1.1	4	0.7	28	1.6
TRC	857	15.2	37	14.0	148	13.8	746	15.2	1204	10.7	1474	14.7	85	14.9	246	13.8
All Sites	5627	100.0	265	100.0	1069	100.0	4912	100.0	11256	100.0	10053	100.0	571	100.0	1786	100.0

* only 2005 data.

35.4% of all TRCs except in the registries at Barshi (7.9%) and Ahmedabad district (other than Ahmedabad urban) (18.3%). In Barshi, the leading site was hypopharynx (23.6%) and in Ahmedabad district (other than Ahmedabad urban), mouth and tongue were the leading sites contributing 42% of the total TRCs. Further, the four leading sites lung, oesophagus, mouth and tongue contributed 51.7% in Barshi to 74.2% in Bhopal of the total TRCs in different registries in males. In females, the three leading sites were oesophagus, mouth and lung that contributed 54.5% in Kolkata to 83.8% in Barshi of all the TRCs.

TABLE 3.3 : Number(#) & Proportion(%) of specific sites of cancer among all Tobacco Related Cancers (TRC)-2004-05

Site of Cancer	Bangalore		Barshi		Bhopal		Chennai		Delhi		Mumbai		Ahmedabad		Kolkata *	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Males																
Lip	3	0.2	0	0.0	7	1.4	10	0.5	39	0.8	39	1.0	3	0.7	29	3.4
Tongue	146	9.5	9	10.1	104	20.2	242	12.9	684	14.4	507	12.9	88	20.4	78	9.0
Mouth	133	8.6	14	15.7	111	21.5	259	13.8	575	12.1	746	18.9	93	21.6	84	9.7
Oropharynx	58	3.8	0	0.0	10	1.9	54	2.9	108	2.3	53	1.3	8	1.9	12	1.4
Hypopharynx	179	11.6	21	23.6	42	8.1	177	9.4	217	4.6	344	8.7	60	13.9	86	10.0
Pharynx Unsp.	56	3.6	0	0.0	1	0.2	18	1.0	39	0.8	62	1.6	16	3.7	5	0.6
Oesophagus	303	19.6	16	18.0	57	11.0	311	16.6	482	10.1	509	12.9	38	8.8	65	7.5
Larynx	168	10.9	15	16.9	50	9.7	193	10.3	802	16.9	520	13.2	32	7.4	141	16.4
Lung	374	24.2	7	7.9	111	21.5	488	26.0	1228	25.8	802	20.4	79	18.3	305	35.4
Bladder	124	8.0	7	7.9	23	4.5	124	6.6	580	12.2	355	9.0	14	3.2	57	6.6
TRC	1544	100.0	89	100.0	516	100.0	1876	100.0	4754	100.0	3937	100.0	431	100.0	862	100.0
Females																
Lip	6	0.7	0	0.0	4	2.7	7	0.9	16	1.3	24	1.6	4	4.7	11	4.5
Tongue	55	6.4	2	5.4	22	14.9	73	9.8	163	13.5	179	12.1	7	8.2	42	17.1
Mouth	259	30.2	3	8.1	41	27.7	179	24.0	166	13.8	335	22.7	21	24.7	35	14.2
Oropharynx	4	0.5	0	0.0	0	0.0	9	1.2	22	1.8	12	0.8	0	0.0	0	0.0
Hypopharynx	53	6.2	2	5.4	5	3.4	84	11.3	36	3.0	98	6.6	10	11.8	14	5.7
Pharynx Unsp.	16	1.9	0	0.0	0	0.0	11	1.5	9	0.7	30	2.0	7	8.2	2	0.8
Oesophagus	269	31.4	18	48.6	42	28.4	197	26.4	273	22.7	342	23.2	21	24.7	30	12.2
Larynx	23	2.7	1	2.7	6	4.1	34	4.6	89	7.4	75	5.1	1	1.2	15	6.1
Lung	133	15.5	10	27.0	22	14.9	123	16.5	310	25.7	272	18.5	10	11.8	69	28.0
Bladder	39	4.6	1	2.7	6	4.1	29	3.9	120	10.0	107	7.3	4	4.7	28	11.4
TRC	857	100.0	37	100.0	148	100.0	746	100.0	1204	100.0	1474	100.0	85	100.0	246	100.0

* only 2005 data.

Fig. 3.1: Number(#) & Proportion(%) of Tobacco Related Cancers (TRCs) Relative to All Sites of Cancers (Males & Females)

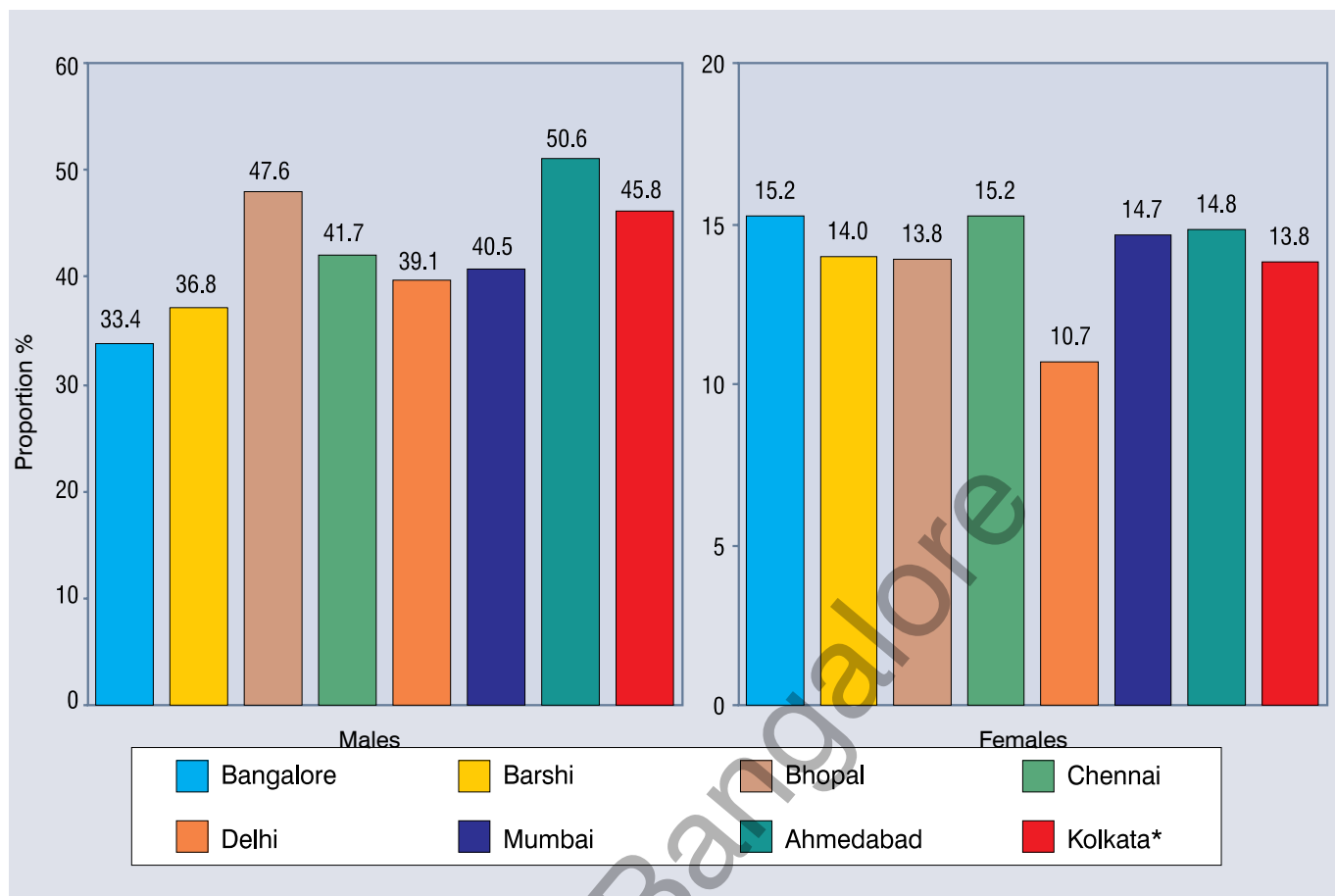
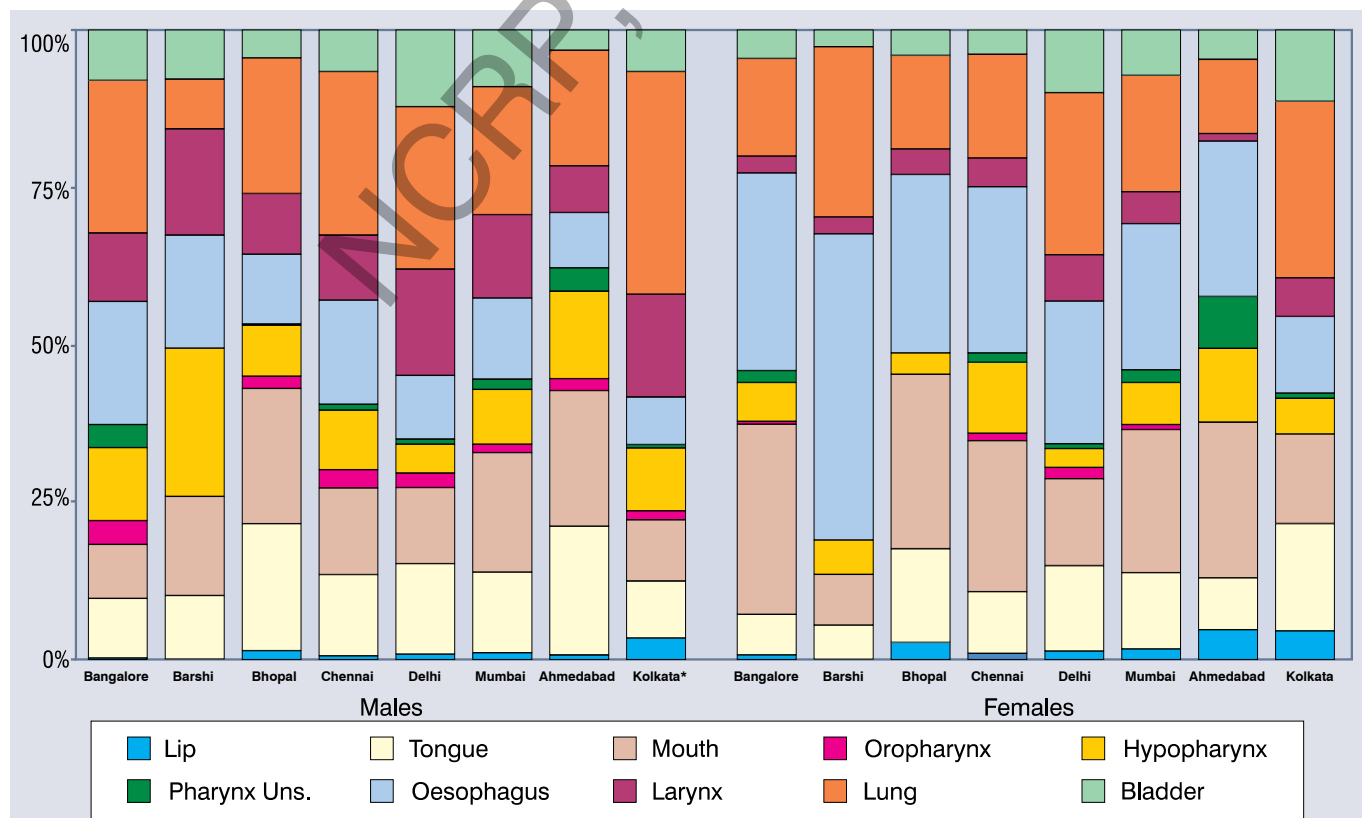


Fig. 3.2: Number(#) & Proportion(%) of Tobacco Related Cancers (TRCs) among all Tobacco Related Sites (Males & Females)



* only 2005 data.