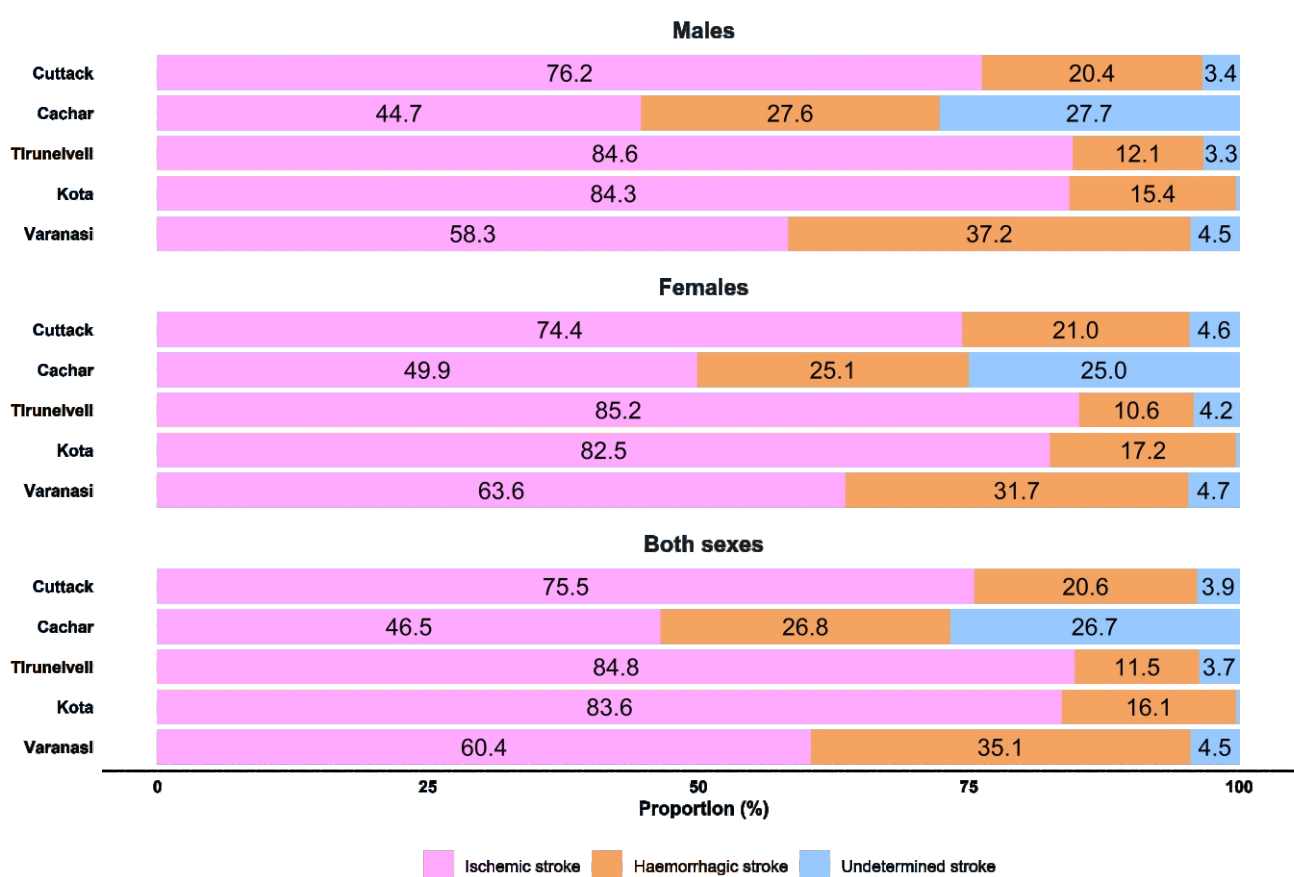


2. Type of Stroke

The three stroke subtypes are classified based on imaging and clinical diagnosis as - ischemic stroke (includes venous stroke), haemorrhagic stroke (includes intracerebral haemorrhage and subarachnoid haemorrhage) and undetermined stroke (type of stroke cannot be determined due to non-availability of diagnostic test or where stroke is recorded in death certificates). Accordingly, ICD-10 codes for ischemic (including venous stroke), haemorrhagic and undetermined stroke are recorded in the PBSR. Venous strokes are classified under ischemic stroke with ICD 10 code I63.6: Cerebral infarction due to cerebral venous thrombosis, nonpyogenic. Distribution of numbers and proportion of type of stroke by gender in the five registries is described in this chapter.

Figure 2.1 Proportion (%) of first-ever stroke cases by type of stroke



< 2.0 % values are not labelled in above figure

Table 2.1. Number (n) and proportion (%) of first-ever stroke cases by type in males

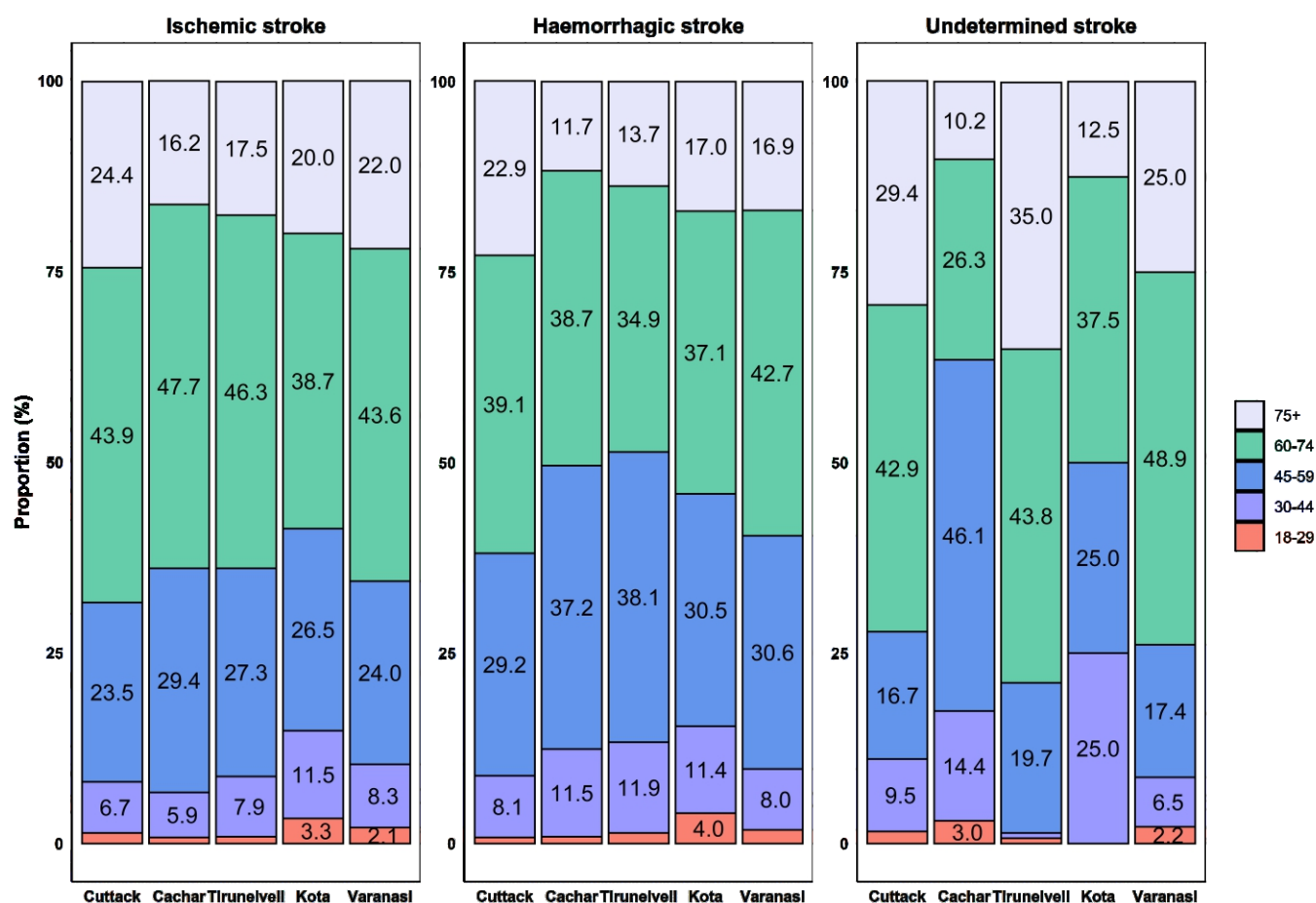
Age group	Cuttack		Cachar		Tirunelveli		Kota		Varanasi	
	n	%	n	%	n	%	n	%	n	%
Ischemic stroke										
18-29	16	1.1	3	0.4	20	1.1	42	3.4	11	1.5
30-44	103	7.1	41	5.7	165	8.8	144	11.7	57	7.8
45-59	335	23.1	220	30.6	564	30.1	364	29.5	164	22.3
60-74	638	44.0	351	48.9	831	44.4	467	37.9	336	45.8
75+	359	24.7	103	14.3	292	15.6	216	17.5	166	22.6
All ages	1451	100	718	100	1872	100	1233	100	734	100
Haemorrhagic stroke										
18-29	5	1.3	2	0.4	3	1.1	13	5.8	9	1.9
30-44	34	8.8	47	10.6	36	13.4	29	12.9	40	8.6
45-59	100	25.8	162	36.4	118	43.9	71	31.6	150	32.1
60-74	150	38.7	188	42.2	78	29.0	78	34.7	201	43.0
75+	99	25.5	46	10.3	34	12.6	34	15.1	67	14.3
All ages	388	100	445	100	269	100	225	100	467	100
Undetermined stroke										
18-29	0	0.0	14	3.1	0	0.0	0	0.0	2	3.6
30-44	5	7.7	59	13.3	1	1.4	2	40.0	3	5.4
45-59	15	23.1	209	47.0	20	27.0	1	20.0	8	14.3
60-74	26	40.0	120	27.0	29	39.2	1	20.0	25	44.6
75+	19	29.2	43	9.7	24	32.4	1	20.0	18	32.1
All ages	65	100	445	100	74	100	5	100	56	100

Table 2.2. Number (n) and proportion (%) of first-ever stroke cases by type in females

Age group	Cuttack		Cachar		Tirunelveli		Kota		Varanasi	
	n	%	n	%	n	%	n	%	n	%
Ischemic stroke										
18-29	19	1.9	6	1.4	9	0.7	23	3.2	15	3.1
30-44	61	6.2	28	6.3	84	6.5	81	11.1	44	9.0
45-59	238	24.2	121	27.4	300	23.2	156	21.4	129	26.4
60-74	431	43.8	202	45.7	635	49.2	293	40.2	197	40.4
75+	235	23.9	85	19.2	263	20.4	176	24.1	103	21.1
All ages	984	100	442	100	1291	100	729	100	488	100
Haemorrhagic stroke										
18-29	0	0.0	4	1.8	3	1.9	2	1.3	4	1.6
30-44	20	7.2	30	13.5	15	9.3	14	9.2	17	7.0
45-59	94	33.9	86	38.7	46	28.6	44	28.9	67	27.6
60-74	110	39.7	70	31.5	72	44.7	62	40.8	102	42.0
75+	53	19.1	32	14.4	25	15.5	30	19.7	53	21.8
All ages	277	100	222	100	161	100	152	100	243	100

Age group	Cuttack		Cachar		Tirunelveli		Kota		Varanasi	
	n	%	n	%	n	%	n	%	n	%
Undetermined stroke										
18-29	2	3.3	6	2.7	1	1.6	0	0.0	0	0.0
30-44	7	11.5	37	16.7	0	0.0	0	0.0	3	8.3
45-59	6	9.8	98	44.3	7	11.1	1	33.3	8	22.2
60-74	28	45.9	55	24.9	31	49.2	2	66.7	20	55.6
75+	18	29.5	25	11.3	24	38.1	0	0.0	5	13.9
All ages	61	100	221	100	63	100	3	100	36	100

Figure 2.2 Proportion (%) of first-ever stroke by type and age groups



< 2.0 % values are not labelled in above figure

Table 2.4. Number (n) and proportion (%) of first-ever stroke cases by type and place of residence

Type of stroke	Cuttack		Cachar		Tirunelveli		Kota*		Varanasi*	
	n	%	n	%	n	%	n	%	n	%
Urban										
Ischemic stroke	1111	80.5	233	63.1	1189	83.8	1962	83.6	1222	60.4
Haemorrhagic stroke	253	18.3	95	25.7	169	11.9	377	16.1	710	35.1
<i>Intracerebral haemorrhage</i>	236	17.1	91	24.7	141	9.9	338	14.4	694	34.3
<i>Subarachnoid haemorrhage</i>	17	1.2	4	1.1	28	2.0	39	1.7	16	0.8
Undetermined stroke	17	1.2	41	11.1	61	4.3	8	0.3	92	4.5
Total	1381	100	369	100	1419	100	2347	100	2024	100

Table 2.4. Number (n) and proportion (%) of first-ever stroke cases by type and place of residence

Rural							N.A
Ischemic stroke	1324	71.8	927	43.6	1974	85.4	
Haemorrhagic stroke	412	22.3	572	26.9	261	11.3	
<i>Intracerebral haemorrhage</i>	396	21.5	561	26.4	221	9.6	
<i>Subarachnoid haemorrhage</i>	16	0.9	11	0.5	40	1.7	
Undetermined stroke	109	5.9	625	29.4	76	3.3	
Total	1845	100	2124	100	2311	100	

*Kota and Varanasi cover only urban population .

Table 2.5. Crude rate (CR) and Age Standardised incidence Rate (ASR) per 100,000 population

Registry	Ischemic stroke		Haemorrhagic stroke		Undetermined stroke	
	CR	ASR	CR	ASR	CR	ASR
	(95% C.I.)	(95% C.I.)	(95% C.I.)	(95% C.I.)	(95% C.I.)	(95% C.I.)
Males						
Cuttack	165.7 (157.1-174.2)	110.6 (101.6-119.6)	44.3 (39.9-48.7)	29.2 (24.6-33.8)	7.4 (5.6-9.2)	4.9 (3.0-6.7)
Cachar	55.1 (51.1-59.1)	47.7 (42.2-53.2)	34.1 (31.0-37.3)	28.4 (24.2-32.6)	34.1 (31.0-37.3)	26.7 (22.8-30.7)
Tirunelveli	174.0 (166.1-181.9)	115.3 (107.2-123.5)	25.0 (22.0-28.0)	16.3 (13.2-19.3)	6.9 (5.3-8.4)	4.6 (2.9-6.2)
Kota	127.1 (120.0-134.2)	110.4 (100.6-120.2)	23.2 (20.2-26.2)	19.7 (15.6-23.8)	6.7 (5.1-8.3)	6.1 (3.8-8.5)
Varanasi	85.2 (79.0-91.4)	65.8 (58.4-73.3)	54.2 (49.3-59.1)	42.1 (36.1-48.1)	6.5 (4.8-8.2)	5.0 (2.9-7.0)
Females						
Cuttack	116.6 (109.3-123.9)	81.4 (73.4-89.5)	38.7 (35.7-41.6)	26.2 (23.1-29.4)	7.2 (5.4-9.0)	4.9 (3.0-6.9)
Cachar	34.6 (31.4-37.9)	31.0 (26.4-35.6)	17.4 (15.1-19.7)	14.6 (11.5-17.6)	17.3 (15.0-19.6)	14.0 (11.0-16.9)
Tirunelveli	115.0 (108.7-121.3)	69.9 (63.9-75.8)	14.3 (12.1-16.6)	8.8 (6.7-10.9)	5.6 (4.2-7.0)	3.3 (2.0-4.6)
Kota	81.3 (75.4-87.2)	66.2 (58.7-73.8)	17.0 (14.3-19.7)	14.0 (10.5-17.5)	6.8 (5.1-8.5)	5.6 (3.4-7.8)
Varanasi	62.2 (56.7-67.7)	47.0 (40.4-53.5)	31.0 (27.1-34.9)	23.6 (19.0-28.3)	4.6 (3.1-6.1)	3.6 (1.7-5.4)
Both sexes						
Cuttack	141.6 (136.0-147.2)	96.6 (90.5-102.6)	39.0 (36.0-41.9)	26.4 (23.2-29.6)	7.3 (6.0-8.6)	4.9 (3.5-6.3)
Cachar	45.0 (42.4-47.6)	39.6 (36.0-43.2)	25.9 (23.9-27.8)	21.7 (19.1-24.3)	25.8 (23.9-27.8)	20.6 (18.1-23.0)
Tirunelveli	143.9 (138.9-148.9)	91.4 (86.4-96.3)	19.6 (17.7-21.4)	12.4 (10.5-14.2)	6.2 (5.2-7.3)	3.9 (2.9-4.9)
Kota	105.1 (100.5-109.8)	88.5 (82.4-94.7)	20.2 (18.2-22.2)	16.9 (14.2-19.6)	6.8 (5.6-7.9)	5.9 (4.2-7.5)
Varanasi	74.3 (70.1-78.4)	56.8 (51.8-61.8)	43.1 (40.0-46.3)	33.6 (29.8-37.5)	5.6 (4.4-6.7)	4.3 (2.9-5.7)

Key Findings

- The leading type of stroke in all the registries is ischemic stroke (range 46.5% to 84.8%) followed by haemorrhagic stroke (range 11.5% to 35.1%)
- Males in age group of 60-74 had the highest proportion of ischemic (43.7%) and haemorrhagic stroke (38.7%)
- Tirunelveli PBSR has the highest CR (143.9) and Cuttack PBSR has the highest ASR (96.6) per 100,000 population for ischemic stroke
- Varanasi PBSR has the highest CR (43.1) and ASR (33.6) per 100,000 population for haemorrhagic stroke
- Cachar PBSR has the highest CR (25.8) and ASR (20.6) per 100,000 population for undetermined stroke