Section: General Medicine

Original Research Article

ASSESSING THE RADIOLOGICAL CORRELATION IN ANTERIOR AND POSTERIOR CIRCULATION ISCHEMIC STROKE

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ABSTRACT

Background: Acute ischemic stroke contributes significantly to mortality and morbidity across the globe with higher prevalence seen in developing nations as India. Stroke can either involve either the anterior circulation infarction (ACI) or posterior circulation infarction as PCS with both having distinct radiological and clinical features making it vital to study these. **Aim:** The present study was aimed to assess the radiological correlation in Anterior and posterior circulation ischemic stroke.

Materials and Methods: The study included 208 subjects where 60 had posterior circulation stroke and 148 subjects had anterior circulation stroke. For all the included subjects, detailed history was recorded followed by comprehensive clinical examination and CT examination in subjects with Transient ischemic stroke (duration less than 24 hr) and Hematological investigations done at N.S.C.B. Medical College, Jabalpur. Data for study subjects was collected using structured schedule

Results: The study results showed that the distribution of smoking, systemic hypertension, diabetes mellitus, alcohol, atrial fibrillation, coronary artery disease was comparable with radiological findings in anterior circulation {Basal ganglia vs Frontal and Parietal vs Frontal vs Internal capsule vs Parietal vs Parietal and temporal vs Temporal}.

Conclusion: The present study concludes that

Keywords: Anterior circulation infarction, posterior circulation infarction, radiographic correlation, risk factors, stroke.

INTRODUCTION

Stroke is the most common life-threatening neurological condition and is ranked third in causing the mortality following cancer and heart disease and accounts of 1 of every 15 lives lost. In elderly subjects, the population where stroke is most commonly seen, it is the major cause of disability that need long term admission in the hospital. In subjects that suffer the acute stroke, the treating personnel should assess the etiology, assess its severity, consider the possible recurrence or progression and must see the ways to stabilize or reverse the stroke.[1] Various investigations that are done to assess stroke at its early stage must be done to help the clinicians for subcategorization of the subjects at three different levels that separate stroke from non-stroke cases including subdural hematoma and cerebral tumors that distinguish hemorrhage from infarction and identify specific pathophysiological subtypes in subjects with cerebral infarction. Owing to the possibility associated with recurrence or worsening is significant, rapid efforts must be done to reach at the diagnosis of stroke and its mechanism utilizing this approach.[2,3]

The ideal test used for diagnosis of the stroke must be informative, accurate, accessible, non-invasive, and inexpensive. At majority of the institutes, the first testing step is an attempt of radiographic assessment of injured site using MRI (magnetic Resonance Imaging) or CT (computed tomography). CT scan is a relatively inexpensive procedures at various institutes along with being easily accessible and non-invasive modality compared to MRI imaging. With

analyzing the subtle signs and the topographical pattern of brain tissue affection, it is possible to reach a reasonable conclusion regarding the type of stroke and its site of origin, it would greatly help us in further management.[4]

MATERIALS AND METHODS

The present observational study was aimed to assess the radiological correlation in Anterior and posterior circulation ischemic stroke. The study was done at Department of Medicine at Netaji Subhash Chandra Bose Medical College & Hospital, Jabalpur (M.P.) The study was done after the clearance was taken by the concerned Institutional Ethical committee. The study subjects were from Department of Neurosurgery of the Institute. Verbal and written informed consent were taken from all the subjects before study participation.

The sample size for the study was calculated as follows: the adequate required sample size is 104 and was estimated using following formula - Sample Size Where N = number of samples r = two group ratio ratio = 1 p = Proportion of population = (P1 + P2) Z1-β = it is the desired power (0.84 for 80% power) Z1-/2 = Critical value and a standard value for the corresponding = 1.96 at 95% CI P1 = First Group Proportion in cases = 60% P2 = Second Group Proportion in cases = 40.8% Then n = 104.

The study was conducted in the Wards & ICU of Department of Medicine, N.S.C.B.M.C.H., Jabalpur (M.P.) The inclusion criteria for the study were subjects aged above 14 years, admitted in General Medicine ward with abrupt onset of a focal neurological deficit of vascular origin (ischemic) and persisted for more than 24 hours. The exclusion criteria for the study were subjects aged less than 14 years, hemorrhagic strokes, venous strokes, head trauma, central nervous system tumors, neuro infection causing weakness, and subdural hemorrhage.

For all the included subjects, detailed history was recorded followed by comprehensive clinical examination in subjects with Transient ischemic stroke (duration less than 24 hr) and Hematological investigations along with CT examination done at N.S.C.B.Medical College, Jabalpur. Data for study subjects was collected using structured schedule (case report form) and entered in Microsoft Excel Sheet.

The data gathered were subjected to statistical evaluation using the chi-square test, Fisher's exact test, Mann Whitney U test, and SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) using ANOVA, chi-square test, and student's t-test. The significance level was considered at a p-value of <0.05.

RESULTS

The present observational study was aimed to assess the radiological correlation in Anterior and posterior circulation ischemic stroke. The study was done at Department of Medicine at Netaji Subhash Chandra Bose Medical College & Hospital, Jabalpur (M.P.). The demographic data of study subjects is listed in Table 1.

The study results showed that the distribution of smoking, systemic hypertension, diabetes mellitus, alcohol, atrial fibrillation, coronary artery disease was comparable with radiological findings in anterior circulation {Basal ganglia vs Frontal and Parietal vs Frontal vs Internal capsule vs Parietal vs Parietal and temporal vs Temporal}. (Smoking:- 33.33% vs 0.00% vs 26.67% vs 0.00% vs 14.29% vs 48.48% vs 33.33% respectively (p value=0.416), Systemic hypertension:- 41.67% vs 100.00% vs 53.33% vs 66.67% vs 85.71% vs 69.70% vs 33.33% respectively (p value=0.324), Diabetes mellitus:- 33.33% vs 0.00% vs 26.67% vs 33.33% vs 28.57% vs 33.33% vs 66.67% respectively (p value=0.933), Alcohol:- 25.00% vs 0.00% vs 40.00% vs 33.33% vs 28.57% vs 27.27% vs 0.00% respectively (p value=0.905), Atrial fibrillation:- 0.00% vs 0.00% vs 6.67% vs 0.00% vs 14.29% vs 0.00% vs 33.33% respectively (p value=0.082), Coronary artery disease:- 8.33% vs 0.00% vs 13.33% vs 0.00% vs 42.86% vs 27.27% vs 0.00% respectively (p value=0.475)). Proportion of patients with high plasma lipid was significantly higher in parietal (42.86%) (p value=0.023) (Table 2).

Distribution of symptoms was comparable with radiological findings in anterior circulation {Basal ganglia vs Frontal and Parietal vs Frontal vs Internal capsule vs Parietal vs Parietal and temporal vs Temporal}. (Headache: 16.67% vs 100.00% vs 33.33% vs 0.00% vs 0.00% vs 30.30% vs 66.67% respectively (p value=0.135), Vertigo: 33.33% vs 0.00% vs 6.67% vs 0.00% vs 14.29% vs 9.09% vs 33.33% respectively (p value=0.285), Nausea, vomiting:- 0.00% vs 100.00% vs 20.00% vs 0.00% vs 28.57% vs 18.18% vs 33.33% respectively (p value=0.162), Seizure:- 8.33% vs 100.00% vs 40.00% vs 33.33% vs 14.29% vs 18.18% vs 33.33% respectively (p value=0.177), Ataxia:- 0.00% vs 0.00% vs 0.00% vs 0.00% vs 0.00% vs 3.03% vs 0.00% respectively (p value=1), Aphasia:- 33.33% vs 0.00% vs 60.00% vs 33.33% vs 14.29% vs 42.42% vs 66.67% respectively (p value=0.414), Altered sensorium:- 50.00% vs 100.00% vs 53.33% vs 0.00% vs 28.57% vs 72.73% vs 66.67% respectively (p value=0.068), Hemi sensory loss:- 41.67% vs 100.00% vs 33.33% vs 66.67% vs 28.57% vs 42.42% vs 0.00% respectively (p value=0.619), Dysarthria:- 8.33% vs 0.00% vs 6.67% vs 0.00% vs 0.00% vs 6.06% vs 0.00% respectively (p value=1), Swallowing difficulty:- 16.67% vs 100.00% vs 20.00% vs 33.33% vs 0.00% vs 12.12% vs 0.00% respectively (p value=0.28), Quadriparesis:- 8.33%

vs 0.00% vs 20.00% vs 0.00% vs 0.00% vs 6.06% vs 0.00% respectively (p value=0.655), Hemiparesis or hemiplegia:- 75.00% vs 100.00% vs 66.67% vs 100.00% vs 85.71% vs 93.94% vs 100.00% respectively (p value=0.184), Nystagmus:- 0.00% vs 0.00% vs 0.00% vs 0.00% vs 0.00% vs 6.06% vs 0.00% respectively (p value=1), Cross hemiplegia:- 0.00% vs 0.00% vs 0.00% vs 0.00% vs 0.00% vs 0.00% vs 0.00% respectively, 7th cranial nerve:- 8.33% vs 0.00% vs 20.00% vs 33.33% vs 14.29% vs 33.33% vs 0.00% respectively (p value=0.567), Visual field defect:- 0.00% vs 0.00% vs 6.67% vs 0.00% vs 0.00% vs 0.00% vs 33.33% respectively (p value=0.116)) (Table 3)

Distribution of risk factors was comparable with radiological findings in posterior circulation {Cerebellum vs Medulla vs Occipital vs Mid brain vs Pons} (Smoking:- 40.00% vs 100.00% vs 50.00% vs 0.00% vs 55.56% respectively (p value=0.866), Systemic hypertension:- 73.33% vs 0.00% vs 25.00% vs 100.00% vs 77.78% respectively (p value=0.139), Diabetes mellitus:- 46.67% vs 0.00% vs 50.00% vs 0.00% vs 11.11% respectively (p value=0.305), High plasma lipid:- 33.33% vs 0.00% vs 50.00% vs 0.00% vs 33.33% respectively (p value=0.944), Alcohol:- 13.33% vs 0.00% vs 25.00% vs 100.00% vs 11.11% respectively (p value=0.345), Atrial fibrillation:- 6.67% vs 0.00% vs 0.00% vs 0.00% vs 11.11% respectively (p value=1), Coronary artery disease:- 26.67% vs 0.00% vs 50.00% vs 0.00% vs 22.22% respectively (p value=0.848)) (Table 4).

Distribution of headache, vertigo, nausea, vomiting, seizure, aphasia, altered sensorium, hemi sensory loss, dysarthria, swallowing difficulty, quadriparesis, hemiparesis or hemiplegia, nystagmus, cross hemiplegia, 7th cranial nerve was comparable with radiological findings in posterior circulation{Cerebellum vs Medulla vs Occipital vs Mid brain vs Pons}. (Headache:- 46.67% vs 0.00% vs 75.00% vs 100.00% vs 33.33% respectively (p value=0.428), Vertigo:- 60.00% vs 0.00% vs 50.00% vs 100.00% vs 44.44% respectively (p value=0.866), Nausea, vomiting:- 46.67% vs 0.00% vs 0.00% vs 100.00% vs 55.56% respectively (p value=0.213), Seizure:- 13.33% vs 0.00% vs 50.00% vs 0.00% vs 11.11% respectively (p value=0.516), Aphasia:- 20.00% vs 0.00% vs 0.00% vs 0.00% vs 44.44% respectively (p value=0.517), Altered sensorium:- 33.33% vs 0.00% vs 75.00% vs 0.00% vs 77.78% respectively (p value=0.076), Hemi sensory loss:- 20.00% vs 100.00% vs 50.00% vs 100.00% vs 33.33% respectively (p value=0.177), Dysarthria:- 33.33% vs 0.00% vs 25.00% vs 0.00% vs 22.22% respectively (p value=0.922), Swallowing difficulty:- 26.67% vs 100.00% vs 0.00% vs 0.00% vs 44.44% respectively (p value=0.247), Quadriparesis:- 6.67% vs 0.00% vs 0.00% vs 0.00% vs 44.44% respectively (p value=0.146), Hemiparesis or hemiplegia:- 40.00% vs 100.00% vs 75.00% vs 100.00% vs 55.56% respectively (p value=0.565), Nystagmus:- 26.67% vs 0.00% vs 0.00% vs 0.00% vs 33.33% respectively (p value=0.828), Cross hemiplegia:- 6.67% vs 0.00% vs 0.00% vs 0.00% vs 22.22% respectively (p value=0.767), 7th cranial nerve:- 6.67% vs 0.00% vs 0.00% vs 0.00% vs 22.22% respectively (p value=0.767)). Proportion of patients with ataxia was significantly higher in Mid brain (100.00%) (p value=0.029). Proportion of patients with diplopia was significantly higher in occipital (50.00%) (p value=0.034). Proportion of patients with visual field defect was significantly higher in Mid brain (100.00%) (p value=0.046) (Table 5).

Table 1: Demographic characteristics in study subjects

S. No	Characteristics	Number n=208 (%)	Anterior circulation (n=148)	Posterior circulation (n=60)	p-value
1.	**Mean age (years)**	59.12±12.3	60.24±12.04	56.3±11.94	
2.	**Age range (years)**				
a)	20-30	2 (0.96)	0	2 (0.96)	0.484
b)	31-40	12 (5.77)	8 (5.41)	12 (5.77)	
c)	41-50	38 (15.27)	30 (20.27)	8 (13.33)	
d)	51-60	68 (32.69)	42 (28.38)	26 (43.33)	
e)	61-70	58 (27.88)	44 (29.73)	14 (23.33)	
f)	71-80	24 (11.54)	18 (12.16)	6 (10)	
g)	81-90	6 (2.88)	6 (4.05)	0	
3.	**Gender**				
a)	Males	140 (67.31)	92 (62.16)	48 (80)	0.08
b)	Females	68 (32.69)	56 (37.84)	12 (20)	
4.	**Systolic blood pressure (mmHg)**	136.04±23.74	136±22.24	131.25±26.90	0.194
5.	**Diastolic blood pressure (mmHg)**	83.79±12.2	85.20±11.47	80.31±14.04	0.07
6.	**Fasting blood glucose (mg/dl)**	108.17±67.9	108.21±68.93	108.07±67.07	0.994
7.	**Triglycerides (mg/dl)**	135.62±54.66	130.12±47.91	149.21±67.56	0.164
8.	**Serum cholesterol (mg/dl)**	166.39±32.06	165.34±31.76	169±33.19	0.601

Table 2: Association of risk factors with radiological findings in anterior circulation

Risk factors	Frontal(n=15)	Parietal(n=7)	Temporal(n= 3)	Parietal and temporal(n=3 3)	Frontal and Parietal (n=1)	Internal capsule(n=3)	Basal ganglia (n=12)	Total	P value
Smoking	4 (26.67 %)	1 (14.29 %)	1 (33.33 %)	16 (48.48 %)	0 (0%)	0 (0%)	4 (33.33 %)	26 (35.14%)	0.416*
Systemic hypertension	8 (53.33 %)	6 (85.71 %)	1 (33.33 %)	23 (69.70 %)	1 (100%)	2 (66.67 %)	5 (41.67 %)	46 (62.16%)	0.324*
Diabetes mellitus	4 (26.67 %)	2 (28.57 %)	2 (66.67 %)	11 (33.33 %)	0 (0%)	1 (33.33 %)	4 (33.33 %)	24 (32.43%)	0.933*
High plasma lipid	1 (6.67%)	3 (42.86 %)	1 (33.33 %)	1 (3.03%)	0 (0%)	1 (33.33 %)	2 (16.67 %)	9 (12.16%)	0.023*
Alcohol	6 (40%)	2 (28.57 %)	0 (0%)	9 (27.27 %)	0 (0%)	1 (33.33 %)	3 (25%)	21 (28.38%)	0.905*
Atrial fibrillation	1 (6.67%)	1 (14.29 %)	1 (33.33 %)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (4.05 %)	0.082*
Coronary artery disease	2 (13.33 %)	3 (42.86 %)	0 (0%)	9 (27.27 %)	0 (0%)	0 (0%)	1 (8.33%)	15 (20.27%)	0.475*

Table 3: Association of symptoms with radiological findings in anterior circulation

Symptoms	Frontal(n=15)	Parietal(n=7)	Temporal(n= 3)	Parietal and temporal(n= 33)	Frontal and Parietal (n=1)	Internal capsule(n=3)	Basal ganglia(n=12)	Total	P value
Headache	5 (33.33 %)	0 (0%)	2 (66.67 %)	10 (30.30 %)	1 (100%)	0 (0%)	2 (16.67 %)	20 (27.03%)	0.135*
Vertigo	1 (6.67%)	1 (14.29 %)	1 (33.33 %)		0 (0%)	0 (0%)	4 (33.33 %)	10 (13.51%)	0.285*
Nausea, vomiting	3 (20%)	2 (28.57 %)	1 (33.33 %)		1 (100%)	0 (0%)	0 (0%)	13 (17.57%)	0.162*
Seizure	6 (40%)	1 (14.29 %)	1 (33.33 %)		1 (100%)	1 (33.33 %)	1 (8.33%)	17 (22.97%)	0.177*
Ataxia	0 (0%)	0 (0%)	0 (0%)	1 (3.03%)	0 (0%)	0 (0%)	0 (0%)	1 (1.35 %)	1*
Aphasia	9 (60%)	1 (14.29 %)	2 (66.67 %)		0 (0%)	1 (33.33 %)	4 (33.33 %)	31 (41.89%)	0.414*
Altered sensorium	8 (53.33 %)	2 (28.57 %)	2 (66.67 %)		1 (100%)	0 (0%)	6 (50%)	43 (58.11%)	0.068*
Hemisensory loss	5 (33.33 %)	2 (28.57 %)	0 (0%)	14 (42.42 %)	1 (100%)	2 (66.67 %)	5 (41.67 %)	29 (39.19%)	0.619*
Dysarthria	1 (6.67%)	0 (0%)	0 (0%)		0 (0%)	0 (0%)	1 (8.33%)	4 (5.41 %)	1*

Table 4: Association of risk factors with radiological findings in posterior circulation

Risk factors	Occipital (n=4)	Mid brain(n=1)	Pons(n=9)	Medulla (n=1)	Cerebellum(n=15)	Total	P value
Smoking	2 (50%)	0 (0%)	5 (55.56 %)	1 (100%)	6 (40%)	14 (46.67%)	0.866*
Systemic hypertension	1 (25%)	1 (100%)	7 (77.78 %)	0 (0%)	11 (73.33%)	20 (66.67%)	0.139*

Diabete s mellitus	2 (50%)	0 (0%)	1 (11.11 %)	0 (0%)	7 (46.67%)	10 (33.3 3%)	0.3 05*
High plasma lipid	2 (50%)	0 (0%)	3 (33.33 %)	0 (0%)	5 (33.33%)	10 (33.3 3%)	0.9 44*
Alcohol	1 (25%)	1 (100%)	1 (11.11 %)	0 (0%)	2 (13.33%)	5 (16.6 7%)	0.3 45*
Atrial fibrillat ion	0 (0%)	0 (0%)	1 (11.11 %)	0 (0%)	1 (6.67%)	2 (6.67 %)	1*
Corona ry artery disease	2 (50%)	0 (0%)	2 (22.22 %)	0 (0%)	4 (26.67%)	8 (26.6 7%)	0.8 48*

Table 5: Association of symptoms with radiological findings in posterior circulation

Sympto ms	Occipita l(n=4)	Mid brain(n=1)	Pons(n=9)	Medulla(n=1)	Cerebellu m(n=15)	Total	P value
Headac he	3 (75%)	1 (100%)	3 (33.33%)	0 (0%)	7 (46.67%)	14 (46.67 %)	0.428*
Vertigo	2 (50%)	1 (100%)	4 (44.44%)	0 (0%)	9 (60%)	16 (53.33 %)	0.866*
Nausea, vomitin g	0 (0%)	1 (100%)	5 (55.56%)	0 (0%)	7 (46.67%)	13 (43.33 %)	0.213*
Seizure	2 (50%)	0 (0%)	1 (11.11%)	0 (0%)	2 (13.33%)	5 (16.67 %)	0.516*
Ataxia	1	1	0	0	7	9	0.029*
	(25%)	(100%)	(0%)	(0%)	(46.67%)	(30%)	
Aphasia	0 (0%)	0 (0%)	4 (44.44%)	0 (0%)	3 (20%)	7 (23.33 %)	0.517*
Altered sensoriu m	3 (75%)	0 (0%)	7 (77.78%)	0 (0%)	5 (33.33%)	15 (50%)	0.076*
Hemi sensory loss	2 (50%)	1 (100%)	3 (33.33%)	1 (100%)	3 (20%)	10 (33.33 %)	0.177*
Dysarth ria	1 (25%)	0 (0%)	2 (22.22%)	0 (0%)	5 (33.33%)	8 (26.67 %)	0.922*
Swallo wing difficult y	0 (0%)	0 (0%)	4 (44.44%)	1 (100%)	4 (26.67%)	9 (30%)	0.247*
Quadrip aresis	0 (0%)	0 (0%)	4 (44.44%)	0 (0%)	1 (6.67%)	5 (16.67 %)	0.146*
Hemipa resis or hemiple gia	3 (75%)	1 (100%)	5 (55.56%)	1 (100%)	6 (40%)	16 (53.33 %)	0.565*
Nystag mus	0 (0%)	0 (0%)	3 (33.33%)	0 (0%)	4 (26.67%)	7 (23.33 %)	0.828*
Diplopi a	2 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (6.67%)	0.034*
Cross hemiple gia	0 (0%)	0 (0%)	2 (22.22%)	0 (0%)	1 (6.67%)	3 (10%)	0.767*
7th cranial nerve	0 (0%)	0 (0%)	2 (22.22%)	0 (0%)	1 (6.67%)	3 (10%)	0.767*
Visual field defect	3 (75%)	1 (100%)	2 (22.22%)	0 (0%)	2 (13.33%)	8 (26.67 %)	0.046*

DISCUSSION

The study was conducted in Department of Medicine at Netaji Subhash Chandra Bose Medical College & Hospital, Jabalpur (M.P.). 104 patients above 14 years old admitted in General Medicine ward with abrupt onset of a focal neurological deficit of vascular origin (ischemic) and persisted for more

than 24 hours were included in the study. Risk factors and clinical profile in Anterior and Posterior circulation ischemic stroke were assessed.

The stroke is leading cause of neurological disease in adult life. By knowing the prevalence of risk factors in both stroke subtypes, and their clinical feature we can improve the primary and secondary preventative strategies. Cerebrovascular diseases rank first in frequency amongst adult neurological diseases. It is important to understand the risk factors associated with stroke subtypes in order to improve primary and secondary preventative strategies. Since nowadays both stroke subtypes tend to be considered as separate entities because both have different underlying pathogenesis, natural histories, risk factors and clinical feature and responsiveness to treatment.

The study results showed that the distribution of smoking, systemic hypertension, diabetes mellitus, alcohol, atrial fibrillation, coronary artery disease was comparable with radiological findings in anterior circulation {Basal ganglia vs Frontal and Parietal vs Frontal vs Internal capsule vs Parietal vs Parietal and temporal vs Temporal}. (Smoking: 33.33% vs 0.00% vs 26.67% vs 0.00% vs 14.29% vs 48.48% vs 33.33% respectively (p value=0.416), Systemic hypertension: 41.67% vs 100.00% vs 53.33% vs 66.67% vs 85.71% vs 69.70% vs 33.33% respectively (p value=0.324), Diabetes mellitus: 33.33% vs 0.00% vs 26.67% vs 33.33% vs 28.57% vs 33.33% vs 66.67% respectively (p value=0.933). Proportion of patients with high plasma lipid was significantly higher in parietal (42.86%) (p value=0.023). This was consistent with the findings of Lee et al5 studies Mousavi et al6 found that smoking as a stroke risk factor mainly by large-artery atherosclerosis. Smoking may also contribute to stroke in the younger population. In study done by Subramanian et al,[7] El sherif et al,[8] smoking as risk factor is more prevalent in posterior circulation stroke as compared to anterior circulation similar to present study.

Neuroimaging remains a cornerstone of stroke diagnosis, particularly in differentiating between ACS and PCS. In this study, the clinical diagnosis based on symptom complexes had a sensitivity of 95.16% and a specificity of 77.14% for ACS, while for PCS, sensitivity was 92.86% and specificity was 94.20%. These results underscore the importance of clinical assessment in conjunction with radiological confirmation. However, the study also highlights that clinical diagnosis alone can be insufficient, particularly for PCS, where brainstem and cerebellar strokes are often missed on clinical grounds alone,[9]

The use of computed tomography (CT) and magnetic resonance imaging (MRI) in this study was consistent with current standards for AIS diagnosis. Radiological confirmation of ACS showed lesions predominantly in the middle cerebral artery (MCA) territory, whereas PCS was associated with infarcts in the posterior cerebral artery (PCA) and vertebrobasilar systems. The high sensitivity of imaging techniques like diffusion-weighted imaging (DWI) and CT angiography (CTA) is particularly valuable in diagnosing posterior circulation strokes, which often present without overt neurological deficits.[10,11]

The findings from this study are in line with previous research on the differences between ACS and PCS. Elodie Zurcher et al,[12] found that PCS patients typically have lower National Institutes of Health Stroke Scale (NIHSS) scores on admission and are more likely to present with cognitive symptoms, vestibulo-cerebellar signs, and visual disturbances, whereas ACS patients exhibit higher NIHSS scores and more severe motor deficits. Similarly, De Marchis et al,[13] reported that patients with PCS tend to have more subtle symptoms, which leads to diagnostic challenges, and they advocate for aggressive use of imaging in patients with ambiguous clinical presentations.

CONCLUSION

The present study, within its limitations, concludes that ACS and PCS have varying radiological profiles. ACS primarily presents with motor deficits, whereas, PCS has characteristic of non-motor symptoms such as visual disturbances, headache, and ataxia. Radiological imaging remains vital for confirming the diagnosis, especially in subjects with PCS. Early identification and targeted therapy can improve outcomes in stroke subjects, which emphasize on the need for detailed clinical and imaging assessments in stroke management.

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