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Persistent headache attributed to past ischemic stroke: it characteristics and stroke features

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Objective

Persistent headache attributed to past ischemic stroke (PHAPIS) is, according to the International Classification of Headache Disorders, a headache previously diagnosed as acute headache attributed to ischemic stroke (AHAIS) that persisted for >3 months after stabilization of the ischemic stroke (IS) symptoms. Our aims were to determine the incidence of PHAPIS, describe its characteristics and those associated with IS.

Methods

This was a prospective observational cohort study that evaluated consecutive patients at the time of emergency admission due to acute IS from July to September 2024 for the diagnosis of AHAIS and subsequently, after at least 3 months of stabilization of IS symptoms, in order to question about the persistence of headache, as well as its characteristics, through a semi-structured questionnaire. Information about IS was also collected from medical records, such as the National Institutes of Health Stroke Scale (NIHSS), neuroimaging, Trial of ORG 10172 in Acute Stroke Treatment classification, Oxfordshire Community Stroke Project classification and Modified Rankin Scale (mRS). All patients signed the informed consent form. The present study was approved by the Research Ethics Committee at the Santa Casa de Misericórdia de Porto Alegre Hospital (approval number: 6.881.540).

Results

This study included 52 patients who were hospitalized due to acute IS, 15 (28.8%) of them were diagnosed with AHAIS. Of these, 4 (26.7%) persisted with headache after 3 months, majority male (75%) and mean age 53.8 (±10.1) years. The pain was predominantly pulsatile (63.7%), of moderate intensity (75%), unilateral (75%) and located in the temporal region (36.3%). The 4 patients with PHAPIS presented episodic pain and none of them had medication-overuse headache. Regarding IS, half of the patients presented NIHSS ≤5, and the majority had large vessel atherosclerosis as the etiology (75%) and partial involvement of the anterior circulation (75%). Furthermore, at the time of discharge, 50% of these patients presented mRS ≤2.

Conclusion

The incidence of PHAPIS found among patients with AHAIS was significant, especially considering the large global impact of stroke. Although none of the patients presented pain classified as chronic or medication overuse headache in this study, using stroke characteristics to identify PHAPIS early and treat it appropriately will reduce another factor that negatively impacts quality of life, especially in patients with minor strokes and mild disability.

Table 1 - Characteristics of pain and stroke in patients diagnosed with persistent headache attributed to past ischemic stroke (PHAPIS)

Characteristics of PHAPIS			
		PHAPIS (N=4)	
Type			
Throbbing		3 (75%)	
Stabbing		0	
Tightness		0	
Pressure		1 (25%)	
Intensity			
Mild		0	
Moderate		3 (75%)	
Severe		1 (25%)	
Location			
Temporal		1 (25%)	
Parietal		0	
Frontal		1 (25%)	
Frontotemporal		1 (25%)	
Occipital		0	
Hemicrania		1 (25%)	
Side			
Unilateral		3 (75%)	
Bilateral		1 (25%)	
Accompanying symptoms			
Nausea and vomiting		2 (50%)	
Photophobia		1 (25%)	
Phonophobia		1 (25%)	
None		2 (50%)	
Medication-overuse			
Yes		0	
No		4 (100%)	
Stroke characteristics			
	Not PHAPIS (n=11)	PHAPIS (N=4)	P value
NIHSS score ≤ 5			0.51
Yes	9 (81.8%)	2 (50%)	
No	2 (18.2%)	2 (50%)	
TOAST			0.7
Large Artery Atherosclerosis	3 (27.3%)	2 (50%)	
Cardioembolism	3 (27.3%)	1 (25%)	
Small Vesses Disease	1 (9.1%)	0	
Other Determined Etiology	0	0	
Investigation not completed	4 (36.3%)	1 (25%)	
OCSP			0.3
PACI	4 (36.3%)	3 (75%)	
POCI	3 (27.3%)	1 (25%)	
LACI	4 (36.3%)	0	
TACI	0	0	
mRS at discharge			0.5
≤ 2	9 (81.8%)	2 (50%)	
> 2	2 (18.8%)	2 (50%)	

Medication-overuse was considered ≥ 15 days per month of use of common analgesics, and/or use ≥ 10 days a month of ergotamine, triptans, opioids and/or combined use of analgesics for at least 3 months. Abbreviations: N/A = not evaluated; NIHSS = National Institutes of Health Stroke Scale; TOAST = Trial of ORG 10172 in Acute Stroke Treatment; OCSP = Oxfordshire Community Stroke Project; PACI = partial anterior circulation infarction; POCI = posterior circulation infarction; LACI = lacunar infarction; TACI = Total Anterior Circulation Infarction; mRS = Rankin's modified scale.

Disclosure of Interest

None

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Acute headache attributed to ischemic stroke: pain characteristics and features associated with ischemic stroke

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Objective

Acute headache attributed to ischemic stroke (AHAIS) is, according to the International Classification of Headache Disorders, a new headache caused by an acute ischemic stroke (AIS) and associated with focal neurological signs. It should resolve within 3 months after the symptoms of the AIS have stabilized. Our aims were to determine the incidence of AHAIS, and describe its characteristics and those associated with AIS.

Methods

A cross-sectional observational study was conducted to evaluate consecutive patients admitted to a public emergency department due to AIS from July to September 2024. Patients were asked about the onset of an acute new headache within the first 24 hours of AIS symptoms onset, as well as its characteristics, using a semi-structured questionnaire. In addition, information regarding AIS was collected from medical records, such as the National Institutes of Health Stroke Scale (NIHSS), neuroimaging, the Trial of ORG 10172 in Acute Stroke Treatment classification and the Oxfordshire Community Stroke Project classification.

Results

During the study period, 72 patients were admitted to the emergency department due to AIS and 20 of them were excluded, mainly due to decreased consciousness (40%) and severe aphasia (40%). Of the 52 patients included, 31 denied headache, 6 (11.5%) reported pain similar to a previously existing headache and 15 (28.8%) presenting a new acute headache considered AHAIS. The patients diagnosed with AHAIS were majority male (60%) with mean age of 67.5 (± 12.3) years. The pain was pulsating (73.3%), unilateral (53.4%), moderate intensity (53%) and located in the temporal region (33.3%), with associated symptoms on 40% of cases. Regarding the characteristics of AIS, most presented NIHSS ≤ 5 (73.3%), large vessel atherosclerosis etiology (33.3%) and there was predominantly partial involvement of the anterior circulation (46.6%).

Conclusion

Considering the large occurrence of AIS globally, the incidence of acute headache attributed to ischemic stroke should not be ignored. Because it is rarely a prominent symptom in stroke, knowledge of the main characteristics of stroke that are related to AHAIS and the characteristics of the pain itself can help identify patients with this headache and treat them appropriately.

Disclosure of Interest

None

Table 1 - Characteristics of pain and stroke in patients diagnosed with acute headache attributed to ischemic stroke (AHAIS)

Characteristics of AHAIS			
		AHAIS (N=15)	
Type			
Pulsatile		10 (73.3%)	
Stabbin		2 (13.3%)	
Tightness		1 (6.7%)	
Pressure		1 (6.7%)	
Intensity			
Mild		1 (6.7%)	
Moderate		8 (53.3%)	
Severe		6 (40%)	
Location			
Temporal		5 (33.3%)	
Parietal		3 (20%)	
Frontal		3 (20%)	
Frontotemporal		2 (13.3%)	
Occipital		1 (6.7%)	
Hemicrania		1 (6.7%)	
Side			
Unilateral		8 (53.3%)	
Bilateral		7 (46.7%)	
Accompanying symptoms			
Nausea and vomiting		6 (40%)	
Photophobia		2 (13.3%)	
Phonophobia		2 (13.3%)	
None		9 (60%)	
Stroke characteristics			
	Not AHAIS (N=37)	AHAIS (N=15)	P value
NIHSS score ≤ 5			1
Yes	27 (73%)	11 (73.1%)	
No	10 (27%)	4 (26.9%)	
TOAST			0.65
Large Artery Atherosclerosis	5 (13.5%)	5 (33.3%)	
Cardioembolism	7 (18.9%)	4 (26.7%)	
Small Vesses Disease	2 (5.4%)	1 (6.67%)	
Other Determined Etiology	1 (2.7%)	0	
Investigation not completed	22 (59.5%)	5 (33.3%)	
OCSP			0.2
PACI	8 (21.6%)	7 (46.6%)	
POCI	8 (21.6%)	4 (26.7%)	
LACI	20 (54.1%)	4 (26.7%)	
TACI	1 (2.7%)	0	
mRS at discharge			0.75
≤ 2	25 (67.6%)	11 (73.3%)	
> 2	12 (32.4)	4 (26.7%)	

Abbreviations: N/A = not evaluated; NIHSS = National Institutes of Health Stroke Scale; TOAST = Trial of ORG 10172 in Acute Stroke Treatment; OCSP = Oxfordshire Community Stroke Project; PACI = partial anterior circulation infarction; POCI = posterior circulation infarction; LACI = lacunar infarction; TACI = Total Anterior Circulation Infarction; mRS = Rankin's modified scale.