



## FREQUENCY OF STRUCTURAL BRAIN LESION IN PATIENTS PRESENTING WITH NON-FOCAL DEFICIT HEADACHE ON CT BRAIN

Madiha Dar, Ayesha Bibi and Hozaifa Iqbal\*

Sir Ganga Ram Hospital, Lahore.

\*Corresponding Author: Hozaifa Iqbal

Sir Ganga Ram Hospital, Lahore.

Article Received on 22/09/2018

Article Revised on 12/09/2018

Article Accepted on 02/10/2018

### ABSTRACT

**Objective;** To determine structural brain lesions on CT in cases with non-focal deficit headache. **Methods;** This study was carried out at Medicine department of Sir Ganga Ram Hospital, Lahore during January to June 2018. Hundred cases in this cross sectional study were selected via non probability consecutive sampling irrespective of gender and age. The headache was labelled as yes where there was pain of more than 3 on visual analogue scale without any focal sensory, motor or cranial nerve deficit lasting at least more than 1 month. These cases then underwent CT brain without contrast and the findings of the CT scans were noted. **Results;** In the present study hundred cases presenting with non focal deficit headache were selected. There were 56% females and 44% males with mean age of  $57.23 \pm 10.31$  years and mean duration of headache as  $2.34 \pm 0.67$  months. Any type of lesion was detected in 29% of the cases and among them sinusitis was the most common seen in 22% of the over all cases followed by CSOM in 5%. SOL and brain abscess was seen in 1% of the cases each. **Conclusion;** Structural brain lesions are not uncommon in cases with non focal deficit of more than one month; though sinusitis was the most common finding.

**KEYWORDS:** Headache, Sinusitis.

### INTRODUCTION

Headache is amongst the most common presentation in the medical and neurology clinics and is a type of symptom that everyone must have experience once or more in their life ever. It can be subtle finding or can be a red alarm sign to reveal a very fatal underlying disease. There are usually few of the warning signs like focal neurological deficit, slurring of the speech, seizures, tenderness or cranial nerve abnormalities that can direct a serious underlying cause.<sup>[1]</sup>

In contrast to all those headaches that have an underlying causes called as secondary headache, majority of the cases don't reveal any symptom and hence pose a great diagnostic challenge. Furthermore, the treating physicians have immense pressure to advise more laboratory or radiological investigations to look for the etiology.<sup>[2,3]</sup>

Computed tomography (CT) and magnetic resonance imaging (MRI) are the most common used modalities to look for underlying causes; though the data has shown to reveal more of the benign lesions in cases without red flag signs.<sup>[4,7]</sup>

A large review of 3026 scans of patients with headache assessed by CT brain showed only a minority of patients suffered from a serious disease accounting for only 2.8% in the form of brain tumors, arteriovenous malformations, hydrocephalus, aneurysm, subdural hematoma strokes and malignancies.<sup>[8]</sup>

**OBJECTIVE:** To determine structural brain lesions on CT in cases with non-focal deficit headache.

### MATERIALS AND METHODS

This study was carried out at Medicine department of Sir Ganga Ram Hospital, Lahore during January to June 2018. Hundred cases in this cross sectional study were selected via non probability consecutive sampling irrespective of gender and age. The headache was labelled as yes where there was pain of more than 3 on visual analogue scale without any focal sensory, motor or cranial nerve deficit lasting at least more than 1 month. These cases then underwent CT brain without contrast and the findings of the CT scans were noted.

### Statistical analysis

SPSS-23 was used to analyze the data and frequency and percentages were presented for categorical data and mean and SD for numerical data.

## RESULTS

In the present study hundred cases presenting with non focal deficit headache were selected. There were 56% females and 44% males with mean age of  $57.23 \pm 10.31$  years and mean duration of headache as  $2.34 \pm 0.67$  months (table 1). Any type of lesion was detected in 29% of the cases and among them sinusitis was the most common seen in 22% of the over all cases followed by CSOM in 5%. SOL and brain abscess was seen in 1% of the cases each as in table 2.

**Table 01; Demographics of study subjects (n=100).**

	Number	%age
Male	44	44
Female	56	56
	Mean $\pm$ SD	Range
Age (years)	$57.23 \pm 10.31$	13-70
Duration of headache (months)	$2.34 \pm 0.67$	1-6

**Table 01; Type of lesions detected on CT (n= 100).**

Type of lesion detected	Number	percentages
Normal	71	71%
Sinusitis	22	22%
CSOM	5	5%
Brain abscess	1	1%
SOL	1	1%
<b>TOTAL</b>	<b>100</b>	<b>100%</b>

## DISCUSSION

Headaches is one of the most annoying symptoms and in cases of primary headaches, the underlying pathophysiology is unclear and pose a great stress to the patients and ultimately warrant a high degree of investigations demand to look for any underlying cause and in majority of the cases; absence of any positive finding is reassuring.

In the present study, 100 cases were selected and out of these 71 (71%) of the cases revealed a normal CT scan. These results were close to the findings of the past studies. Fazel R et al, in their similar sort of the study showed 90% of the cases with normal CT scan and serious or benign lesions were found to be in only 10% of the cases.<sup>[9]</sup> The results were bit on higher side in cases where any of the mild sign was present along with headache and positive findings were seen in 35.7% had finding.<sup>[10]</sup> In Nepalese study, the cases with no signs of focal deficit and having headache, 73% of the cases had normal CT.<sup>[11]</sup>

In the present study sinusitis was the most common finding and was seen in 22% of the over all cases followed by CSOM in 5%. This was similar to study done by Rai GS et al that conducted on 500 cases with headache and 374 had normal CT, while sinusitis was the most common finding affecting 58 cases and 13 with CSOM abscess were seen in 10 and SOL in 5 cases.<sup>[12]</sup>

## CONCLUSION

Structural brain lesions are not uncommon in cases with non focal deficit of more than one month; though sinusitis was the most common finding.

## REFERENCES

- Peters KS. Secondary headache and head pain emergencies. *Primary Care*, 2004; 31(2): 381-93.
- Headaches. Different types of headaches [internet]. 2016 [cited on 15-06-2016]. Available at [www.webmd.com/migraines-headaches/guide/migraines-headaches-basics](http://www.webmd.com/migraines-headaches/guide/migraines-headaches-basics).
- Kernick DP, Ahmed F, Bahra A, Dowson A, Elrington G, Fontebasso M, et al. Imaging patients with suspected brain tumour: guidance for primary care. *Brit J Gen Pract*, 2008; 58(557): 880-85.
- Diener HC, Katsarava Z, Weimar C. Headache associated with ischemic cerebrovascular disease. *Rev Neurol*, 2008; 164: 819–24.
- Nepal P, Shrestha A, Ghimire N. Evaluation of CT scan findings in patients presenting with headache. *J Chitwan Med Coll.*, 2014; 3(4): 9-12.
- Sun Z, Ng KH, Vijayanathan A. Is utilization of computed tomography justified in clinical practice?: application in the emergency department. *Singapore Med J.*, 2010; 51(3): 200-06.
- Nabhani KA, Kakaria A, Syed R. Computed tomography in management of patients with non-localizing headache. *Oman Med J.*, 2014; 29(1): 28–31.
- Evans RW. Diagnostic testing for the evaluation of headaches. *Neurol Clin.*, 1996; 14(1): 1-26.
- Fazel R, Krumholz HM, Wang Y, Ross JS, Chen J, Ting HH, et al. Exposure to low-dose ionizing radiation from medical imaging procedures. *N Engl J Med*, 2009 Aug; 361(9): 849-857.
- Aygun D, Bildik F. Clinical warning criteria in evaluation by computed tomography the secondary neurological headaches in adults. *European Journal of Neurology*, 2003; 10(4): 437-42.
- Nepal P, Shrestha A, Ghimire N. Evaluation of CT Scan Findings in Patients Presenting with Headache. *Journal of Chitwan Medical College*, 2014; 3(4): 9-12.
- Rai GS, Rai T, Jain L, Vyas MM, Roshan R. Evaluation of CT and MRI findings among patients presented with chief complaint of headache in central India. *J Clin Diag Res.*, 2016; 10(2): 21-25.