



# Drug-Resistant Epilepsy and Headache: a case-control study

**Paulo Bogdan Sanson, Marina T. Dalio, Ricardo L. Saute, Frederico Nakano, Veriano A. Junior, Fabíola Dach**

Clinical Hospital of Ribeirão Preto, School of Medicine, University of São Paulo

## OBJECTIVE

To compare clinical features between patients with epilepsy with and without headache.

## METHODS

One hundred patients, between 18 and 65 years old, were selected from a drug-resistant epilepsy (DRE) clinic, and equally divided into two groups: G1-patients with DRE and at least 1 headache attack per month, and G2- patients with DRE without headaches in the last 6 months.

Two questionnaires were developed to collect data, and the WHOQOL-bref was applied for the quality of life evaluation.

### Inclusion Criteria:

- At least 1 episode of headache per month in the last 6 months (only for G1);
- Undergoing pharmacological treatment for epilepsy for at least 6 months;
- Age range between 18 and 65 years old;
- Both sexes;

### Exclusion Criteria:

- Patients undergoing neurosurgery;
- Patients with epilepsy secondary to injury that may elevate intracranial pressure or to intracranial vascular malformation;
- Unable to discern their actions;
- Refusal to participate;

## RESULTS

The only demographic difference between the groups was the higher presence of women in G1 (table 1). In G1, the seizures began earlier in life in relation to headache.

Diagram 1 illustrates the distribution of headache types in relation of the seizure (pre-, post-, and interictal), as well as the diagnoses of migraine and tensional type headache, and the incidence of chronic headache.

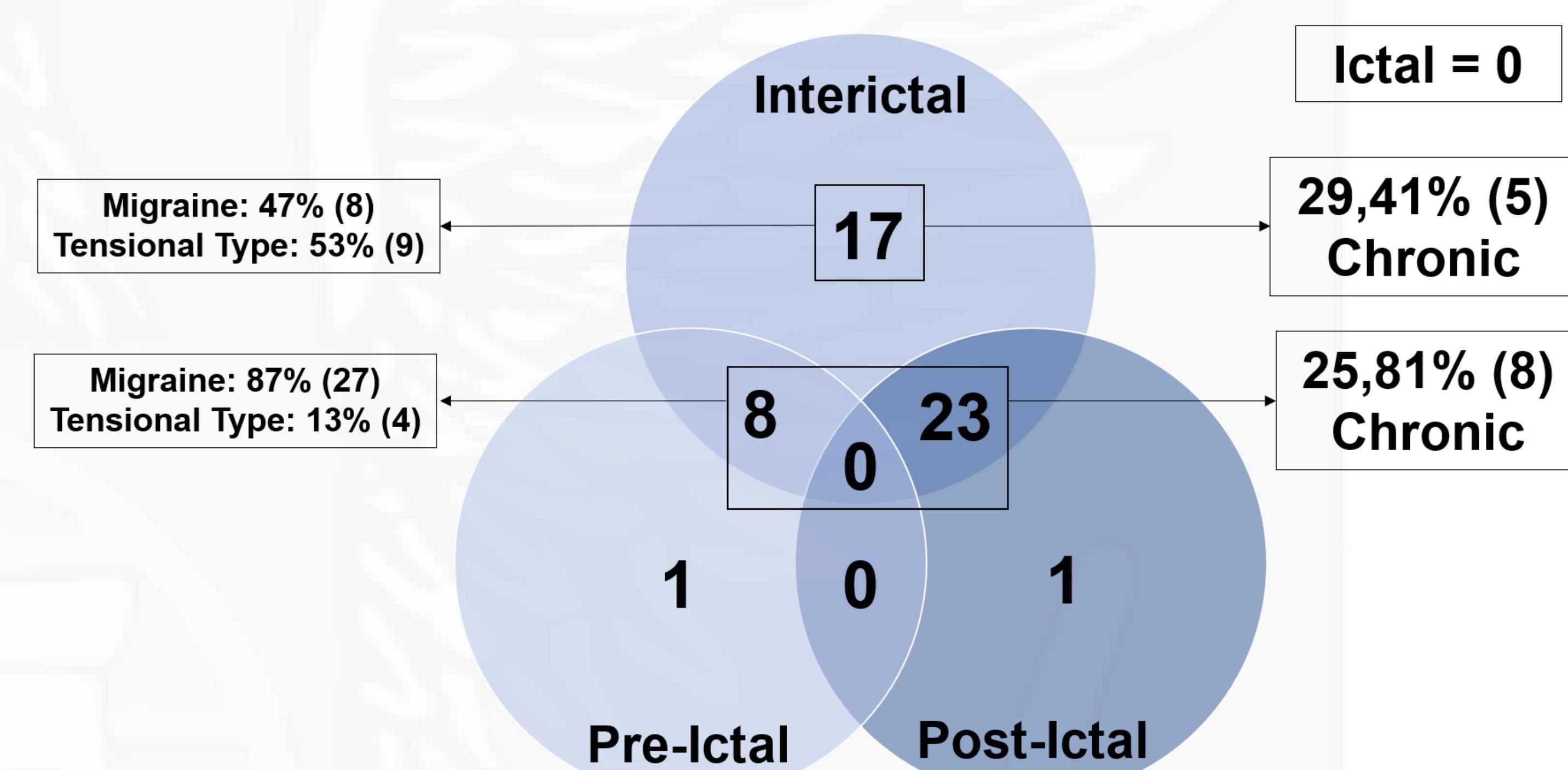
Interictal headache was the most prevalent type, affecting 48 patients, with the majority of these individuals (31) experiencing both interictal headache and other types of headaches. Interictal headache was diagnosed as migraine in the majority of cases. Chronic headache was observed in 13 patients.

There were no differences between groups regarding antiseizure medications, except for the levetiracetam, that was more frequent in G2.

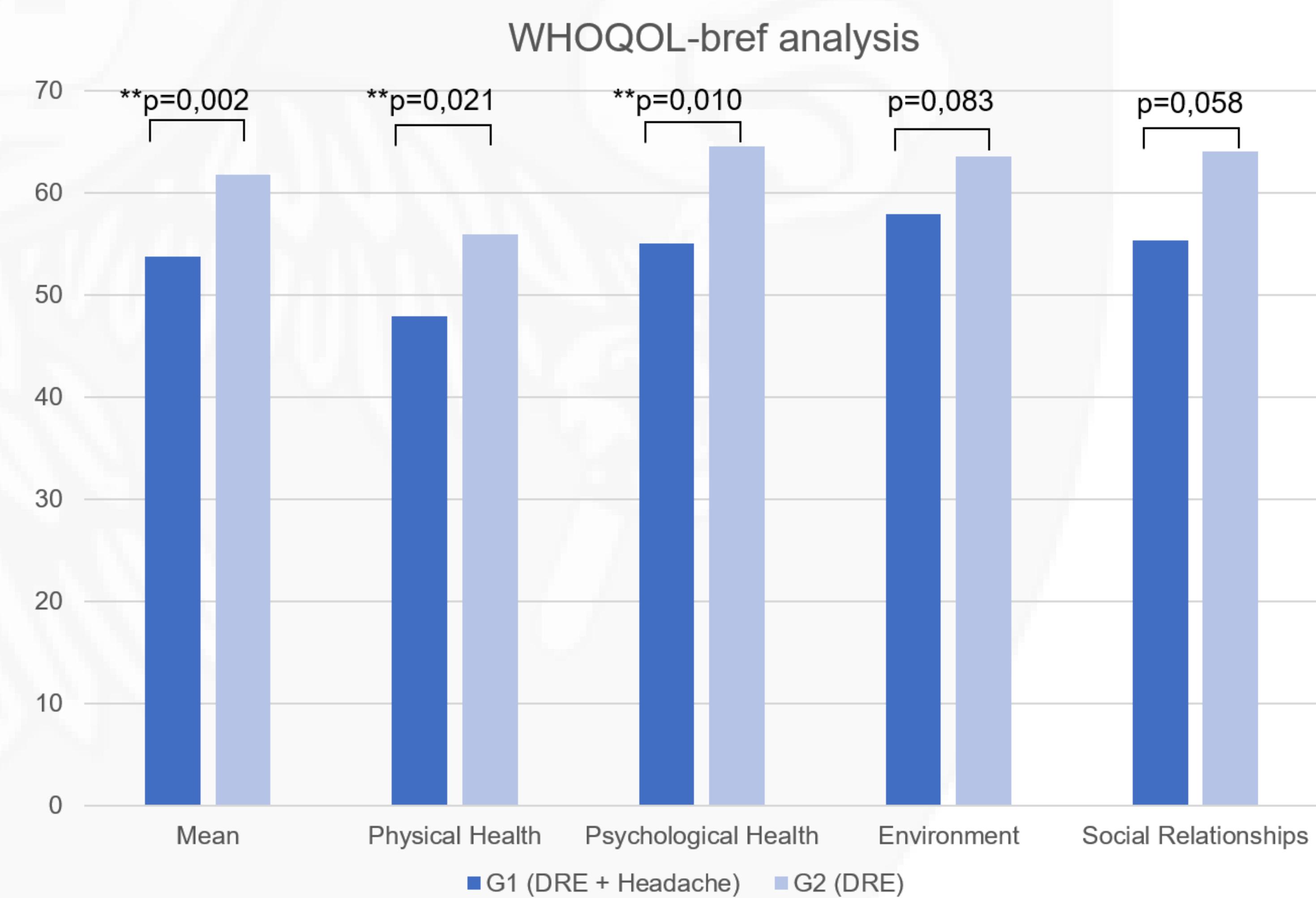
In relation to quality of life (graphic 1), G1 showed a worse mean quality of life, and also a worse quality of life in psychological and physical health domains.

Feature	G1: DRE + Headache	G2: DRE	Total	P-value
Female	28 (56%)	14 (28%)	42 (42%)	0.005
Mean age	39.1	40.9	40	0.416
Mean age epilepsy	13.7	10.2	11.96	0.930
Mean age headache	19.2	-	-	-
Seizure Type:				
Focal	90%	82%	86%	0.535
Generalized	6%	12%	9%	
Focal e Generalized	0%	2%	1%	
Unclassified	4%	4%	4%	

**Table 1:**  
Comparison of descriptive data between groups 1 and 2.



**Diagram 1:** Universe of 50 patients. Distribution of headache types in relation to seizures. Incidence of chronic headache, and frequency of migraine and tension-type headache diagnoses.



**Graphic 1:** Comparison between average quality of life and quality of life by domain between groups. Data obtained through analysis of responses to the WHOQOL-bref questionnaire.

## CONCLUSION

Migraine and chronic headache were frequent in patients with DRE and headache. The presence of headache negatively impact the quality of life of patients with DRE. Despite the use of other medications that treat headache, only levetiracetam was more frequent between those without headache.

## REFERENCES

1. Jensen R, Stovner LJ. Epidemiology and comorbidity of headache. Lancet Neurol 2008;7:354–61.
2. International Headache Society. The International Classification of Headache Disorders, 3rd edition Cephalgia 2018, Vol. 38(1) 1–211.
3. Moskowitz MA. Basic mechanisms in vascular headache. Neurol Clin 1990;8:801-815