



**GLOBAL  
MIGRAINE &  
PAIN SUMMIT**

**6<sup>th</sup> MENA  
Meeting**

**4<sup>th</sup> Turkish African  
Meeting of  
Headache and Pain  
Management**



**ABSTRACT  
BOOK**



## **CONTENTS**

<b>INVITATION</b>	<b>3</b>
<b>SCIENTIFIC COMMITTEE</b>	<b>4</b>
<b>SCIENTIFIC PROGRAM</b>	<b>6</b>
<b>ORAL PRESENTATIONS</b>	<b>10</b>
<b>POSTER PRESENTATIONS</b>	<b>54</b>

*Dear Friends,*

*In these sensitive days, our guide could be science only, to protect the health all over the world. We focused on current headache science for everyone and worked together without any borders or barriers. Despite the troubles related to pandemics, we could meet with more than fifty countries and more than 1500 colleagues on the same scope in the previous MENA meetings. We aimed to discuss headache disorders and some parts of other pain disorders for practical approach, especially taking the poor resources and other realities of the MENA regions and eastern Asia, as well. This year we plan to enrich our program with case-based discussions, model-based workshops and update sessions for ensuring current scientific approach and practical tips provided by important headache experts. Additionally, we want to widen our perspective with roundtable workshops about ongoing projects and new areas will be created altogether.*

*With qualified technical support, we want to share with you another hybrid congress experience. All of the discussion sessions will be as long as possible for taking your comments and answering your questions together with filtered insights of the valuable experts. As in the previous year, we are grateful to the International Headache Society for valuable support and endorsement of the meeting. We also appreciate all of our industrial sponsors and other kind supports to the meeting.*

*Finally, we hope that you will find a way to come in person to Antalya for inspiring Turkish hospitality, Turkish Cuisine, and the unique atmosphere of Antalya on the Mediterranean coast.*

*We are looking forward to seeing you...*

*On behalf of the organizing and Scientific Committee*

*Prof. Dr. Aynur Özge*

*President of the Congress*

## SCIENTIFIC COMMITTEE

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*Dr. Meltem UYAR*

*Dr. Doğa VURALLI*



## 2 NOVEMBER, WEDNESDAY

14.00-14.15

### Opening Remarks

Aynur Özge (Turkey), Cristina Tassorelli (Italy)



14.15-15.45

### PANEL-1 Migraine: Behind The Scenes

**Chairs** Shu-Jiun Wang (Taiwan), Hayrunnisa Bolay (Turkey)

14.15-14.35

Is there any reliable biomarker for migraine? **Cristina Tassorelli (Italy)**

14.35-14.55

Unmet needs in migraine treatment? **Shu-Jiun Wang (Taiwan)**

14.55-15.15

Functional alterations of sensory integration in migraine **Hayrunnisa Bolay (Turkey)**

15.15-15.45

Discussion

15.45-16.15

### Coffee Break



16.15-17.00

### UPDATE-1 Novel Therapies In Migraine

**Chairs** Cristina Tassorelli (Italy), Betül Baykan (Turkey)

**SPEAKER** Messoud Ashina (Denmark)

17.00-18.00

### WORKSHOP-1 Collaborative Research On Headache In Mena Region

**Chairs** Krishna Kumar Oli (Nepal), Najib Kissani (Morocco)

Short Presentations Of Completed Projects And Ongoing Projects

**Amr Hassan (Egypt)**

**Augustina Charway-Felli (Gana)**

**Rajeev Ojha (Nepal)**

**Thierry Adoukonou (Benin)**

**Abubaker Al Madani (Abu Dhabi)**

**Otgonbayar Luvsannorov (Mongolia)**

**Mansoureh Togha (Iran)**



## 3 NOVEMBER, THURSDAY

09.00-10.45	<b>PANEL-2</b>	<b>Case Based Session: The Main Differential Diagnostic Perspective Of Migraine</b>
09.00-09.15	<b>Chairs</b>	<b>Amr Hassan (Egypt), Necdet Karlı (TURKEY)</b>
09.15-09.30		Does my patient have seizures, or migrainous aura? <b>Betül Baykan (Turkey)</b>
09.30-09.45		Is this headache a TTH attack or migraine? <b>Necdet Karlı (Turkey)</b>
09.45-10.00		Is this attack a BPPV, ménière disease or a vestibular migraine? <b>Gülden Akdal (Turkey)</b>
10.00-10.45		Does my patient experience a TIA or migraine with aura? <b>Amr Hassan (Egypt)</b>
		Discussion
10.45-11.00		<b>Coffee Break</b> 
11.00-12.30	<b>PANEL-3</b>	<b>Case Based Session 2: Lifetime Diagnostic Challenges Of Atypical Headache Manifestations</b>
11.00-11.15	<b>Chairs</b>	<b>Ishaq Abu Arafah (Scotland), Füsün Mayda Domaç (Turkey)</b>
11.15-11.30		Could this abdominal discomfort in my kid be a migraine? <b>Ishaq Abu Arafah (Scotland)</b>
11.30-11.45		What is the cause of increased intracranial pressure in my young female patient? <b>Rahşan Karacı (Turkey)</b>
11.45-12.30		Delirium or headache in the elderly? <b>Füsün Mayda Domaç (Turkey)</b>
		Discussion
12.30-13.15		<b>Lunch Break</b> 
13.15-14.00	<b>Chair</b>	<b>SATELLITE SYMPOSIUM</b> <i>Lilly</i> <b>Aynur Özge (Turkey)</b> <b>Galcanzumab in Preventive Treatment of Migraine; Real-Life Data</b> <b>Pınar Yalınay Dikmen (Turkey)</b> <b>Füsün Mayda Domaç (Turkey)</b>
14.00-16.00	<b>PANEL-4</b>	<b>Chronic Daily Headache And Medication Overuse Headache: Sustainable Solutions</b>
14.00-14.15	<b>Chairs</b>	<b>Hossein Ansari (USA), Elif Kocasoy Orhan (Turkey)</b>
14.15- 14.30		Increased awareness and mindfulness <b>Samiye Ulutaş (Turkey)</b>
14.30-14.45		Life style changes <b>Emel Ur Özçelik (Turkey)</b>
14.45-15.00		Diet recommendations for headache <b>Mansoureh Togha (Iran)</b>
15.00-15.15		Behavioral management strategies <b>Licia Grazzi (Italy)</b>
15.15-15.30		Relaxation or regular exercise <b>Reyhan Özgöbek (Turkey)</b>
15.30-15.45		Complementary medicine for reliable headache management <b>Mohsen Nasri (Iran)</b>
		Discussion
15.45-16.00		<b>Coffee Break</b> 
16.00-17.40	<b>UPDATE 2</b>	<b>Current And Future Perspective Of Headache Disorders</b>
16.00-16.20	<b>Chairs</b>	<b>Hayrunnisa Bolay (Turkey), Dimos Mitsikostas (Greece)</b>
16.20-16.40		A closer look at the premonitory phase of migraine <b>Peter Goadsby (UK)</b>
16.40-17.00		Anti-nociceptive mechanism of onabotulinum Toxin-A <b>Rami Burstein (USA)</b>
17.00-17.20		Novel mechanisms for food triggers and analgesic abuse <b>Doğa Vuralı (Turkey)</b>
17.20-17.40		Convergent glutamatergic mechanisms in migraine with aura <b>KC Brennan (US)</b>
		Discussion
17.40-18.40	<b>WORKSHOP 2</b>	<b>Turkic Linguistic Group Rountable Meeting &amp; Case Presentations</b>
	<b>Chairs</b>	<b>Esme Ekizoğlu (Turkey), Parvin Allahyarova (Azerbaijan)</b> <b>Short Presentations About Currently Completed And Ongoing Collaborative Projects</b>



## 4 NOVEMBER, FRIDAY

<b>09.00-10.30</b>	<b>PANEL-5</b>	<b>Case Based Session 3: How To Differentiate Secondary Causes Of Headaches?</b>
	<b>Chairs</b>	<b>Pınar Yalınay Dikmen (Turkey), Min Kyung Chu (South Korea)</b>
09.00-09.15		Cluster headache or a secondary cause? <b>Pınar Yalınay Dikmen (Turkey)</b>
09.15-09.30		Is it spontaneous intracranial hypotension or migraine? <b>Min Kyung Chu (South Korea)</b>
09.30-09.45		Trigeminal neuralgia or other primary headache disorders? <b>Dimos Mitsikostas (Greece)</b>
09.45-10.00		Is it migraine or posttraumatic headache? <b>Haidar Al-Khazali (Denmark)</b>
10.00-10.45		Discussion
<b>10.45-11.15</b>		<b>Coffee Break</b> 
<b>11.15-12.00</b>		<b>Oral Presentations</b>
		<b>Samiye Ulutaş (Turkey)</b>
		<b>Arife Çimen Atalar (Turkey)</b>
<b>12.45-13.30</b>		<b>Oral Presentations</b>
		<b>Emel Ur Özçelik (Turkey)</b>
		<b>Doğa Vuralı (Turkey)</b>
		
<b>13.30-15.00</b>	<b>PANEL-6</b>	<b>Case Based Session 4: Atypical Or Typical Cranio-facial Pain?</b>
	<b>Chairs</b>	<b>Gianluca Coppola (Italy), Macit Selekler (Turkey)</b>
13.30-13.45		TMJ dysfunction or chronic migraine or both? <b>Hossein Ansari (USA)</b>
13.45- 14.00		Atypical facial pain or dental pain? <b>Melis Yılmaz (Turkey)</b>
14.00-14.15		Is it chronic craniofacial pain or hemicrania continua? <b>Gianluca Coppola (Italy)</b>
14.15-15.00		Discussion
<b>15.00-15.30</b>		<b>Coffee Break</b> 
<b>15.30-17.00</b>	<b>PANEL-7</b>	<b>Minimalist Approach In Daily Practice With Headache Cases</b>
	<b>Chairs</b>	<b>Najib Kissani (Morocco), Ömer Karadaş (Turkey)</b>
15.30-15.45		Minimum equipment for headache diagnosis <b>Arife Çimen Atalar (Turkey)</b>
15.45-16.00		Effective abortive treatments <b>Abubaker Al Madani (Abu Dhabi)</b>
16.00-16.15		Sustainable preventive strategies <b>Kirill Skorobogatykh (Russia)</b>
16.15-16.30		Improving skills with interventions <b>Ömer Karadaş (Turkey)</b>
16.30-17.00		Discussion
<b>17.00-18:15</b>		<b>Oral Presentations</b>
		<b>Burcu Polat (Turkey)</b>
		<b>Esra Acıman Demirel (Turkey)</b>
		



## 5 NOVEMBER, SATURDAY

<b>09.15-11.00</b>	<b>PANEL-8</b>	<b>Interventional Management Of Headaches</b>
	<b>Chairs</b>	<b>Fayyaz Ahmed (UK), Işın Ünal Çevik (Turkey)</b>
09.15-09.30		Which drugs, which procedure, which case? <b>Işın Ünal Çevik (Turkey)</b>
09.30-09.45		Nerve blocks <b>Derya Uludüz (Turkey)</b>
09.45-10.00		Trigger point, dry needle injections <b>Devrimsel Harika Ertem (Turkey)</b>
10.00-10.15		Onabotulinum Toxin-A for migraine <b>Fayyaz Ahmed (UK)</b>
10.15-10.30		Other interventional approaches (RF, Acupuncture, Ozon) <b>Didem Akçalı (Turkey)</b>
10.30-10.45		Discussion
<b>10.45-11.00</b>		<b>Coffee Break</b> 
<b>11.00-12.00</b>	<b>WORKSHOP-3</b>	<b>Model Based Workshop For Interventional Procedures</b>
		<b>Derya Uludüz (Turkey)</b>
		<b>Ömer Karadaş (Turkey)</b>
		<b>Halil Çetingök (Turkey)</b>
		<b>Işın Ünal Çevik (Turkey)</b>
<b>12.00-12.30</b>		<b>Closing Remarks</b> 
		<b>Aynur Özge (Turkey)</b>
		<b>Esmek Ekizoğlu (Turkey)</b>

## ORAL 1

### **Insights into migraine patient characteristics and treatment patterns: Interim baseline results from the Treatment of migraine: outcomes for Patients in real-world Healthcare systems United Arab Emirates (TRIUMPH [UAE]) study**

Authors: Saygin Gonderten<sup>1</sup>, Soniya Rai<sup>1</sup>, Alper Erdogan<sup>1</sup>, Diego Novick<sup>2</sup>

Non-Author Presenter: Mustafa Iskender, Eli Lilly and Company, Istanbul, Turkey

<sup>1</sup> Eli Lilly and Company, Dubai, UAE <sup>2</sup> Eli Lilly and Company, Indianapolis, Indiana, USA

Financial relations: All authors are full-time employees and minor shareholders at Eli Lilly and Company.

#### Abstract text:

**Background:** Given the recent changes in the treatment landscape for migraine prevention, research on the real-world effectiveness, as well as treatment patterns, of patients in routine clinical care switching or initiating pharmacologic treatment is warranted.

**Aim:** Describe demographic and disease characteristics, as well as treatment patterns, of patients receiving migraine preventative treatment within the TRIUMPH [UAE] study with a focus on patients initiating galcanezumab.

**Method:** TRIUMPH is an ongoing, 24-month global observational study investigating migraine prevention. Eligible patients are  $\geq 18$  years, have a diagnosis of migraine, and are switching or initiating pharmacologic treatment for migraine prevention. Data were collected from October 17, 2021 to June 30, 2022 and are presented as Mean  $\pm$  standard deviation.

**Results:** In UAE, 102 patients aged  $35.7 \pm 9.26$  years were enrolled, among which 73 were females. Patients initiated galcanezumab (n=44), other calcitonin gene-related peptide monoclonal antibodies (n=14), oral standard of care (n=11), botulinum toxin A or B (n=4), other locally approved treatments (n=2), or were in process/yet to be classified (n=27). Enrolled patients reported  $12.7 \pm 6.82$  monthly migraine headache days,  $10.7 \pm 6.67$  monthly migraine headache days where acute pain medication was used, and comprised of 68/102 (66.7%) who met criteria for chronic migraine. For galcanezumab specifically, patients reported  $13.8 \pm 6.92$  monthly migraine headache days,  $11.9 \pm 7.27$  monthly migraine headache days where acute pain medication was used, and comprised of 38/44 (86.4%) who met criteria for chronic migraine.

**Conclusion:** Results from this observational study suggest that those patients initiating galcanezumab in the TRIUMPH [UAE] study are more severely impacted by migraine.

**Keywords:** migraine, preventive treatment, real-world evidence

## ORAL 2

## **RELATION OF CEREBROSPINAL FLUID PROTEIN CONCENTRATIONS WITH CLINICAL PARAMETERS IN IDIOPATHIC INTRACRANIAL HYPERTENSION**

İlhan Cansu KARABAŞ, M.D., Bekir Sami ÖZTÜRK, M.D., Rağsan KARACI, M.D.,

Prof.Füsun MAYDA DOMAÇ, M.D.,Msc

University of Health Sciences Erenköy Psychiatry and Neurological Diseases Training and Research Hospital, İstanbul, TÜRKİYE

### Abstract text:

**BACKGROUND:** An inverse relationship between cerebrospinal fluid (CSF) opening pressure and CSF protein values was found for patients with idiopathic intracranial hypertension (IIH) in some studies while this relation was not shown in others.

**AIM:** To evaluate the relationship between cerebrospinal fluid (CSF) protein and CSF opening pressure in IIH, and to investigate the association of clinical parameters with CSF protein.

**METHOD:** The medical records of all IIH patients followed-up at headache outpatient clinic between 2017 and 2022 at one institution were systematically reviewed for demographics, CSF opening pressure and CSF protein. Control group was chosen from the medical records of the patients with the diagnosis of normal pressure hydrocephalus. In both of the groups patients who underwent their first lumbar puncture and without any treatment were included. CSF protein levels were compared between the IIH and control group and also a correlation between CSF protein levels and clinical findings were investigated.

**RESULTS:** Twenty six patients with IIH, where 18 of the patients were female (%69,2). Mean CSF protein levels were significantly lower in IIH group than the control group ( $p=0.001$ ). There was no correlation between CSF opening pressure and CSF protein in IIH patients ( $p=0.98$ ). Though a significant relationship was found between the existence of psychiatric comorbidity and CSF protein ( $p=0.045$ ), no correlation was found between existence of headache frequency, papil edema, visual field defects, and CSF protein levels ( $p=0.33, p=0.28$  and  $p=0.96$  respectively).

**CONCLUSION:** Though CSF protein levels did not seem to be a predictor of main clinical findings associated with IIH, low levels of protein may be an evidence for a pressure-dependent flow absorption for CSF and also suggests that patients with high CSF pressures may have low CSF protein levels.

### ORAL 3

#### **White matter lesions in migraine patients: a single center experience**

Berin Gülatar Türkoğlu, Tülin Tanrıdağ

Marmara Üniversitesi Pendik Eğitim ve Araştırma Hastanesi, İstanbul

#### Abstract text:

**Background:** Migraine is a common neurological disorder which can lead to disability. Imaging features of migraine patients are almost normal except controversial white matter lesions (WMLs). Relationship between migraine features and WMLs have not been clearly revealed.

**Aim:** The aim of this study is to assess demographic characteristics, headache features of migraine patients and possible relationship between WMLs.

**Method:** We included 30 migraine patients referred to our headache outpatient clinic between January 2021 and August 2022. They were 18 to 55 years of age and had WMLs in the magnetic resonance imaging. Patients who had major systemic and neurologic disorders were excluded. Demographic data and headache features were noted.

**Results:** There were 24 female (%82.7) and 5 male (%17.3) patients. The mean age was 42 years of age. Four patients had chronic and medication overuse headache (%13) and six patients had migraine with aura (%20). The areas of WMLs were similar between the patients migraine with aura/ migraine without aura or chronic/episodic migraine. (periventricular  $\geq$  frontoparietal >widespread)

**Conclusion:** In this retrospective study, there was no significant difference in the lesion locations according to the type of migraine.

**Key words:** headache; migraine; white matter lesions.

#### ORAL 4

### **Acute levcromakalim injection induces pain-related behaviors independent of SD in male Wistar rats**

Berkay Alpay<sup>1</sup>, Elif Akaydın<sup>1</sup>, Barışcan Çimen<sup>1</sup>, Hayrünnisa Bolay<sup>2</sup>, Yıldırım Sara<sup>1</sup>

<sup>1</sup>Department of Medical Pharmacology, Hacettepe University, Ankara, Turkey

<sup>2</sup>Department of Neurology, Gazi University, Ankara, Turkey

#### Abstract text:

**Background:** Migraine is a type of primary headache, disabling millions worldwide. In one third of the patients transient, fully reversible neurological impairments called migraine auras are experienced. Canonically, migraine auras are speculated to arise as a result of an electrophysiological phenomenon called spreading depression (SD). So far, only levcromakalim (LVC) was able to induce both aura and headache in migraineurs with aura, rest of the migraine-provoking drugs, including nitroglycerine (NTG), were unable to induce aura.

**Aim:** The objective of this work is to compare LVC effects on acute pain-related behaviors and SD with the other established headache inducing agent, NTG.

**Methods:** Periorbital and hind paw mechanical thresholds were tested with von Frey filaments. Anxiety-like behaviors, photophobia, and locomotion were evaluated with elevated plus maze (EPM), dark-light box (DLB) and open field arena (OFA). Effects of LVC and NTG on SD were investigated in rats under urethane anesthesia with in vivo electrophysiology.

#### Results:

LVC significantly decreased mechanical thresholds in a shorter time with respect to NTG.

LVC- and NTG-injected rats spent a shorter time in the open arms of EPM than the control group. LVC and NTG significantly reduced the time spent in the bright compartment of DLB. LVC group, in contrast with NTG group, travelled a significantly shorter distance in OFA. NTG administration reduced the SD threshold while LVC had no effect.

**Conclusion:** LVC reduced mechanical thresholds and induced pain-related behaviors within a shorter timeframe but otherwise effects were similar to that of NTG, however, as opposed to NTG, LVC did not alter SD parameters.

**Keywords:** migraine, aura, nitroglycerine, levcromakalim

## ORAL 5

### **Assessing the effectiveness of bupivacaine dose on the greater occipital nerve blockage**

Burcu KARPUZ SEREN<sup>1</sup>, Esra ACIMAN DEMİREL<sup>2</sup>, Sibel ÇEKİÇ<sup>3</sup>, Hüseyin Tuğrul ATASOY<sup>2</sup>

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<sup>3</sup>*Department of Neurology, Dr. Ayten Bozkaya Spastic Children's Hospital and Rehabilitation Center, Bursa, Turkey*

#### Abstract text:

Background: Greater occipital nerve (GON) blockage is applied in headaches where medical treatments are insufficient. They are safe and effective treatment methods. This study aimed to determine the effectiveness of different doses of Bupivacaine (0.25% Bupivacaine and 0.5% Bupivacaine) used in GON blockages.

#### Method:

Patients with migraines who had GON blockage were divided into two groups. Group-1 includes the patients who had been applied 0.25% Bupivacaine and Group-2 includes the patients who had been applied 0.5% Bupivacaine. GON blockage was performed once a week for 4 weeks and every visit a clinician evaluated the patients' VAS scores. The initial VAS score assessment of patients was recorded as VAS-1 and the final assessment was recorded as VAS-2.

#### Results:

72 patients were included. The average VAS-1 score for group-1 was 8.49, the average VAS-2 score was 4.80, and the difference between VAS scores was statistically significant ( $p < 0.01$ ). The average VAS-1 score for group-2 was 8.65, the average VAS-2 score was 4.35, and the difference between VAS scores was statistically significant ( $p < 0.01$ ). Statistically, no difference was detected compared to the VAS-1 and VAS-2 scores of both groups. The differences between the VAS-1 scores and the VAS-2 scores of both groups were compared, and no significant difference was detected between the two groups ( $p: 0,218$ ).

#### Conclusion:

Bupivacaine is shown to be an effective anesthetic in the GON blockage, but Bupivacaine doses don't provide an advantage over each other. Because of this, unnecessary doses can be avoided and GON blockage can be performed with 0.25% bupivacaine.

## ORAL 6

### **Transcutaneous Pulsed Radiofrequency Treatment for Chronic Migraine**

Rabia Gevher Genç Perdecioğlu\*, Damla Yürük\* , Ezgi Can\*

\* Health Sciences University Diskapi Yıldırım Beyazıt Research&Training Hospital Pain Clinic, Ankara

#### Abstract text:

**Background:** Patients with chronic migraines are often refractory to medical treatment. Therefore, they might need other strategies to modulate their pain. One of them is neuromodulation and can be achieved with several tools like transcutaneous pulsed radiofrequency treatment (TCPRFT). Radiofrequency waves suppress the flow of information expressing pain in the pain pathway.

**Aim:** The aim of this study was to evaluate the effect of TCPRFT for chronic migraine pain relief.

**Method:** TCPRFT applied to nineteen patients with chronic migraine. Pain severity was evaluated by visual analog scale (VAS) score and the migraine attack frequency per month. Subjects were followed for one months (baseline and one month after treatment). TCPRFT was applied for eight minutes once a week in two sessions and applicator pad was placed on the occiput and upper cervical region.

**Results:** 16 (84.2%) patients were female and 3 (15.8%) patients were male. The median age was 44 (20–60) years. When compared to pre-procedure, the number of migraine attack frequency per month did not change in 11 (57.9%) patients, but increased in one (5.3%) patient and decreased in a total of seven (36.8%) patients ( $p= 0.020$ ) . While the median VAS value did not change in four (21.1%) patients, it increased in one (5.3%) patient and decreased in a total of 14 (73.6%) patients ( $p= 0.001$ ).

**Conclusion:** TCPRFT reduces both the number of monthly migraine attacks and the severity of pain in chronic migraine patients in the short term. However, its effect is more pronounced on headache severity.

**Key words:** Migraine, Headache, Pulsed Radio Frequency

## ORAL 7

### **Systemic Inflammatory Markers in Chronic and Episodic Migraine**

Doga Vuralli

1. Gazi University Faculty of Medicine, Department of Neurology and Algology, Neuropsychiatry Center, Neuroscience and Neurotechnology Center of Excellence (NÖROM), Ankara, Turkey

#### Abstract text:

**Background:** Systemic immune-inflammation index (SII) is a novel marker for chronic inflammation. Studies have shown an association between SII and many inflammatory diseases. The neutrophil-to-lymphocyte ratio (NLR) is a well-defined peripheral blood marker of systemic inflammation. Neurogenic inflammation is the main component of migraine pathophysiology and systemic inflammation is considered to have an impact on neurogenic inflammation regarding many neurological disorders.

**Aim:** The aim of this study is to evaluate systemic inflammatory status in different groups of migraine in which neurogenic inflammation plays a central role.

**Methods:** 20 chronic migraine and 20 episodic migraine patients were included in the study. Inflammatory parameters derived from routine hemogram studies were recorded and SII and NLR were calculated. The values were compared between two migraine subgroups.  $p < 0.05$  was considered statistically significant.

**Results:** The mean SII value of the chronic migraine patients (mean  $552.5 \times 10^3 \pm 186.0 \times 10^3$ ) was significantly higher ( $p = 0.001$ ) compared to the mean SII value of the episodic migraine patients ( $383.9 \times 10^3 \pm 101.6 \times 10^3$ ). The mean NLR value of the chronic migraine patients ( $1.83 \pm 0.44$ ) was also significantly higher ( $p = 0.041$ ) compared to the mean NLR value of the episodic migraine patients ( $1.57 \pm 0.30$ ).

**Conclusion:** Chronic migraine patients were found to have higher SII and NLR values than episodic migraine patients. These results indicates that systemic inflammation has a pivotal role not only for migraine pathophysiology but also chronification of this headache disorder.

**Key words:** Systemic inflammation, chronic migraine, systemic immune inflammation index, neutrophil-to-lymphocyte ratio

## ORAL 8

### **Lamotrigine Treatment in Migraine with Visual Aura**

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#### Abstract text:

**Background/aim:** Auras with visual symptoms (MwvA) are most common types of auras and occur in 90% of patients with migraine with aura (MwA). Clinical management of MwA remains still unsuccessful with currently approved first-line prophylactic agents. Lamotrigine is not a first-line agent for preventive therapy of migraine, but some reports suggest that it might be effective in treatment of MwA. We aimed to investigate therapeutic effects of lamotrigine in our patients with MwvA who did not benefit from the previous first-line migraine prophylaxis agents.

**Method:** The study was designed as a prospective, controlled, open, long-term dose titration study. Patients with a definite diagnosis of MwvA who did not receive any other prophylaxis treatment for at least the last month were recruited for the study (2014-2016). A slow dose-escalation was introduced: 25 mg/day for 2 weeks, 50 mg/day for 2 weeks, then if needed dose increased up, not exceeding 200 mg/day. End-point results were evaluated at the end of one year.

**Results:** The study included 56 patients, %87.5 (n=49) of them were female. Mean age was  $31.59 \pm 8.309$  (min-max: 18-49). Mean days with headaches was  $15.32 \pm 6.470$  before treatment and  $4.98 \pm 2.945$  after treatment ( $p < 0.001$ ). Mean VAS score was  $6.96 \pm 2.351$  before treatment and  $2.21 \pm 1.275$  after treatment ( $p < 0.001$ ). The MIDAS scores were also significantly changed before and after treatment ( $p = 0.010$ ).

#### **CONCLUSION**

Lamotrigine is found effective for preventive treatment of MwvA profile. Lamotrigine can be considered, especially for migraineurs reporting prolonged aura and those who do not respond to first-line agents or have contraindications or drug side effects.

**Key words:** migraine, lamotrigine, aura, visual aura

## ORAL 9

### **GAPS IN HEADACHE EDUCATION: A SURVEY ON LAST YEAR MEDICAL STUDENTS IN TURKEY**

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#### Abstract text:

**Background:**Providing an adequate headache care is thoroughly dependent on the knowledge and training of health professionals. As most headache cases are treated in primary care, the emphasis on professional education should first be applied on undergraduate training, in medical schools. However, the unmet needs of undergraduate medical students regarding the knowledge-practice gaps in diagnosis and management of headache disorders are unknown.

**Aim:** Assessing the status of undergraduate headache training and education among medical students.

**Methods:**A web-based survey consisting 14 questions was conducted among last year medical students at Istanbul Medipol University and Mersin University during May-June 2022.

**Results:**Out of 261 participants, 56% of them were females. The top 3 settings where headache disorders are taught include didactic lectures(83.26%), tutorials(59.14%), and ambulatory clinics(48.24%). All participants reported receiving formal education on headache disorders at least for one setting. Only 18% of participants reported not receiving formal teaching on how to take a complete headache history. The mean total number of hours in formal training dedicated to headache disorders was 4.52±2.7 hours. There was a statistically significant difference in the mean total number of hours exposed to headache disorders [4.52±2.7] as compared to diabetes mellitus and its complications [15±22.23](P < .0001, paired Student's t-test)

**Conclusion:**The current medical undergraduate curriculum on headache disorders in Turkey does not meet the expectations stated in national and international recommendations. A review of the syllabus to provide a structured headache education during medical school and improve clinical outcomes may be of great importance in this issue.

**Keywords:** migraine, headache, medical education

## ORAL 10

### **Do levels of red blood cells differ due to the chronicity in migraine?**

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#### Abstract text:

**BACKGROUND:** The hypothesis of a neurovascular pathogenesis which may also involve red blood cell biology has been put forward.

**AIM:** In this study we aimed to investigate the relation of chronicity and type of migraine with biological parameters of red blood cells in migrainous patients.

**METHOD.** We have examined the hematological parameters of the migraineurs that were followed at the headache outpatient clinic of Department of Neurology, Erenköy Psychiatry and Neurological Diseases Training and Research Hospital and also of the control group without a history of headache retrospectively. We have noted the frequency and duration of attacks, existence of aura and quality of life by using MIDAS questionnaire. We have examined whether red blood cell parameters of the migraineurs differ from the control group. Any relation between chronicity as well as type of migraine and red cell parameters were investigated.

**RESULTS:** Of the 251 migraineous patients, 50 (19.9%) had migraine with aura (MWA) and 198 (78.9%) patients were diagnosed as episodic migraine while the remaining 53 (21.1%) as chronic migraine. Hemoglobin (Hb) levels were significantly higher in control group than the patients ( $p=0.013$ ). Red blood cell count (RBC), Hb and hematocrit (Htc) levels were significantly higher in patients with MWA than without aura ( $p=0.041$  and  $p=0.000$ , respectively) and also in MIDAS I grade group than the other groups ( $p=0.045$ ,  $p=0.000$ ,  $p=0.004$ , respectively). Hb levels were also found to be significantly lower in chronic migraine ( $p=0.044$ ).

**CONCLUSION:** It is important to understand the relationship existing between red cell biology and migraine that would help to identify a therapeutic perspective to decrease the burden of this painful and disabling disorder.

Key words: red blood cell, migraine, chronicity

## ORAL 11

### **Phenotypic and comorbid factors associated with chronic migraine**

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#### Abstract text:

**Background:** Resistant chronic migraine is defined as headaches that do not respond to medical treatments, are seen more than 15 days a month, persist for more than 3 months, and headaches for 8 or more days have migraine characteristics. Although the factors affecting chronicity are not known precisely, they continue to be investigated.

**Aim:** In this study, the diseases and symptoms most frequently associated with resistant chronic migraine were investigated.

**Method:** Patients aged 18-65 years with resistant chronic migraine were included in the study. 52 patients were recruited for this purpose. Vascular factors such as coronary artery disease, metabolic factors such as thyroid dysfunction, hyperlipidemia, diabetes mellitus, factors reflecting frontostriatal circuits dysfunction such as anxiety, depression, sleep disorders and factors causing nosioplatic pain such as fibromyalgia, cervicogenic pain, bruxism and temporomandibular dysfunction were questioned.

**Results:** As a result of the study, the rate of accompanying sleep disorders in resistant chronic migraine patients was 46%. The rate of anxiety 28%, depression 22%, bruxism 22%, coronary artery disease 8%, obesity 14%, thyroid dysfunction 18%, diabetes mellitus 14% and fibromyalgia was found to be 30%.

**Conclusion:** It is important to consider the accompanying diseases and symptoms in patients with resistant migraine. It can lead to an increase in the success of treatment, an improvement in the patient's quality of life, and a decrease in chronicity rates.

**Keywords:** resistant migraine, chronification, comorbidity

There is no financial support in the form of grants, equipment and drugs.

## ORAL 12

### **Evaluation of Risk Factors in Patients with Chronic Daily Headache and Medication Overuse Headache**

Gulcan Tascatan<sup>1</sup>, Huseyin Tugrul Atasoy<sup>2</sup>, Esra Aciman Demirel<sup>2</sup>, Mustafa Acikgoz<sup>2</sup>, Bilge Piri Cinar<sup>2</sup>, Ulufer Celebi<sup>2</sup>

<sup>1</sup>Karadeniz Ereğli State Hospital <sup>2</sup>Zonguldak Bülent Ecevit University Faculty of Medicine, Department of Neurology

#### Abstract text:

**Purpose:** The aim of this study is to assess and compare the quality of life, daily physical activity level and perception of illness in patients with chronic daily headache, drug overuse headache, episodic migraine and tension-type headache across disease subgroups with respect to possible risk factors such as alcohol/ caffeine/ nicotine use, eating attitude, which may trigger chronic headache and medication overuse.

**Materials and methods:** Patients who applied to Zonguldak Bülent Ecevit University Health Application and Research Center Neurology Outpatient Clinic between January 1- December 1, 2020 with a complaint of headache were evaluated with respect to their history and clinical examination in terms of headache subtype. The pain intensity ,the physical activity, the quality of life, anxiety, depression and eating disorders were evaluated with specific tests. A face-to-face interview was conducted with the patients by a psychiatrist using the SCID-I .

**Results:** In our study , we found that psychosocial factors are more effective in the chronicity of the disease and the emergence of medication overuse in the TTH group compared to the migraine group were obtained. The data further points that migraine is a factor in MOH on its own.

**Conclusions:** Drug overuse in patients with chronic headache may somehow cause a partial decrease in anxiety and depression scores as a result of the anxiolytic effect seen in substance addiction, and may create a partial improvement in the physical, social, financial and psychological effects of chronic headache.

**Keywords:** Addiction, Tension-type headache, Medication overuse headache, Chronic daily headache, Migraine.

ORAL 13

**CHANGE OF HIPPOCAMPAL VOLUME MEASUREMENTS IN PATIENTS DIAGNOSED WITH CHRONIC MIGRAINE, EPISODIC MIGRAINE AND MEDICATION OVERUSE HEADACHE**

Mahmut Nedim Aybakan, Gizem Gürsoy

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2- Gizem Gürsoy, Dr., Ümraniye Training and Research Hospital, Istanbul

Abstract text:

**Background and Aim:** The hippocampus is located in the medial depths of both temporal regions and is activated during pain processing and modification of nociceptive stimuli. In our study, it was aimed to show the relationship between headache and hippocampal volume by comparing the right, left and total hippocampus volumes of Episodic Migraine, Chronic Migraine and Drug Overuse Headache patients and healthy control group with MRI, and also by looking at the correlation between the number of painful days and attacks and the hippocampal volumes.

**Method:** Between February and May 2022, a total of 30 patients diagnosed with 10 Episodic Migraine, 10 Chronic Migraine, 10 Medication Overuse Headache and 30 healthy volunteers of similar age (18-45) and gender were included in the study. Hippocampal volumes were measured manually by taking cranial MRG 3D T1W FSPGR sequences in all subjects participating in the study.

**Results:** The patient group consisted of 27 women and 3 men, and the control group consisted of 28 women and 2 men; there was no statistically significant difference between the groups in terms of gender and age. The mean right hippocampal volume of all patients included in the study was  $2.51 \pm 0.33$ ; The mean left hippocampal volume was  $2.43 \pm 0.38$  and the total hippocampal volume was  $4.93 \pm 0.67$ . These volumes were  $2.59 \pm 0.36$ ,  $2.51 \pm 0.36$  and  $5.1 \pm 0.67$  in the control group, respectively. It was observed that the right, left and total hippocampal volume averages of the control group were higher than the individuals in all patient groups, but only the total hippocampal volume was found to be statistically significant between the groups.

**Conclusion:** It was thought that hippocampus volume changes in migraine may be related to the pain characteristics of the disease and the amount of drug use.

**Key words:** Migraine, hippocampal volume, Drug Overuse Headache

ORAL 14

**FREQUENCY AND TYPES OF USE OF ALTERNATIVE AND COMPLEMENTARY THERAPIES IN TURKISH PATIENTS WITH CHRONIC MIGRAINE WITH MEDICATION OVERUSE HEADACHE**

Gozde Baran<sup>1</sup>

<sup>1</sup>Marmara University, Pendik Research and Training Hospital, Department of Neurology; Istanbul, Turkey

Abstract text:

**Background:** In chronic migraine; preventive treatments such as pharmacological, non-pharmacological or a combination of both are recommended. It is known that drug overuse is common in these patients. In addition, it's seen that they resort to alternative and complementary therapies(CAT) due to their fear of drug side effects or seeking treatment that may be more effective.

**Aim:** In this study, the relationship between CAT use and medication overuse headache was examined.

**Method:** 43 patients with chronic migraine were included in the study. Demographic and clinical data of the cases were recorded. A questionnaire including traditional treatment methods was given to the patients and CAT and drug overuse were questioned.

**Results:** A total of 43 patients, 35 female and 8 male, with chronic migraine were included in the study. Eighteen(42%) patients reported using CAT. The distribution of patients who are using CAT was 5(11%) hijama, 4(9%) neural therapy, 4(9%) vitamins, 3(7%) acupuncture and 2 patients other(5%) CATs. It was observed that 7 of the patients who applied to CATs and 4 of those who did not have a history of CAT application had drug overuse. There were 2 patients who applied to these methods with the recommendation of the doctor. It was determined that they paid an average of 3245±632 TL for CAT. The use of CAT was significantly higher in patients with chronic migraine with drug overuse(p<0.05).

**Conclusion:** It has been determined that the frequency of applying to alternative treatment methods is higher in patients with chronic migraine with drug overuse.

**Key words:** Migraine, Complementary and Alternative Therapie, Medication Overused Headache

## ORAL 15

### **Migraine Attacks and Metabolic Conditions**

Gülcan Göçmez Yılmaz

Mersin Şehir Eğitim ve Araştırma Hastanesi

#### Abstract text:

#### Background

Metabolic diseases such as hypertension, diabetes and hypercholesterolemia which are common in the society, are accompanied by many of the migraine patients 12% of the general population. Despite many studies, the effect of metabolic conditions such as blood pressure values, fasting and postprandial blood sugar, thyroid function tests, smoking and cholesterol levels of a migraine patient on migraine clinic is unclear. In this study, we evaluated the effect of metabolic parameters on aura, attack frequency and duration of attacks in migraine patients.

#### Method

Our study included 127 migraine patients who met the International Headache Society (IHS) criteria. Migraine patients were grouped according to the frequency of attacks as <1, 2-5, >5 attacks. The relationship between metabolic parameters such as systolic and diastolic blood pressure values, fasting and postprandial blood glucose, thyroid function tests, cholesterol levels, smoking and aura, attack frequency and duration of attacks were evaluated.

#### Results

No significant correlation was found between the presence of aura, frequency of attacks and duration of attacks and sistolic and diastolic tension, fasting-fasting blood sugar, thyroid function tests, total cholesterol, low-density lipoprotein, triglyceride levels, smoking ( $p>00,5$ ). In our study free T4 levels were found to be higher only in migraine patients without aura, as a significant relationship ( $p=0,022$ ).

#### Conclusion

In our study, no relationship was found between migraine aura, attack frequency and attack duration and parameters showing metabolic status. Studies with a larger number of patients are needed.

Key words: migraine attacks, metabolic disease, smoking and migraine

## ORAL 16

### **Prevalences of primary headache disorders in neurology outpatients in Turkey, Middle East, Africa, and Asia: A subgroup analysis of the Head-MENAA Study**

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<sup>2</sup> Gazi University, Medical Faculty, Department of Neurology and Algology, NÖROM, Ankara, Turkey

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<sup>8</sup> Tehran University of Medical Sciences, Department of Neurology, Tehran, Iran

<sup>9</sup> University of Mersin, Department of Biostatistics and Medical Informatics, Mersin, Turkey

<sup>10</sup> Mersin University, Medical Faculty, Department of Neurology, Mersin, Turkey

#### Abstract text:

##### Background and Aim

Primary headaches are a heterogeneous group of neurologic disorders that cause recurrent or persistent head pain without any underlying cause. The present study addressed the prevalence of primary headache disorders seen by headache specialists in different geographic regions in Asia and Africa. Also, the frequency of patients with primary headaches who were consulted from the emergency department to a headache specialist was investigated.

##### Method

In this cross-sectional multicenter international study, 69 headache specialists from 13 countries (Azerbaijan, Chad, Cyprus, Egypt, Ethiopia, Iran, Ivory Coast, Mongolia, Morocco, Senégel, Sudan, Tatarstan, Turkey) evaluated headache patients who applied to neurology clinics. Researchers recruited patients on different weekdays selected by the research randomizer program for five consecutive weeks in April and May. Researchers used the Head-MENAA study questionnaire and ICHD-3 criteria when they evaluated patients.

##### Results

30% (4120) of 13669 patients who applied to neurology clinics on chosen days had headache complaints. Headache specialists diagnosed primary headaches in 79.8% (2972) of patients with a headache (74.3% women, mean age: 42.8±14.8). The most frequent primary headache was migraine (65.2%). The prevalence of primary headache disorders seen by a headache specialist is shown in Figure 1. When evaluated according to geographic regions, primary headache disorders comprised 79.7% of headache

patients in Turkey, 84.7% in the Middle East, 83.2% in Africa, and 68.5% in Asia. The study also showed that most patients with primary headache disorders were consulted from the emergency department or other departments (85.5% and 88.2%, respectively).

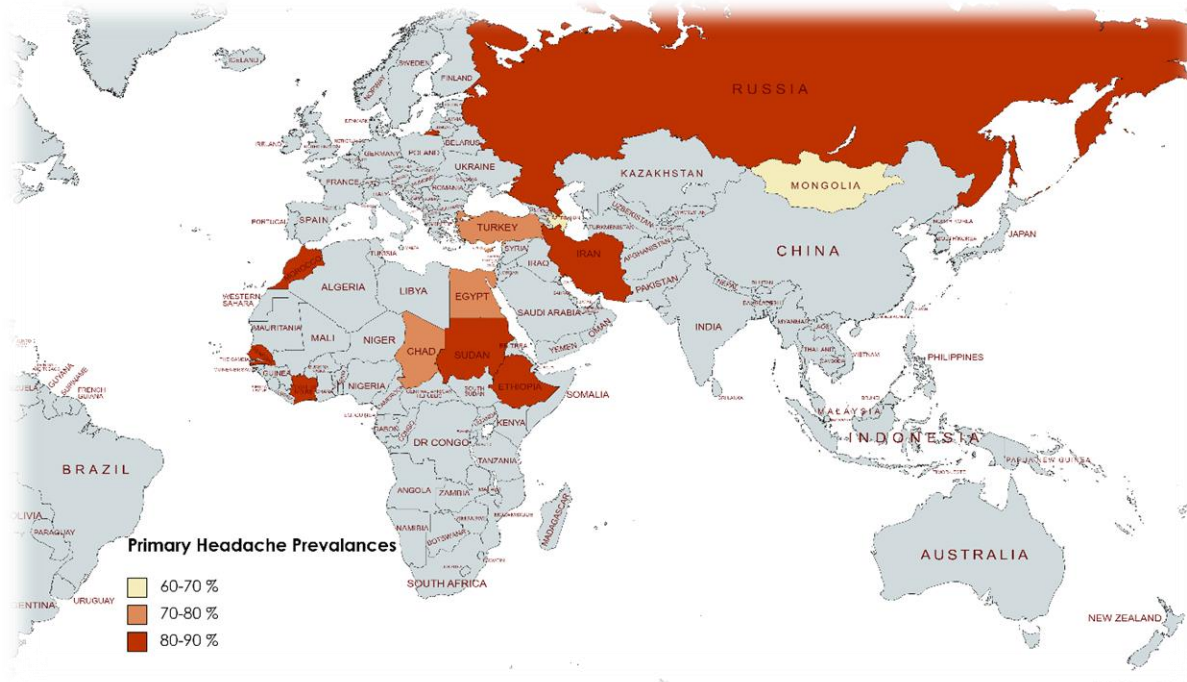


Figure 1: The ratios of primary headache disorders according to countries (Azerbaijan, Chad, Cyprus, Egypt, Ethiopia, Iran, Ivory Coast, Mongolia, Morocco, Senegal, Sudan, Tatarstan(Russia)\*, Turkey)

## Conclusion

According to our study, the ratio of primary headache disorders among the patients admitted to neurology clinics is 79%, similar in all regions. We noted a significant increase in this rate compared to a few previous studies. Also, the ratios of primary headache disorders in the patients consulted from the emergency and other services were unexpectedly higher. These data indicated that the burden of headaches on the healthcare system should be re-evaluated and examined again in depth regarding its reasons, from the severity of the pain to the access to the health system.

Keywords: Head-MENAA study, primary headache disorders, neurology outpatient

## ORAL 17

### **Pain Medicine Physicians' Preferences for Interventional Procedures in Migraine Headache**

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<sup>3</sup>: Department of Neurology and Algology, University of Health Sciences, Ankara Education and Research Hospital, Ankara, Turkey

#### Abstract text:

**Background:** The popularity of interventional procedures that have increased in the treatment of migraine.

**Aim:** We aimed to determine the application preferences of pain medicine physicians in the interventional procedures in the treatment of migraine.

**Method:** A survey which includes 27 questions, including their technique and drug choice on the greater occipital nerve (GON), lesser occipital nerve (LON), supraorbital nerve (SON) and sphenopalatine ganglion (SPG) block procedures was prepared and directed to physicians via 'Google Forms'.

**Results:** 72 participants replied the survey. 38.9% of the participants preferred the GON block; 25% the GON, LON and SON blocks; 22.2% the GON and SON blocks; 12.5% the GON and LON blocks. Ultrasound guided application rate was 38.9% in the GON block, 26.3% in the LON block, 25.4% in the SON block. Bupivacaine was the most preferred local anesthetic in the GON, LON and SON blocks (66.7%, 70.2%, 55.6% respectively). In transnasal SPG block, 86.2% of the participants stated that they used lidocaine. 57% of the participants added steroids to the local anesthetic in the GON block, 45.6% in the LON block and 55.6% in the SON block. The rate of bilateral injection was 70.4%, 61.4% and 39.7% in the GON, LON and SON blocks, respectively.

**Conclusion:** Pain medicine physicians frequently prefer GON block in the treatment of migraine and mostly use bupivacaine in nerve blocks. Most physicians add steroids to local anesthetics.

**Keywords:** migraine, block, nerve block

## ORAL 18

### **Co-occurrence of Medication Overuse Headache and Irritable Bowel Syndrome and Food Triggers**

Merve Ceren Akgör<sup>1</sup>, Saliha Gökçe<sup>1</sup>, Doğa Vurallı<sup>1</sup>, Bahar Taşdelen<sup>2</sup>, Fatih Gültekin<sup>3</sup>, Hayrunnisa Bolay<sup>1</sup>

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#### Abstract text:

**AIM:** Different gastrointestinal system disorders can be seen in headache patients. This study aimed to investigate the relationship between irritable bowel syndrome (IBS) and medication overuse headache (MOH) and cognitive complaints during headaches.

**METHOD:** Three hundred and five volunteers participated in this survey. The participants were evaluated in terms of age, gender, headache character- duration-frequency, frequency of pain medication use, cognitive complaints, and gastrointestinal symptoms associated with irritable bowel syndrome (IBS). In addition, consumption behavior 90 different foods and food triggers were evaluated.

**RESULTS:** MOH was detected in 38.5% (n=116) of the participants. Gastrointestinal symptoms consistent with IBS was found in 35.8% (n=106) of the participants. In patients with MOH, the rate of having IBS (49.5%) was significantly higher than the rate of not having IBS (32.5%) (p=0.004). The Mig-Scog score was found to be significantly higher in patients who experienced IBS-type abdominal pain compared to those who did not (p<0.001). Individuals with IBS showed less avoidance behavior of consuming certain food triggers such as red colored candy (p=0.001), sweetener-containing products (p=0.008), gelatin-containing foods, cream-containing products, frozen ready packaged foods and chicken products, curry sauce, fried potatoes (0.004) and nuts. They experienced headache on the day they consumed these foods (p<0.05).

**CONCLUSION:** Irritable bowel syndrome and cognitive complaints are seen at a higher rate in patients with medication overuse headache. Patients with IBS consume more frequently foods that they define as headache triggers in daily life compared to individuals without IBS. Recognition of irritable bowel syndrome is important in chronic headache and accompanying disability. Existing comorbid IBS symptoms in MO headache should be carefully questioned and an appropriate treatment plan should be included in the headache management. Also, further studies are needed to define which food ingredient is responsible for inducing headache.

**Key Words:** Medication Overuse Headache, Irritable Bowel Syndrome, Food Triggers

## ORAL 19

### **Stroke Characteristics of Patients with Migraine; an observational study**

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#### Abstract text:

**Background:** The relationship between migraine and vascular events, especially stroke, has been investigated for many years. Although researchers reported an increased frequency of stroke in patients with migraine, the exact mechanism of migraine associated stroke has not been fully elucidated.

**Aim:** In this study, we aimed to evaluate clinical features of stroke in cases with concomitant stroke and migraine.

**Method:** Patients admitted to the stroke unit between 2012 and 2022 were searched via the İstanbul University Stroke Database retrospectively. Patients with transient ischemic attacks were excluded. Clinical and neuroimaging findings were reviewed.

**Results:** Of the 36 patients with concomitant stroke and migraine, 26 had an ischemic stroke (IS), and 10 had intracerebral hemorrhage (ICH). Mean age [48,9(±17,4) and 53,5(±14,3) years respectively], and female to male ratio were similar between patients with IS and ICH. The median National Institute of Health Stroke Scale score was 4,3 in the IS group. Approximately 2/3 of patients had first-ever stroke. Only 2 female patients were using oral contraceptives, and another female patient was pregnant at the time of the qualifying stroke. The most common risk factor, hypertension was found in 44% of the patients. Middle cerebral artery was the most commonly involved arterial territory. Large-artery disease was the most common etiology in men and cardioembolic stroke in women.

**Conclusion:** It is crucial to treat vascular risk factors in middle-aged migraine patients, in particular, cardiac screening might be beneficial for female migraineurs in primary prevention of stroke.

**Keywords:** headache, migraine, stroke,

ORAL 20

**Our experience with multiple cranial nerve blockades in patients with chronic migraine resistant to medical treatment**

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<sup>1</sup>Balıkesir University Faculty of Medicine, Department of Neurology <sup>2</sup>Izmir Tepecik Training and Research Hospital, Algology Clinic, Turkey

Abstract text:

**Objective:** The aim of this study was to reduce the frequency of attacks in patients with chronic migraine who are resistant to medical treatment and who are unable to obtain high-cost treatment options such as botulinum toxin or monoclonal antibodies.

**Methods:** Patients with chronic migraine between the ages of 18 and 65 who did not have bleeding disorders, were not anticoagulant users, did not have heart problems, and were unresponsive to medical treatment were included. Weekly sessions involved three steps: sphenopaltine ganglion blockade, greater occipital nerve blockade, and supraorbital nerve blockade. There were ten applications in all. Before the application, the weekly attack frequency, attack severity and duration, analgesic consumption were all questioned.

**Results:** The first results of our current study are as follows: 23 patients (17 women, 5 males), mean age ( $47.3\pm 10.4$ ), mean headache duration (years) ( $23.7\pm 11.2$ ), number of attacks per month ( $21\pm 2.8$ ), mean attack duration (h) ( $36\pm 5.7$ ), mean attack severity ( $9.8\pm 0.9$ ), monthly intake of analgesics ( $25.5\pm 3.6$ ). At the end of the second month of treatment, the monthly number of attacks was ( $8\pm 2.2$ ), the mean attack duration (h) ( $13.3\pm 4.4$ ), the mean attack severity ( $4\pm 0.7$ ), and the monthly intake of analgesics ( $1.9\pm 0.6$ ).

**Conclusion:** Multiple nerve blockades may be effective in practice in patients with chronic migraine who are refractory to medical therapy.

**KEY WORDS:** Chronic migraine, nerve blockades, bupivacine

## ORAL 21

### **Value and importance of Copeptin as a biomarker in determining the severity of acute headaches**

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<sup>3</sup>Pamukkale Üniversitesi Tıp Fakültesi Biyokimya AD; Denizli

#### Abstract text:

**Introduction:** It is important to distinguish between primary-benign and secondary-malignant headaches in emergency admissions.

**Aim** was to determine the value of serum Copeptin levels in differentiating primary and secondary headache in adult patients who admitted to the emergency department with headache.

**Method:** The research is observational, cross-sectional-analytical. A total of 167 consecutive patients aged  $\geq 18$  years who admitted to the university emergency department with the main complaint of 'headache' were included in the study. Data were collected with a questionnaire. Venous serum samples were taken to study copeptin levels. The treatment performed by the primary physicians was not interfered with. Those who had head trauma in the last 7 days and were pregnant were excluded. The patients were evaluated for the etiology of headache by the neurologist 2 weeks after the emergency room visit. Human copeptin level was studied using commercial ELISA kits from BT Lab (Bioassay Technology Laboratory, Shanghai, China).

**Results:** 106 (63.5%) of the patients were female and the mean age was  $43.2 \pm 16.45$  years. Twenty-one (12%) of the patients were diagnosed with secondary headache. There was a statistical difference between the mean and percentages of the patients with primary and secondary headaches in age, gender, the number of headache attacks in the last 4 weeks and the Glasgow coma scale, but no difference was observed in serum copeptin levels ( $p > 0.05$ ). Multivariate analysis with these variables showed that the same variables increased the risk of secondary headache [age (OR=1.04; 95% CI=1.0-1.07;  $p=0.013$ ); male gender (OR=4.5; 95% CI=1.3-15.3;  $p=0.015$ ); number of pain attacks in the last 4 weeks (OR=1.1; 95% CI=1.05-1.18;  $p=0.0001$ )].

**Conclusion:** There was no significant difference between serum copeptin levels in the differentiation of primary and secondary headaches. It is recommended to continue research in different populations.

**Keywords:** Headache, Copeptin, secondary headache

\*This project was supported by Pamukkale University Scientific Research Projects (BAP) with project number 2020HZDP024.

ORAL 22

**Radiofrequency Treatment of Sphenopalatine Ganglion in Medically-Resistant Cluster Headache: A Case Report**

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Department of Algology, Gazi University, Ankara, Turkey

Abstract text:

**Background:**

Cluster headache is a stereotypic, primary headache disorder that is marked by repeated short-lasting attacks of severe, unilateral head pain and associated autonomic symptoms

**Aim:**

In this case report, we present the role of sphenopalatine ganglion pulsed radiofrequency therapy in the management of cluster headaches.

**Method/ Case Report:**

A 37-year-old male patient had been admitted with severe needle-prickling pain around his left eye accompanied by lacrimation, redness, nasal congestion, and agitation for 15 years. There were attacks of pain 3-4 times a day lasting 2-3 hours. The patient did not benefit from verapamil, gabapentin and lithium. Sphenopalatin ganglion pulsed radiofrequency was applied 5 years ago, and he had no pain for 5 years. For the last 3 months, he has been having severe cluster type pain every day. Transnasal sphenopalatine ganglion block was performed 2 times with weekly intervals and the attack number and severity of pain was decreased. For long term effect sphenopalatine ganglion pulsed radiofrequency was applied under the guidance of fluoroscopy one week after the block. After pulsed radiofrequency, the frequency of pain decreased to 2-3 per month, and the intensity of pain decreased from 10 to 2. At the 6-month follow-up, the patient's pain relief continued.

**Results:**

In cluster headache prophylaxis; Pharmacological treatments are used. If drugs cannot be adequately controlled the pain or can't be tolerated, interventional procedures such as sphenopalatine ganglion blockade and radiofrequency therapy are used.

**Conclusion:**

Although sphenopalatine block and radiofrequency are recommended in the treatment of cluster headache, there is little evidence of their effectiveness.

**Keywords:** Cluster headache, Sphenopalatine ganglion, Pulsed radiofrequency

ORAL 23

**A case of Cluster Headache as the first manifestation of Multiple Sclerosis.**

Tehran Aliyeva, Aslı Yaman Kula

Bezmialem Vakıf University Faculty of Medicine

Abstract text:

**Background/ Aim:** Cluster headache (CH) is a rare and compelling primary headache disorder. Anatomical connections between hypothalamus, trigeminovascular and parasympathetic nervous systems are thought to play a role in the pathophysiology. Although headache is not among the common neurological symptoms of multiple sclerosis (MS), several cases have been described in the literature indicating a possible link between MS and CH.

**Method and Results :** We present a case with right CH in the last 3 years. Headache was the first and only symptom. Brain MRI revealed multiple demyelinating lesions in the bilateral frontotemporoparietal lobes, bilateral periventricular regions, left globus pallidus, left hippocampal region, right cerebellar hemisphere and left posterolateral brainstem, left periaqueductal gray matter. The patient was diagnosed with multiple sclerosis during the follow-up.

**Conclusion :** In spite of CH is a primary headache, it has also been described in the literature as secondary due to brain lesions. In our case, we draw attention to the importance of brain imaging in patients with CH and that it may be among the symptoms of MS in the future.

**Key words:** cluster headache, multiple sclerosis, trigeminovascular system

ORAL 24

**Trigeminal Autonomic Cephalalgias are Associated with Normal Somatosensory Temporal Discrimination Thresholds**

Doga Vuralli

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Abstract text:

Background: Evidence of impaired somatosensory temporal discrimination in migraine attacks is recently provided. In contrast, tension type headache attacks are associated with intact somatosensory temporal discrimination. No studies have yet investigated somatosensory temporal discrimination in patients with trigeminal autonomic cephalalgias TAC).

Aim: In this preliminary study, it was aimed to investigate somatosensory temporal discrimination thresholds in patients with trigeminal autonomic cephalalgias.

Method: Somatosensory temporal discrimination threshold values were evaluated from both hands (C7 dermatome) in 6 patients with trigeminal autonomic cephalalgias (four hemicrania continua and two cluster headache patients) and 6 healthy controls.  $p < 0.05$  was considered statistically significant.

Results: Somatosensory temporal discrimination thresholds of patients with trigeminal autonomic cephalalgias ( $39.6 \pm 4.4$  ms for the right hand and  $41.3 \pm 4.03$  ms for the left hand) were comparable ( $p = 0.74$ ) to those of healthy volunteers ( $39.4 \pm 5.0$  ms for the right hand and  $39.8 \pm 6.0$  ms for the left hand).

Conclusion: Central processing of temporal discrimination of somatosensory stimuli remained intact in cluster headache and hemicrania continua patients. Somatosensory temporal discrimination test stands out as an attractive diagnostic tool for differentiating migraine from other primary headache disorders.

Key words: Somatosensory temporal discrimination, trigeminal autonomic cephalalgias, hemicrania continua, cluster headache

ORAL 25

**Pulse radiofrequency of the greater occipital nerve in a patient with Cervicogenic headache**

Fatemeh Farham<sup>1,2</sup>, Gozde celik<sup>1,2</sup>, Ahmet Cemal Kaya<sup>1,2</sup>, Nurten Inan<sup>2</sup>, Doga Vuralli<sup>1</sup>, Gazi University, Faculty of Medicine, Department of Neurology and Algology, Ankara, Turkey <sup>2</sup>, Gazi University, Faculty of Medicine, Department of Anesthesiology and Algology, Ankara, Turkey

Abstract text:

**Background:** Cervicogenic headache (CH) characterized by unilateral pain that is caused by a disorder of the cervical spine's anatomical structures, mainly innervated by the C1, C2, and C3 spinal nerves. The prevalence of CH in general population is 0.4 to 4 percent.

**Case:** A 60-years old woman visited our clinic with a year history of right sided headache, that started from the neck spreading to the frontotemporal area. The pain was dull in quality, lasted 3-4 days in each episode and were aggravated by head movement. The examination was showed tenderness in ipsilateral greater occipital nerve (GON) and limitation in head and neck movements. Brain MRI was normal. Cervical MRI revealed multilevel disc protrusion without compression on cord. According to the ICHD-3 the patient had cervicogenic headache, so we performed right GON blocks for two times. The pain was relieved after each GON block with local anesthetic but the duration of the effect was short, so we did GON pulse radiofrequency (PRF) which had longer effect.

**Results:** The patient didn't have any headache after procedure in one month follow up.

**Conclusion:** In patients with cervicogenic headache we suggest GON PRF instead of repetitive GON blocks, because of its long lasting effect.

**Key words:** Cervicogenic headache, Pulse Radiofrequency, Greater occipital Nerve

## ORAL 26

### **Headache can be associated with a subdural hematoma that develops after spontaneous intracranial hypotension: a case report**

Gözde Çelik MD, Doğa Vurallı MD, Didem Tuba Akçalı MD Professor, Hayrunisa Bolay MD Professor  
Department of Algology, Gazi University, Ankara, Turkey

#### Abstract text:

#### Background

Spontaneous intracranial hypotension (SIH) is an important cause of "new daily persistent headaches" but is not a well-recognized entity. The misdiagnosis of SIH can have serious consequences.

#### Aim

The aim of this case report is to raise awareness among doctors to suspect SIH patients who present with new persistent headaches.

#### Method/ Case Report

A 50-year-old man awoke with a headache and a whirring noise in both ears. There was no history of trauma. The headache was bifrontal and associated with nausea and posterior neck pain. The headache was positional, it worsen upon standing or improve when lying down. Neurologic examination was normal. Brain MRI showed bilateral subdural hematomas (SDH), (figure-1) An epidural blood patch was applied to the patient when he did not improve with conservative treatment. However, the patient did not improve adequately (figure-2) and underwent SDH surgery. After surgery (figure-3), the patient was discharged without complications.

#### Results

In the case of the development of symptomatic SDH, both an EBP and surgical evacuation of SDH may be necessary components in the treatment of a patient with SIH.

#### Conclusion

Spontaneous intracranial hypotension may be an uncommon cause of headaches. However, it is a very treatable one. The sooner that the correct diagnosis can be made and appropriate treatment can be instigated, the less likely are complications to occur.

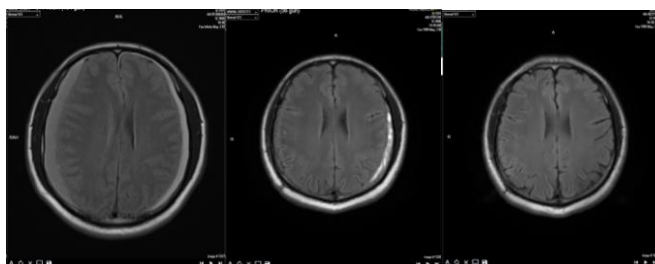
#### Keywords

Spontaneous intracranial hypotension, subdural hematoma, epidural blood patch

Figure-1

Figure-2

Figure-3



ORAL 27

**Investigation of the relationship between Cortical Spreading Depolarization and STING pathway**

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<sup>3</sup>Hacettepe University, Faculty of Medicine, Department of Neurology, Ankara, TURKEY

Abstract text:

**Background:** Cortical spreading depolarization (CSD) is a phenomenon seen in migraine with aura patients and patients who have brain injury. It was shown to activate different inflammatory pathways in rodent brain. Stimulator of interferon genes (STING) pathway starts a type 1 interferon mediated immune system response in pathogen infection and cell stress. It plays important roles in neuroinflammation in several neurologic diseases. But the role of STING pathway in inflammatory response seen after CSD is not yet known.

**Aim:** In this study we aimed to investigate STING protein expression in neurons in mice brain cortex at acute and subacute time points after after CSD.

**Methods:** CSD was induced with two different methods. In adult wild-type C57BL/6J mice it was induced conventionally with topical potassium chloride (KCl) application. In transgenic mice with Thy1-ChR2-YFP genotype it was induced non-invasively with optogenetic stimulation. 6 CSD waves were induced in every animal. Animals which underwent CSD induction or sham surgery were sacrificed after 5 hours or 24 hours and their brains were collected. As a control naive mice brains were also used. 20 microns-thick sections from these brains were immunohistochemically stained for STING protein and neuronal marker NeuN. Hoechst 33258 was used to stain cell nuclei. Sections were examined using confocal laser scanning microscopy with appropriate lasers.

**Results:** STING staining was increased in both conventionally and optogenetically CSD induced groups compared to sham surgery and naive groups. Increase of STING staining was seen in both time points with stronger staining at 5 hours. STING staining displayed considerable colocalization with NeuN staining.

**Conclusion:** It was seen that CSD can cause an increase in the STING protein expression in mice brain and most of this increased expression was seen in neurons. This might indicate STING pathway activation in neurons after CSD. Elucidation of the interaction between CSD and STING pathway might contribute to developing new treatments for disorders in which CSD takes place.

**Keywords:** neuroinflammation, CSD, optogenetics, migraine, STING

This study is supported by Hacettepe University No: TSA-2022-19749

ORAL 28

**Three cases of idiopathic intracranial hypertension with persistent headache ending up in loss of vision: Missed Fundoscopic examination.**

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<sup>1</sup>Addis Ababa University, Addis Ababa City, Ethiopia, Department of Neurology.

<sup>2</sup>Addis Ababa University, Addis Ababa City, Ethiopia, department Of Ophthalmology

Abstract text:

**Background:** In Idiopathic intracranial hypertension (IIH) besides its feared complication of visual disturbances headache is the commonest symptom. In patients with recurring and progressive headache accompanied by visual symptoms, performing ophthalmoscopy is an immediate priority, and not doing so is detrimental.

**Case Presentation:** We report previously healthy three adult patients, one woman and two men who presented with new onset moderate to severe headache together with severe visual disturbances, which had been there from several weeks to a year (in one)

For the above complaint they visited different health setups and seen by multiple physicians. And all reported they were given anti pain and antibiotics, but in all neither a consideration of IIH nor any attempt or referral for funduscopy was done. Because of their persistent symptoms, they visited our center and direct ophthalmoscopy revealed bilateral papilledema and finally a diagnosis of IIH was made and they were put on the only available therapy (Medical therapy) and closely followed over several months to years. And the headache improved in all but resulted in severe visual impairment in one and total blindness in two.

**Conclusion and Recommendation:** Headache associated with visual disturbances could be a symptom of a serious health condition including IIH. And in such situations, prompt ophthalmoscopy or referral to a center where the service is available should be the standard of care. Besides availing portable ophthalmoscopes and training of health workers, timely ophthalmoscopic evaluation of headache patients will avert the tragic consequence of irreversible visual loss.

**Key Words:** Headache, visual loss, ophthalmoscopy, Idiopathic intracranial Hypertension.

No Financial Relation or any conflict of interest

ORAL 29

**Primary Headache Associated with Sexual Activity: Case Report**

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Department of Neurology, İstanbul Kanuni Sultan Suleyman Training and Research Hospital, University of Health Sciences, İstanbul, Turkey

Abstract text:

**OBJECTIVE:** Primary headache associated with sexual activity (PHASA) is one of the rare subgroups of primary headaches and its prevalence is estimated to be 1–1.6% in population-based studies. The mean age of onset is mainly in the third to fourth decade of life and there is a male preponderance. Due to the reluctance of the patients to report the problem to a clinician, it is usually underdiagnosed.

**CASE:** A 42-year-old man was admitted to the outpatient clinic, reporting a history of severe headaches during sexual intercourse for the last 4 months. Headaches occurred bilaterally in occipital regions, immediately after orgasm and lasted for about 1 hour. Neurological evaluation and neuroimaging studies were normal. Indomethacin was started at 25 mg/day 30 minutes before the intercourse. Since there was no improvement in the headache severity, the dose was increased to 50 mg/day. At the follow-up, the patient reported dramatic improvement after 2 weeks. The treatment was continued for 4 months.

**RESULT:** This is a rare case of primary headache associated with sexual activity. Once secondary causes have been excluded, the prognosis is good and it is essential to inform the patient about the benign course of this headache.

**Keywords:** primary headache, sexual activity, indomethacin,

ORAL 30

**Diagnostic and Follow-up Characteristics of Patients with Idiopathic Intracranial Hypertension**

Pinar Gelener<sup>1</sup>, Serap Ucler, Ozlem Coskun, Emrah Altiparmak, Levent Ertugrul Inan

Current Affiliation: University of Kyrenia, Faculty of Medicine, Department of Neurology

Abstract text:

**Background:** Idiopathic intracranial hypertension (IIH) is a disorder of elevated intracranial pressure with normal cerebrospinal fluid (CSF) composition and without intracranial pathology

**Aim:** We aimed to evaluate the diagnostic and follow up characteristics of IIH patients who are followed in our headache policlinic.

**Method:** The study group included 56 IIH patients. Data regarding to fundoscopy, perimetry, lumbar puncture, brain MRI and venography, optical coherence tomography (OCT) were evaluated.

**Results:** Out of 56 patients, 96.4% (n:54) were women and 3.6% (n:2) were men. Mean age was 35.2±9.7 and the mean BMI was 33.25±5.35. Initial symptom was headache in 94.6%, blurred vision in 53.6%, and tinnitus in 87.5%. The mean CSF pressure in the 29 cm. The mean time for diagnosis was 6 months and follow up duration was 4 years. Cranial MR venography was normal in 69.6% and venous sinus hypoplasia was present in 30.3%. Perimetry was normal in 35.7% and 64.3% had visual field deficits. All patients started on acetazolamide monotherapy. Topiramate was added as a second therapy to 50% and 7.14% referred to shunt surgery. The median Frisen papilledema grade was 2 in the first examination and 0 in the last examination (p< 0.001). The mean average retinal nerve fiber layer (RNFL) thickness measured by OCT was 111 µm in the first and 96 µm in the last examination. Left eye RNLF thickness was 113.50 µm (77-284) following 98 µm (45-131) (p< 0.001).

**Conclusion:** This study reviews the management of these patients. Also our OCT data showed that RNFL thickness measurements are important in the initial and follow up assessments.

**Key words:** idiopathic intracranial hypertension, papilledema, OCT, retinal nerve fiber layer thickness

## ORAL 31

### **Food Triggers in Migraine Headache**

Saliha Gökçe<sup>1</sup>, Merve Ceren Akgör<sup>1</sup>, Doğa Vurallı<sup>1</sup>, Bahar Taşdelen<sup>2</sup>, Fatih Gültekin<sup>3</sup>, Hayrunnisa Bolay<sup>1</sup>

*1 Gazi University Faculty of Medicine Department of Neurology and Algology, Neuropsychiatry Center, Neuroscience and Neurotechnology Center of Excellence (NÖROM), Ankara*

*2 Mersin University Faculty of Medicine, Department of Biostatistics & Medical Informatics, Mersin*

*3 Lokman Hekim University Faculty of Medicine, Department of Medical Biochemistry, İstanbul*

#### Abstract text:

**AIM:** Elimination of individual-specific food triggers from the diet makes a significant contribution to the headache management. This study aimed to investigate the relationship between headache attacks and the consumed foods by individuals who have headache complaints in daily life, and to raise awareness about headache triggers.

**METHOD:** In this survey, in which three hundred and five volunteers participated, the age, gender, headache characteristics, duration and frequency of headache, presence of aura, subjective cognitive complaints, consumption behavior, and food triggers for 90 different foods were evaluated.

**RESULTS:** A total of 305 participants completed the questionnaire. The majority were female 78% (n=236) and a smaller proportion was male 22% (n=69) and the mean age was 35.8. Among all participants, 86% (n=263) defined headache and 75% (n=230) defined migraine. 34% of migraineurs described aura symptoms. Individuals with migraine showed avoided consuming wheat bread, butter/cream, dried vegetables, grapefruit and zucchini more than those without migraine ( $p<0.05$ ). In addition, it was observed that migraine with aura patients avoided consuming processed meat products such as sausage, salami, bacon, smoked meat ( $p=0.008$ ), frozen ready meat and chicken products, strawberry and pasta ( $p<0.05$ ) compared to migraine without aura patients. Moreover, it was observed that they experienced headaches on the day they consumed these foods. The MigScog score was found to be statistically significantly higher migraine with aura patients compared to migraine without aura patients ( $p<0,001$ ).

**CONCLUSION:** The majority of the participants described migraine-type headaches. It was determined that migraine headache was associated with consumed foods and food ingredients, as well as cognitive complaints. It was determined that fatty dairy products and processed meat products were avoided and defined as food triggers especially by migraine with aura patients. A food diary should be created by identifying individual food triggers and should be included in headache management. Also, further studies are needed to define which food ingredient is responsible for inducing headaches.

**KEY WORDS:** Migraine, food, aura.

## ORAL 32

### **Nerve Blocks For Geriatric Headache: Retrospective analysis**

Suna Aşkın Turan<sup>1</sup>, Şenay Aydın<sup>2</sup>

<sup>1</sup>: *Mersin City Hospital, Algology Clinic, Mersin, Turkey* <sup>2</sup>: *Yedikule Chest Disease and Thoracic Surgery Training and Research Hospital, Neurology, İstanbul, Turkey*

#### Abstract text:

**Background:** With the prolongation of life expectancy, older aged population is increasing. According to Turkish Statistical Institute population projection statics, in 2025; 15,9% of total population will be over 65. According to Turkey Statistical Institute population projection statistics, 15.9% of total population will be over 65 in 2025 (1). The overall prevalence of headache decreases to 12- 50% with age; however, careful consideration of secondary causes of headaches, comorbidities, altered drug pharmacokinetics and polypharmacy is required in this age group. Coming years, the clinicians may need to find more solutions for geriatric patients.

**Aim:** It's aimed to research types of headaches, medical and interventional treatments for geriatric patients seen by neuroalgologist in a tertiary clinic.

**Method:** In this retrospective study, patients with headache 65 years and older followed at least 3 months between 2020-2021 were selected. From the patient files, ICHD-3 diagnoses, comorbidities, pharmacological and interventional treatments and numeric pain scores were documented. If there was a lack of knowledge in the file or if the patient did not come to control visits for three months or patients under 65 years of age were excluded from the study.

**Results:** Sixty patients ( 28 male, 32 female) aged 65 years and older made 5 visits (initial, 15. day, 1. month, 2. month, 3. month) to the algology clinic during the period specified above. The median age was 76.03 years (range: 65-92). Primary headache was diagnosed in 45 patients (75%), 15 patients (%25) had secondary headache. Neurology clinics referred 31 patients (51,7%). The median duration headaches for which patients needed medical attention was 19,78 ± 17,022 years (range; 6 months-24 years). The primary headaches were chronic migraine without aura 19 (31.7%), chronic migraine with aura 4 (%6,7), trigeminal neuralgia 6 (%10), (Cluster headache 5 (%8,3), hemicrania continua 4 (%6.7), tension headache 3 (%5), SUNCT 2 (%3.3), Hipnic 2 (3.3%). The secondary headaches were mostly ischemic stroke (6, 10%) and cervicogenic headache (4,6.7%). Prophylactic treatment trials were one drug or combination of antidepressants ( duloxetine 41, %68,3, sertraline 19, %31,7 ) and anticonvulsants (gabapentinoids 26, %43,3, carbamazepine 34, %56,7). Interventional treatments were done like as greater occipital nerve/peripheral trigeminal nerve blockage (40, 66.7%), sphenopalatine blockage/rft (10, 16.7%), Gasser RFT (3,5%). Mean numeric pain score was decreased significantly in 3 months. No adverse effect was documented.

**Conclusion:** Headache is a common symptom for neurological and algological consultation among the elderly. Primary headaches were more documented in the older age but secondary headaches should not be ignored. Besides medical treatment, interventional treatments might be safe and effective alternative headache management strategy for older patients.

**Key Words:** Chronic Migraine, Geriatric, Elderly, Gon Block, Gasser Rft

**ORAL 33****Short-Term Efficacy of Combined Treatment of SON Block and Trigger Point Injection in addition to GON Block in Migraine Pain**Şule BİLGİN<sup>1</sup>, Derya GÜNER<sup>2</sup><sup>1</sup>Department of Neurology, Health Sciences University İzmir Tepecik Education and Research Hospital<sup>2</sup>Department of Algology, Health Sciences University İzmir Tepecik Education and Research Hospital**Abstract text:**

**Introduction:** GON and peripheral nerve blocks are frequently and safely applied in patients who have frequent attacks, impaired life quality and do not respond to prophylactic medical treatment in migraine pain.

**Objective:** To show the short term effectiveness of GON block and simultaneous supraorbital nerve (SON) block and trigger point injection (TPI) to the temporal muscle in migraine pain.

**Method:** 28 migraine patients were included this study. Isolated GON block was applied to 12 of them who described pain only in the occipital region. GON + SON block and temporal muscle TPI were applied in 16 patients who describing pain in the frontotemporal region. Unilateral treatment was used for unilateral pain, and bilateral for bilateral pain. The demographic data of the patients were recorded. The Visual Analogue Scale (VAS) values of the two groups were compared at the application and the 10th day after the procedure. GON blocks were administered at cervical 2 level and all blocks performed by the same pain physician under the ultrasound guidance.

**Results:** When the age, sex, frequency of attacks, mean duration of migraine diagnosis and initial VAS value were compared, no statistically significant difference was found between the groups (Table1). VAS values on the 10th days was considerably decreased in both groups. This difference was more pronounced in the combined treatment group (Table 2) .

**Conclusion:** Combined treatment with SON block, temporal muscle TPI and GON block according to the distribution of pain has more significant efficacy in short term severity of migraine attacks.

**Keywords:** Greater occipital nerve(GON) block, Migraine Pain, Headache, Supraorbital nerve (SON) block, Trigger point injection(TPI)

	GON BLOCK	GON+SON BLOCK +TPI	<i>p</i>
Age	42.6±9.7	46.5±2.1	0.319
Sex (m/f)	6/6	22/6	0.13
Migraine diagnosis time(years)	14.3±5.8	16.6±7.1	0.331
Migraine attack frequency (monthly)	8±2.8	10±3.5	0.57

Table 1. Demographic data of migraine patients

	GON BLOCK	GON+SON BLOCK +TPI
VAS – 0	7.7±0.1 <u><i>p=0.002</i></u>	8.1±0.1 <u><i>p=0.000</i></u>
VAS -10th day	2.5±0.2	2.8±0.2

Table 2. Comparison of application and 10th day VAS values.

ORAL 34

**Comparison of the Efficacy of Ultrasound-guided Greater Occipital Nerve Block and Pulsed Radiofrequency Therapy in Chronic Migraine Patients: A Prospective Randomized Controlled Double-Blind Study**

*Dr. Tuba Tanyel<sup>1</sup>, Prof.Dr. Ayten Bilir<sup>2</sup>, Prof.Dr. Sacit Güleç<sup>2</sup>*

*1.Anadolu Sağlık Merkezi Hastanesi Algoloji Birimi 2.Eskişehir Osmangazi Üniversitesi Tıp Fakültesi Hastanesi, Algoloji Bilim Dalı*

Abstract text:

Background and Aim:

Chronic migraine (CM) is related to headache-related disability and reduced quality of life. Therefore, patients with CM require preventive treatment. The aim of this double-blind, comparative-effectiveness study was to compare ultrasound-guided great occipital nerve (GON) block and pulsed radiofrequency (PRF) application in CM patients.

Methods:

The study consisted of 2 groups: GON block (group GONB) and GON block + pulsed RF (group GONB+PRF). Each group had 16 patients. Ultrasound-guided GONB was performed to locate the nerve more accurately. With 0.5 Hz sensorial stimulation, a 5-cm-long radiofrequency needle was advanced under ultrasound guidance in both groups. GON block was performed in all patients by administering 5mg bupivacaine through a PRF needle. After the GON block, the PRF neuromodulation was applied at 42 degrees for 4 minutes in the GONB-PRF group. In the GONB group, no pulse was given. The patients were examined for follow-ups at the 1st, 2nd, 3rd, and 6th months after the procedure. The severity and the number of migraine attacks, and the number of analgesic drugs were noted.

Results:

The results of GONB-PRF group were found to be significantly lower than the results of GONB group in terms of the mean VAS scores, mean number of migraine attacks, and mean number of analgesic drugs with repeated measurements ( $p<0.05$ ).

Conclusion:

Single GONB and GONB-PRF groups improved pain intensity and reduced the frequency of migraine headaches and analgesic use. Performing a pulsed RF after the GON block provided satisfactory analgesia and its effects continued for six months.

Key words: migraine, great occipital nerve, peripheral nerve block, pulsed radiofrequency

## ORAL 35

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### **Evolution of migraine attack duration among adults**

Tugba Okluoglu<sup>1</sup>, Mehmet Ali Sungur<sup>2</sup>, Osman Özgür Yalın<sup>1</sup>, Ufuk Emre Toprak<sup>1</sup>

<sup>1</sup>Department of Neurology, Istanbul Training and Research Hospital, Istanbul, Turkey , <sup>2</sup> Department of biostatistics, Düzce University Health Sciences University, Düzce, Turkey

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#### Abstract text:

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#### **Background**

Migraine is a prevalent neurological disorder characterized by disabling headache attacks. Although headache days/per month is well studied among migraine patients; evolution of attack duration (hours) along in years is not fully investigated to our knowledge. There is lack of study investigated attack duration related factors and tendencies particularly among adults.

#### **Aims**

We hypothesized that due to accumulated attacks through years and decades, migraine attack duration could be prolonged. We grouped patients according to attack duration (short (4-12 hours), medium duration (13-24 hours) and long duration (>24 hours)) and evaluated related factors and tendencies.

#### **Results**

The study group consisted 694 patients. Long attack duration (>24 hours) group were significantly older ( $p<0.001$ ). We observed a significant linear association with increasing age and attack duration. Longer attacks observed more common at females ( $p=0.007$ ). Headache days frequency per month were similar between groups. Headache history (for months) were significantly differed for long attack group ( $p<0.001$ ). This feature also showed a linear association similar to age of patients (median values for groups 60, 72, 120 months respectively). The long attack groups' pain intensity was significantly higher than others ( $p<0.001$ ).

#### **Conclusion**

This study reveals migraine attack duration is significantly changing with age of sufferer and disease course. This novel finding supports attack duration evolution throughout the life. This is the first study explicitly reveals attack duration's association with patient age and disease duration among adults.

Key words: migraine, attack, duration

## ORAL 36

### **Combination of cluster headache and ischemic stroke**

Valeeva Kadria Gusmanovna, *neurologist, a physician of functional diagnostics, of the department for the treatment of patients with Stroke, City Clinical Hospital No. 7, Kazan, Russian Federation*

Perminova Svetlana Konstantinovna, *neurologist of the department for the treatment of patients with Stroke, City Clinical Hospital No. 7, Kazan. Russian Federation*

#### Abstract text:

A 42 years old man, with history of hypertension, presented to emergency department with complaints of gait instability, unsteadiness when walking, diffuse headache on a visual analogue pain scale - 3 points. His wife noted that the: complaints appeared acutely in the morning after waking up, blood pressure was increased to 160/90 mm Hg, taking into account the safety of complaints, an ambulance was called, delivered to hospital. According to patient's words, over the past 2 years, he has noted headaches, that he did not examine by doctor. His current medication comprises enalapril 5 mg twice a day and analgesics for a headache attack.

On day of admission, the patient's temperature is 36.6°C; heart rate, 64 beats/min; and blood pressure, 170/90 mmHg. General physical examination is unremarkable. The neurologic examination reveals horizontal nystagmus to the right, motor and sensory evaluation, reflexes, and cranial nerve function were normal NIHSS- 0 points, MoCA -28, HADS -10/3.

The electrocardiogram is normal. Complete blood count, electrolytes, blood urea nitrogen (BUN), creatinine, glucose, urinalysis, prothrombin time (PT), and partial thromboplastin time (PTT) are normal. Noncontrast head CT no found any pathology. MRI of the brain demonstrated an ischemic focus of 5 mmx7 mm in the right hemisphere of the cerebellum, a single focus of gliosis in the parietal lobe on the right. MRA of the brain - open circle of Willis: absence of the posterior communicating artery.

On the 3<sup>rd</sup> day of treatment, the patient developed an attack of burning pain principally in area of the left eyeball according to visual analogue pain scale 10 points with irradiation to the cheek, teeth, left ear with mucous membranes nasal discharge, conjunctival hyperemia and severe lacrimation. The patient was agitated. The duration of the attack against the background of giving humidified oxygen and administration of analgesics was 7-8 minutes. The attack was repeated the next day, lasting 3 minutes and less intense. Humidified oxygen is used.

In addition to the medical history, the patient reported that similar attacks of pain had been bothering him over the past 2 years, the attacks lasted in series up to 3 times a day for 20-30 minutes with an interval of 3 to 6 months. The patient did not receive diagnosis and treatment, took analgesics during attacks. The attacks occurred on background of provoking factors (alcohol intake, in connection with which the patient stopped taking alcohol), as well as without provoking factors.

The patient was treated with intravenous antioxidant, antihypoxic, antithrombotic and, antihypertensive therapy. Against the background of the treatment, the condition has improved:

Due to the high level of anxiety, an antidepressant and psychotherapy was added to the patient's treatment. At discharge, intranasal lidocaine was added for seizures.

The presented case is interesting for the revealed combination of two serious diseases: ischemic stroke and cluster headache. As we know, primary headache diseases is suggestive of an incremental risk of ischemic stroke. Timely diagnosis allows you to apply the right tactics treatment, in this case the exclusion of the use of triptans. Features of the course of this case: the use of antidepressants and psychotherapy in order to correct the psycho-emotional status of the patient allowed to stop a series of attacks of pain syndrome and, accordingly, improve the course and prognosis ischemic stroke.

Key words: acute cerebrovascular accident, cluster headache, factors of risk

## POSTER 1

### **Clinical, therapeutic aspects of trigeminal neuralgia and quality of life in Dakar hospitals**

Ahmadou Bamba Mbodji (1), Lala Bouna Seck (1), Khalifa Ababacar Mbaye (1), Rokhaya Diagne (1), Serigne Saliou Mbacké (1), Moustapha Ndiaye (1), Amadou Gallo Diop (1)

(1) Neurology Department, Fann Hospital University

#### Abstract text:

**Background :** Trigeminal neuralgia (TN) is a condition characterised by unilateral, recurrent pain, similar to brief electric shocks, with abrupt onset and end. Its incidence is 5 new cases per year per 100,000 inhabitants. It can be very disabling and affect the quality of life of patients.

**Aim:** Describe the clinical, therapeutic and evolutionary aspects of trigeminal neuralgia in Dakar hospitals.

**Methodology:** This was a descriptive cross-sectional study from 1 January 2019 to 31 July 2021. Patients who met the diagnostic criteria for trigeminal neuralgia according to the ICHD-3 and who are followed in a hospital in Dakar were included in the study.

**Results:** 26 patients were included in the study (extremes 25 to 74 years). The mean time to diagnosis was 42.54 months (range 2 days to 168 months). The sex ratio was 0.44. The isolated V2 was the most frequently affected branch (53.9%), followed by the combined V1+V2+V3 (19.3%). The nasolabial fold was the most frequent trigger zone (34.6%) followed by the pre-tracheal region (26.9%). It should be noted that 3 patients had symptomatic neuralgia. Carbamazepine was the most frequently prescribed drug (96.2% of patients) followed by amitriptyline (34.6%). Alcoholization was used in 3 patients (11.5%). The evolution was favorable in most patients with a Barrow score of 3 at 84.6%. However, the quality of these patients was impaired with an average BPI score of 6.45/10.

**Conclusion:** Trigeminal neuralgia is a rare condition that can be disabling. It has rarely been studied in sub-Saharan Africa. It significantly alters the quality of life and requires multidisciplinary management.

**Keywords:** Trigeminal neuralgia, IHCD-3, Subsaharian Africa,

## POSTER 2

### **Case report: Orthostatic dizziness as a late presentation of undiagnosed spontaneous intracranial hypotension**

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1, Department of neurology and algology, Faculty of medicine, Gazi university, Ankara

2, Headache department, Iranian Center of Neurological Research, Neuroscience Institute, Tehran University of Medical Sciences

#### Abstract text:

**Background:** Spontaneous intracranial hypotension (SIH) is characterized by postural headache. One of associated clinical symptoms is audio-vestibular complaints which consist of hearing loss, tinnitus and dizziness.

**Case:** A 24-years old girl presented to Emergency department with severe dizziness in the upright and sitting position that even she couldn't walk, and improved by laying down. She has had a history of nonspecific headaches for four weeks, which lasted a few seconds and were triggered by standing up. Vital signs and examination were normal. The tilt test was negative. Brain MRI revealed diffuse meningeal enhancement, pituitary hyperemia and venous engorgement. With five days of bed rest, hydration, and oral caffeine, she could sit without dizziness, and the headache was relieved.

**Conclusion:** The symptoms of SIH are highly variable, and the orthostatic headache is sometimes present only at the onset. sometimes the associated symptoms become more prominent than headache. SIH is an uncommon condition, so it's essential to consider new-onset headaches, specially atypical presentations. Early diagnosis and conservative treatment can prevent invasive procedures.

**Key words:** spontaneous intracranial hypotension, headache, orthostatic dizziness

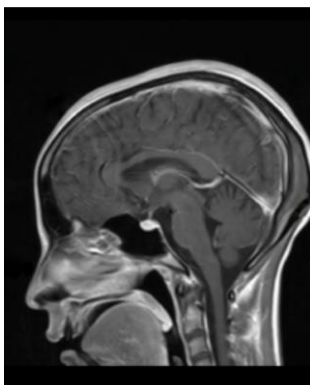


Figure: post gadolinium, sagittal T1 weighted sequence of MRI revealing a diffuse meningeal enhancement and pituitary hyperemia.

### POSTER 3

#### **Carbamazepine-induced drug rash with eosinophilia and systemic symptoms (DRESS) syndrome: a case report**

Gözde Çelik MD, Ahmet Cemal Kaya MD, Fatamah Farham MD, Nurten İnan MD Professor.

Department of Algology, Gazi University, Ankara, Turkey

#### Abstract text:

##### Background

Drug rash with eosinophilia and systemic symptoms (DRESS) is a rare, severe adverse drug event that appears with a generalized rash, fevers, and dysfunction of 1 or more organ systems. Most of the aromatic anticonvulsants, such as phenytoin, phenobarbital, and carbamazepine, can induce DRESS. We describe a 32-year-old woman who presented fever and rash 10 days after starting carbamazepine for trigeminal neuralgia.

##### Aim

The aim of this case report is to raise awareness among doctors to suspect DRESS syndrome in patients who present with unusual complaints and skin findings after starting any antiepileptic drug and describe possible interventional treatments.

##### Method/ Case Report:

A 32-year-old female patient with no known disease was admitted to the dermatology department with rash and fever, after 10 days starting carbamazepine(400mg/day) for trigeminal neuralgia. The patient with fever, rash, and elevated liver function tests was hospitalized in the dermatology service with the diagnosis of DRESS syndrome. The patient who had severe, unilateral, and electric shock-like episodic facial pain in the V2-3 dermatome was consulted for the treatment of pain.All drug treatments were stopped due to liver failure. Daily lidocaine iv (3mg/kg), transnasal sphenopalatine block, and axillary/mandibular nerve peripheral block/PRF were applied to the patient. The patient benefited from the treatment. No pain in the last 6 months in the follow-up.

##### Results

Although rare, DRESS syndrome can be associated with significant morbidity, including liver failure and death. Under these circumstances, the patient's pain treatment may need to be managed, and interventional treatments should be considered.

##### Conclusion

In the treatment of trigeminal neuralgia, interventional procedures can be used when all drugs need to be stopped. More work is needed on this subject.

##### Keywords

Carbamazepine, Trigeminal neuralgia, DRESS Syndrome

## POSTER 4

Hakan Ekmekci\*, Fettah Eren, Şerefnur Öztürk,  
Selçuk University, School of Medicine, Department of Neurology, Konya – Turkey

### Abstract text:

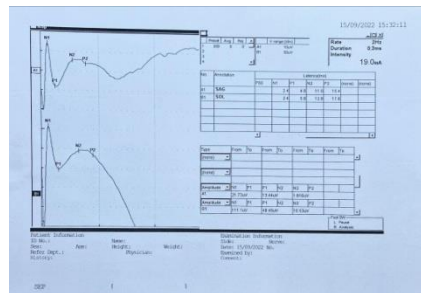
#### Background&Aim:

Migraine pathogenesis is still mystery; many important structure is involved, trigeminal system, brain stem and cerebral cortex. We aimed to clarify any differentiation in between migraine with or without aura on be half of trigeminal nevre somatosensorial evoked potentials (tSEP).

#### Methods:

37 (26 female, 11 male) sufferer of migraine (28 without aura and 9 with aura) people and 30 (21 female and 9 male) healthy volunteer were included.

tSEPs were recorded in all migraine sufferers (with or without aura) during interictal period and all healthy volunteers. Especially, patients with aura were tried to be recorded at the phase of aura in 24h. Distal latencies of N1, P1, N2 and P2 waves, excitability thresholds, stimulation intensities as well as N1/P1 and N2/P1 amplitudes were measured.



#### Results:

The results of total migreneous patients and control group showed no differences in comparison of ipsilateral latencies with N1-P1 and N2-P2 amplitudes and distal latencies. But sensory excitabilation and stimulation thresholds were differed in two groups on be half of increased migraine attack numbers and prolonged migraine years.

And important differences were faced in migraine groups with or without aura phase. Sufferers with aura yielded increased N1-P1 and N2-P2 latencies and decreased amplitudes. (p=0.29).

#### Conclusions:

This study showed and important differences between migraine with and without aura during interictal period or near attack period on be half of tSEP investigations. This may indicate that aura phase affects on tSEP and this effect is measurable on the pathways of the cortical and brainstem and may be peripheral trigeminal neuronal traces during attacks and interictal periods.

**Key words:** migraine, aura, trigeminal somatosensory evoked potential

## POSTER 5

### **Headache triggers in primary headache disorders: A subgroup analysis of the Head-MENAA study**

Genc H.,<sup>1</sup> Vurallı D.,<sup>2</sup> Uluduz D.,<sup>3</sup> Kocasoy Orhan E.,<sup>4</sup> Kissani N.,<sup>5</sup> Luvsannorov O.,<sup>6</sup> Cevik, I. U.,<sup>7</sup> Togha, M.,<sup>8</sup> Ozdemir A. A.,<sup>9</sup> Head-MENAA study group, and Ozge A.,<sup>10</sup>

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<sup>2</sup> Gazi University, Medical Faculty, Department of Neurology, NÖROM, Ankara, Turkey

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<sup>4</sup> Istanbul University, Istanbul Faculty of Medicine, Department of Neurology, Headache Center, Istanbul, Turkey

<sup>5</sup> Mohamed VI Teaching Hospital, Department of Neurology, Marrakech, Morocco

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<sup>7</sup> Hacettepe University, Medical Faculty, Department of Neurology, Ankara, Turkey

<sup>8</sup> Tehran University of Medical Sciences, Department of Neurology, Tehran, Iran

<sup>9</sup> University of Mersin, Department of Biostatistics and Medical Informatics, Mersin, Turkey

<sup>10</sup> Mersin University, Medical Faculty, Department of Neurology, Mersin, Turkey

#### Abstract text:

##### Background and Aim

At least one headache trigger was reported by the majority of primary headache sufferers. These headache triggers may guide physicians in the proper management of headaches. However, the details of headache triggers were rarely investigated in all subtypes of primary headache disorders in large patient groups. We aimed to demonstrate triggers in all types of primary headache disorders.

##### Method

The study was designed as a cross-sectional multicenter international study. Sixty-nine headache specialists from 13 countries (Azerbaijan, Chad, Cyprus, Egypt, Ethiopia, Iran, Ivory Coast, Mongolia, Morocco, Senegal, Sudan, Tatarstan, and Turkey) evaluated headache patients who applied to neurology clinics. Researchers recruited patients on different weekdays selected by the research randomizer program for five consecutive weeks in April and May 2022. Researchers used the Head-MENAA study questionnaire and ICHD-3 criteria when they evaluated patients. After their consent, three thousand four hundred fifty-four patients were included in the study.

##### Results

Primary headaches were diagnosed in 79.8% (2972) of patients; 74.3% were women; the mean age was 42.8±14.8 years. Migraine was the most prevalent (65.2% ), followed by tension-type headache (TTH) (%38.2), trigeminal-autonomic cephalalgia (TACs) 4%, and other primary headache disorders (3.3%).

Triggering factors identified for all primary headaches were stress (63.6 %), sleep deprivation/oversleeping (47.4%), tiredness, excessive physical activity, and hunger, followed by others, as seen in Figure 1.

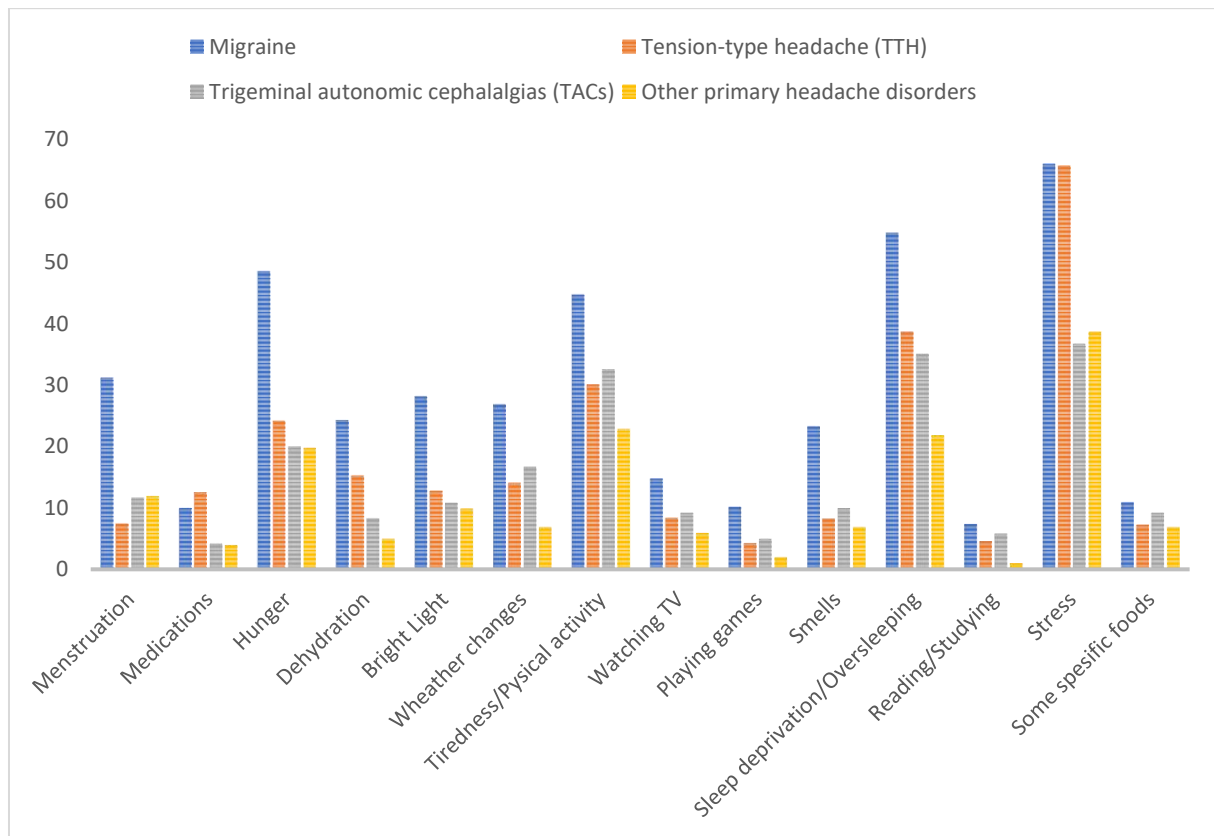


Figure 2: Headache triggers identified in primary headache disorders

### Conclusion

The distinguishing features of our study are that headache triggers were investigated in different ethnic origins and geographic regions, in a larger patient group, and in all types of primary headaches. Stress, sleep pattern change, and physical activity leading to tiredness and hunger were identified as triggering factors for migraines and other primary headaches.

Keywords: Head-MENAA study, primary headache disorders, headache triggers

## POSTER 6

### **Neurobrucellosis case presenting with headache and diplopia: An endemic problem**

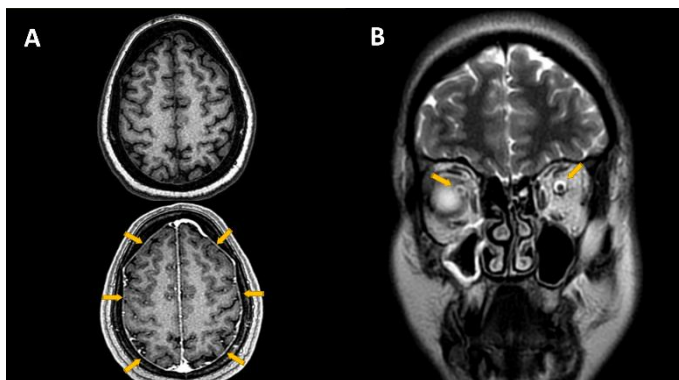
GENC Hamit<sup>1</sup>

<sup>1</sup>SBU Van Education and Research Hospital, Department of Neurology, Van, Turkey

#### Abstract text:

**Background and aim:** Neurologic involvement occurs approximately in 10 percent of brucellosis cases. Manifestations include meningitis (acute or chronic), encephalitis, brain abscess, myelitis, radiculitis, and/or neuritis. We would like to emphasize crucial points that physicians must be familiar with during neurobrucellosis diagnosis.

**Case:** A 30-year-old female patient applied to the emergency department with a headache that had lasted for a month and increased for the last three days. The headache was unilateral and localized to the vertex. The headache was constant and throbbing. The pain was severe and accompanied by nausea. She had a buzzing in her ear. There was no accompanying autonomic finding. Analgesics response for headache was limited. The headache had been accompanied by a double vision for the last two days. The patient's vital signs were stable, and the fever was 36.5. Her neurological examination revealed esotropia and papilledema in the left eye. Another neurological examination was normal. There was no neck stiffness. In laboratory examination, there was any feature except for iron lack and erythrocyturia. Brain MRI showed that the optic nerve sheaths were dilated and had dural enhancement. The color of CSF (Cerebrospinal fluid) was clear and odorless. CSF pressure was measured at 45 cmH<sub>2</sub>O. Cell count was counted normally. CSF glucose was 28.1 mg/dL (low), and protein was normal. There was the growth of *Brucella* spp. in CSF culture. Rose bengal test was positive, and brucella antibody titer was 1/5120. There was no growth in the blood culture. She was diagnosed with neurobrucellosis. Ceftriaxone 2x2000 mg, rifampicin 1x600 mg, doxycycline 2x100 mg, acetazolamide 2x1000 mg were started. After 3 months, the patient's clinic improved, and her treatment was completed. Other complications related to brucellosis were not observed.



*Figure 1: A; Axial section of T1 weighted of brain MRI shows dural enhancement, B; Coronal section of T2 weighted of brain MRI shows the optic nerve sheaths are dilated.*

Conclusion: Brucellosis typically presents with insidious onset of fever, malaise, night sweats, and arthralgias. The fever pattern is variable. Additional symptoms may include weight loss, arthralgia, low back pain, headache, dizziness, anorexia, dyspepsia, abdominal pain, cough, and depression. Brucellosis can affect any organ system, such as neurologic, cardiovascular, pulmonary, ocular, and dermatologic. Ocular involvement is rare. The absence of fever and nuchal rigidity, normal infection parameters, and CSF cell count were the confounding factors in our patient. However, progressive headache with severe and acute onset and accompanying neurological symptoms should alert the physician regarding secondary headache. Dural enhancement and the dilated optic nerve sheaths in neuroimaging; indicate meningeal involvement and increased intracranial pressure. Also, the fundoscopic examination can detect papilledema and may support increased intracranial pressure diagnosis. In such cases, CSF examination is needed for a differential diagnosis. Pleocytosis, mild to moderately elevated protein levels, and hypoglycorrhachia in CSF examination must warn physicians of bacterial pathogens. Considering endemic infectious pathogens, additional examinations may guide the physician. For example, adenosine deaminase level may be a useful adjunctive test for diagnosing central nervous system brucellosis. Early diagnosis and treatment significantly prevent some dangerous complications of brucellosis, such as encephalitis and brain abscess.

## POSTER 7

### **Migraine management with peripheral nerve blocks during pregnancy: a case report**

Hazal Çetin MD, Doğa Vurallı MD

Department of Neurology, Gazi University, Ankara, Turkey

#### Abstract text:

##### Background:

While pregnancy may reduce migraine attack frequency, many women have a stable or worsening course and may even experience first-time migraine attacks. Despite the high prevalence of migraine, acute treatment of migraine can be difficult during pregnancy, because of a lack of medication trials and fears of teratogenicity. Peripheral nerve blocks are common interventions for migraine which provide rapid pain relief with minimal side effects.

##### Aim

The aim of this case report is to raise awareness among doctors of migraine management with peripheral nerve blocks during pregnancy.

##### Method/ Case Report

A 41 year old, 14-week pregnant patient was admitted to our headache outpatient clinic with a complaint of headache. She had headaches since she was 15 years old. She had a bilateral, pulsating headache with accompanying photophobia, phonophobia, and nausea. She did not have any aura symptoms. The pain intensity was severe with a visual analogue scale score of 9/10 and continued for up to 72 hours. Her headache got worse in the second trimester where she developed daily headaches. She had no accompanying neurological complaints. She had a history of anxiety disorder and asthma. Her neurological examination and brain imaging was normal. We performed bilateral greater occipital nerve blocks with lidocaine. She benefited from the therapy. She was followed during the pregnancy period and her headache relieved with repetitive bilateral greater occipital nerve blocks as needed.

##### Results

Repetitive greater occipital nerve blocks with lidocaine decreased the headache frequency to less than once a week and decreased the headache intensity more than 50% and decreased the need for acute migraine medications such as paracetamol.

##### Conclusion

Nerve blocks are safe and effective treatment options for migraine and other headache disorders as an acute therapy as well as for short-term prevention in pregnancy.

##### Keywords

Pregnancy, migraine, peripheral nerve blocks

**POSTER 8**

**HANDL SYNDROME: THE INNOCENT LYMHOCYTIC PLEOCYTOSIS**

CARUS K.İ<sup>(1)</sup>, KESKİN K.G<sup>(1)</sup>, KALCONCU ASLAN I<sup>(1)</sup>, GOZKE E<sup>(1)</sup>

<sup>(1)</sup> SCIENCES OF HEALTH UNIVERSITY, FATİH SULTAN MEHMET TRAINING AND RESEARCH HOSPITAL, NEUROLOGY DEPARTMENT

**Abstract text:**

HaNDL Syndrome is a transient and rare condition that presents with neurological deficit and headache, accompanied by lymphocytosis on cerebrospinal fluid analysis. It is usually characterized by spontaneous recovery, without neurologic sequelae. This is a benign condition, which has not yet been adequately defined, usually iterates in a 3-month period, however, includes many diseases in the differential diagnosis and generally difficult to diagnose.

We presented two different cases who presented to our clinic with acute neurologic findings and were initially considered to have acute ischemic stroke and epileptic seizure. We evaluated the patients as HaNDL syndrome with clinical features, central imaging and laboratory findings.

Therefore, we wanted to raise awareness for existence of this rare disease which is a waste of time by performing unnecessary tests and therapies in diagnosis period.

## POSTER 9

### **Characteristics and Challenges in Management of Migraine in Children: An Egyptian study**

Mona AF Nada

Professor of Neurology, Cairo University, Egypt.

#### Abstract text:

**Background:** Approximately 3 to 5 % of young children and 18% of adolescents experiences migraine attacks. Prophylactic treatments present challenge to physicians to convince parents to start these drugs.

**Aim:** To study the clinical features of migraine in children and analyze challenges in their management.

**Methods:** A cross sectional study was performed over 2 years in a tertiary hospital and private center in Egypt. Diagnosis of migraine in pediatric age group with aura (MA) or without aura (MO) was based on the ICHD-III criteria. Patients were classified into 3 groups according to educational status: Group I: preschool age (Up to 6 years), Group II: primary school (7 to 12) and Group III: Middle and secondary School (13 to 18 years).

**Results:** Migraine was diagnosed in 80 children (16.8% MA, 83.2% MO). The majority of diagnoses were made in group II and III with almost 42% in group III. Females were more common in Group II and III while males were more in preschool age. Monthly migraine days were higher in group III. Headache severity, using visual analog scale, was more in group I followed by group III. Photophobia was present in 86.4%, followed by nausea/vomiting, phonophobia, dizziness and osmophobia. Parents refused or delayed prophylactic treatment in 45% of patients especially in group I.

**Conclusion:** Characteristics of pediatric migraine differ in different age groups. Management carries a lot of challenges related to diagnostic inertia, impact on quality of life and challenges in prophylactic medications.

**Keywords:** Migraine, pediatrics, prophylactic treatment

## POSTER 10

### **Long-Term Treatment With Lasmiditan in Patients With Migraine: Results From the Open-Label**

#### **Extension of the CENTURION Study**

Authors: Prof. Messoud Ashina,<sup>1</sup> Dr. Caroline Roos,<sup>2</sup> Dr. David Ayer,<sup>3</sup> Dr. Dustin Ruff,<sup>3</sup> Dr. John Krege,<sup>3</sup> Dr. Lily Qian Li,<sup>3</sup> Dr. Mika Komori<sup>4</sup>, Dr. Mustafa Iskender (Non-author Presenter)<sup>5</sup>

<sup>1</sup>Danish Headache Center, Dept. of Neurology, Rigshospitalet Glostrup, University of Copenhagen, Copenhagen, Denmark; <sup>2</sup>Hôpital Lariboisiere, Assistance Publique - Hôpitaux de Paris, Paris, France; <sup>3</sup>Eli Lilly and Company, Indianapolis, IN, USA; <sup>4</sup>Eli Lilly and Company, Kobe, Japan; <sup>5</sup>Eli Lilly and Company, Istanbul, Turkey

#### Abstract text:

**Background/Aim:** This OLE collected data for  $\leq 1$  year about dose optimization, patterns of use, migraine-related disability, and quality of life during lasmiditan treatment.

**Method:** Patients (pts) who completed the CENTURION study (EUDRACT: 2018-001661-17 / NCT: NCT03670810) started lasmiditan 100 mg; dose may adjust to 50/200 mg. Migraine Disability Assessment (MIDAS) and Migraine Specific Quality of Life Questionnaire (MSQ) were used.

**Results:** In all, 445 (intention-to-treat) treated  $\geq 1$  attack with lasmiditan. 8654 of 11327(76.4%) attacks were treated with lasmiditan (84.9% were moderate/severe pain). Reasons for not treating with lasmiditan were planning to drive or operate machinery (8% of attacks) or thought another medication would work better (6% of attacks). Most pts (47.0%) remained on 100 mg. Mean improvements in MIDAS Total Score was -13.0(24.9) at month 12. Mean improvement in the MSQ total score was 11.3(19.4) at month 12. Treatment-emergent adverse events (TEAEs) reported in  $\geq 5\%$  of pts included dizziness, paresthesia, fatigue, nausea, vertigo, somnolence, and asthenia. Most TEAEs were mild/moderate in severity. Four (0.9%) pts reported a serious TEAE; 1(0.2%) self-reported case of serotonin syndrome lasting 1 hr:40 min not requiring intervention was considered related to lasmiditan.

**Conclusion:** In the relatively real-world conditions, lasmiditan therapy was associated with a high completion rate (72.1%). Most attacks were treated with lasmiditan and remained on 100 mg throughout. Pts showed improvements in migraine-related disability and quality of life. There were no new safety findings.

**Keywords:** Completion rate, Dose optimization, Lasmiditan, Migraine-related disability, Quality of life

COI:

1. Messoud Ashina: M.A. is a consultant, speaker, or scientific advisor for AbbVie, Allergan, Amgen, Eli Lilly, Lundbeck, Novartis, and Teva and a primary investigator for ongoing AbbVie/Allergan, Amgen, Eli Lilly, Lundbeck, Novartis, and Teva trials. M.A. has no ownership interest and does not own stocks of any pharmaceutical company. M.A. serves as associate editor of Cephalalgia, associate editor of the Journal of Headache and Pain, and associate editor of Brain
2. Caroline Roos: Consulting Fee : TEVA, Lilly, Lundbeck, Allergan/Abbvie, Novartis Honoraria for Promotional Speakers : Lilly, Homeperf, TEVA, Allergan/Abbvie Research Funding : Lilly, Lundbeck, Allergan/Abbvie, Amgen
3. David Ayer, Dustin Ruff, John Krege, Lily Qian Li, Mika Komori, Mustafa Iskender: Current employee of and owns minority stock in Eli Lilly and Company



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