Headache and pain 1

EP1229
The effects of transcutaneous electrical nerve stimulation (TENS) for patients with low back pain: first two randomized controlled trials in Russia with dynamic TENS devices
L. Akhmadeeva1, G. Rayanova1, N. Blinova1, B. Veytsman2
1Department of Neurology, Bashkir State Medical University, Ufa, Russian Federation, 2George Mason University, Fairfax, VA, United States
Introduction: TENS is well known for management of different pains. But randomized controlled trials (RCTs) that could be analysed and included into Cochrane reviews are still not too many, and the effects of TENS are still in the focus of interest for clinicians and researchers. New compact devices for dynamic TENS need even more attention as those that can be used in out-patient clinics and at home for patients with low back pain (LBP).
Methods: We designed and completed two RCTs to evaluate if compact dynamic TENS (cDENS) devices are helpful for LBP management. Trial I (blind) compared cDENS effects with placebo (sham device produced for this study by the manufacturer); Trail II compared cDENS and classical TENS device used for in-patients at neurology ward of our University hospital.
Results: There were 100 patients in 4 groups: Group 1 (sham device) and Group 2 (cDENS device) included 15 patients each in the first pilot RCT; Group 3 (36 patients used cDENS) and Group 4 (34 patients used classical TENS at neurology ward) were included into Trial II. All patients showed improvement after therapy (p<0.01), but the results in Group 2 were better than in Group 1 since Day 9 (p=0.016), and the pain reduction was faster and better in Group 3 vs Group 4 after Day 6. We also calculated which characteristics could predict response for cDENS therapy.
Conclusions: Both TENS methods helped for LBP management, but cDENS device showed even more effect than classical one.
Disclosure: Grants from the Russian Ministry of Science and Education (Moscow, Russia) and from DENAS Corporation (Ekaterinburg, Russia) for these trials.

EP1230
Effects of stimulating melanopsin-containing retinal ganglion cells in migraine patients using multifocal objective pupillometry
E.N. Ali1, T. Maddess1, C.F. Carle1, C. Lueck2
1Department of Neuroscience, The John Curtin School of Medical Research, Australian National University, 2Department of Neurology, Canberra Hospital, Australian National University Medical School Acton, Canberra, ACT, Australia
Objectives: To establish the effects of stimulating intrinsically-photosensitive retinal ganglion cells (ipRGCs) using multifocal pupillographic objective perimetry (mPPOP) on migraine severity parameters and pupillary response characteristics.
Methods: A randomized case-control crossover study tested migraineurs and normal controls using mPPOP utilising a blue protocol (BP) to stimulate ipRGCs and a yellow protocol (YP) to stimulate cone photoreceptors. Migraine diaries were obtained a week prior to, and a week after each testing. Responses were analysed according to response time-to-peak and standardised amplitude (AmpStd). The percentage area under the receiver operator characteristic (%AUC) was used to predict migraine status.
Results: 38 migraineurs (41.97±16.02 years, 23 females) and 24 normal controls (39.17±14.84 years, 14 females) were enrolled. There was no significant difference in the mean number of migraine attacks/subject in the weeks prior to, or following, testing with either protocol. The AmpStds (in dB) were lower for migraineurs than controls: 9.04±11.2 (mean ± SE) vs. 9.48±10.4 for BP, and 10.74±4.96 vs. 11.4±5.23 for YP, though these differences did not reach statistical significance. A migraine attack occurring in the 2 weeks prior to testing had a significant independent effect in lowering AmpStd while a history of triptan use increased AmpStd. The %AUC was highest for AmpStd (77.2% for BP and 84.6% for YP).
Conclusions: Stimulating ipRGCs did not affect migraine severity. Pupillary response characteristics were influenced by recent attacks of a migraine and a history of triptan use.
Disclosure: Nothing to disclose.
EP1231
Neuromuscular transmission studied with SFEMG in migraine with aura: phenotypic correlations in 93 patients

A. Ambrosini1, C. Di Lorenzo2, L. Di Clemente3, V. Bohotin4, A. Maertens de Noordhout5, J. Schoenen6
1Headache Clinic, IRCCS Neuromed, Pozzilli, 2Don Carlo Gnocchi Onlus Foundation, 3Dept Neuroscience, University ‘La Sapienza’ of Rome, Rome, Italy, 4CH ‘Louis Pasteur’, Chartres, France, 5University Dept Neurology, 6Headache Research Unit, University Dept Neurology, CHR Citadelle, Liège, Belgium

Introduction: Single-fiber electromyography (SFEMG) showed mild subclinical abnormalities of neuromuscular transmission in subgroups of migraine patients with complex neurological auras. The objective of this study was to test the hypothesis that distinct neuromuscular abnormalities are correlated with different aura phenotypes.

Methods: Stimulation SFEMG in m. extensor digitorum communis was performed in 21 healthy controls and 127 migraineurs, 34 without aura, 93 with aura; in the latter group, 77 had typical aura with headache (MTA), 6 brainstem aura (BM), 7 sporadic hemiplegic migraine (SHM), 3 familial hemiplegic migraine (FHM). Among MTA 35 patients had only visual auras, 25 complex auras (visual plus somatosensory and/or language disturbances) and 17 prolonged auras. Results were expressed as the average mean MCD (mean consecutive difference) and single endplate abnormalities (i.e. percentage of fibers with increased jitter and presence of intermittent impulse blocking).

Results: Average mean MCD did not differ between controls and migraineurs, or in migraine subgroups, but it was significantly higher in SHM. Mild single endplate abnormalities were observed in BM and S/FHM. Increased average mean MCD was associated with aphasic or motor aura, increased jitter with sensory aura, and with a diagnosis of complex aura and S/FHM.

Conclusions: We confirm that mild subclinical neuromuscular transmission abnormalities can be identified in subgroups of migraineurs with aura. As they vary with the aura phenotype, they could be due to different pathophysiological mechanisms involving ion channels or muscle metabolism, and hence to different genotypes.

Disclosure: Nothing to disclose

EP1232
Visual and auditory evoked potentials in migraine: sensitivity and specificity as diagnostic tools

1IRCCS Neuromed, Pozzilli, Italy, 2University of Glasgow, Glasgow, United Kingdom, 3University of Padua, Padua, Italy, 4National Institute Neurosurgery, Budapest, Hungary, 5IRCCS Bietti Foundation, Rome, 6University ‘La Sapienza’ of Rome - Polo Pontino, Latina, 7University of Rome ‘La Sapienza’, Rome, Italy, 8University of Liège, Liège, Belgium, 9University of Zurich, Zurich, Switzerland

Introduction: There are at present no reliable instrumental tests for the diagnosis of migraine. Many migraineurs are characterized interictally by a habituation deficit of visual evoked potentials (VEP) and/or increased intensity dependence of auditory evoked potentials (IDAP). In this retrospective study we tested the usefulness of VEP and IDAP as diagnostic tools in episodic migraineurs (EM).

Methods: We analyzed recordings from 360 healthy volunteers (HV) and 624 EM. VEP50 (5 blocks of 50 responses) were obtained in 77 HV and 231 EM, VEP100 (6 blocks of 100 responses) in 240 HV and 280 EM, IDAP in 86 HV and 328 EM. Some subjects underwent both VEP and IDAP tests. Thresholds were calculated by Receiver Operating Curve analysis, and used to calculate sensitivity, specificity and efficacy of each test.

Results: Sensitivity was 61.0% for VEP50, 61.4% for VEP100 and 45.7% for IDAP. Specificity was 77.9% for VEP50 and VEP100 and 87.2% for IDAP. Efficacy was 65.3% for VEP50, 69.0% for VEP100 and 54.3% for IDAP. In subjects who underwent both VEP and IDAP tests, abnormality of at least one of them had a 83.4% sensitivity, 66.7% specificity and 81.1% efficacy.

Conclusions: Taken alone, none of VEP or IDAP has sufficient diagnostic efficacy. However, when both tests are combined in the same patient, abnormality of at least one of them is highly predictive of migraine, suggesting that VEP and IDAP can contribute to the migraine diagnosis.

Disclosure: Nothing to disclose
EP1233

Medication overuse headache: a 12-year follow-up study of 77 patients

Y. Beckmann, S. Gökçe, A. İnceoğlu
Department of Neurology, Katip Çelebi University, Atatürk Training and Research Hospital, Izmir, Turkey

Objective: To assess the long-term outcome of patients with medication overuse headache (MOH).

Background: MOH is a common disease and management is complicated by treatment failure and relapses.

Methods: The study population consisted of 77 consecutive patients treated and followed between 2001 and 2013 in our tertiary headache centre. MOH patients included in this study according to the classification of headache disorders of the International Headache Society 2004.

Results: A total of 77 patients (67 female/10 male, mean age 40.71) completed this study. Based on headache characteristics on evaluation, 58 (75.3%) were diagnosed with migraine. Sixteen patients (20.7%) gave a history of tension-type headache. Three patients (4%) reported a combination of migraine and tension type headache. The most commonly used drugs were nonsteroid antiinflammatory drugs (NSAID) (54%), combination of ergot and NSAID (28.5%), and ergots (17%). The duration of medication use was between 1 and 29 years (mean: 5.4 years). They underwent a structured detoxification programme and were subsequently closely followed. At 12-year follow-up, fifty eight patients (77%) remained cured of MOH, reduction in headache frequency of more than 50% occurred in 16 patients (20%), and 3 patients (3%) reverted to episodic headache.

Conclusion: This long-term follow-up study revealed a marked decline in the frequency of MOH. Patients with MOH previously regarded treatment-resistant benefit considerably from multidisciplinary treatment and close follow-up.

Disclosure: Nothing to disclose

---

EP1234

Abnormal thalamic function in patients with vestibular migraine

E. Conte1, A. Russo2, V. Marcelli3, F. Esposito4, V. Corvino1, L. Marcuccio1, A. Giannone1, R. Conforti5, E. Marciano5, G. Tedeschi2, A. Tessitore1
1Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, 2Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, SUN-FISM Center, IDC 'Hermitage Capodimonte', Second University of Naples, 3Department of Neuroscience, University of Naples 'Federico II', Naples, 4Department of Medicine and Surgery, University of Salerno, Salerno, 5Neuroradiology Service, Second University of Naples, Naples, Italy

Introduction: Vestibular migraine (VM) has been increasingly recognized as a possible cause of episodic vertigo, but its pathophysiology is still unclear. Here, we used advanced non-invasive neuroimaging to examine the functional response of neural pathways associated with vestibular stimulation in patients with VM.

Methods: Twelve patients with VM underwent whole-brain blood oxygen level-dependent (BOLD) fMRI during ear irrigation with cold water. The functional response of neural pathways to this stimulation in patients with VM was compared to age- and gender-matched patients with migraine without aura (MwoA) and healthy controls (HC). Secondary analyses explored associations between BOLD signal change and clinical features of migraine in patients.

Results: We observed a robust cortical and subcortical pattern of BOLD signal change in response to ear irrigation across all participants. Patients with VM showed significantly increased thalamic activation in comparison with both patients with MwoA and HC. The magnitude of thalamic activation was positively correlated with the frequency of migraine attacks in patients with VM.

Conclusions: We provide novel evidence for abnormal thalamic functional response to vestibular stimulation in patients with VM. These functional abnormalities in central vestibular processing may contribute to VM pathophysiology.

Disclosure: Nothing to disclose
EP1235

**Q-No: a questionnaire to predict nocebo in outpatients seeking neurological consultation**

C. Deligianni, D.D. Mitsikostas  
*Neurological Department, Athens Naval Hospital, Athens, Greece*

**Introduction:** Nocebo affects significantly adherence and treatment outcome and varies considerably among neurological conditions. We aimed to evaluate a questionnaire to predict nocebo in outpatients seeking neurological consultation.

**Methods:** A four-item (rating range 4-20) self-fulfilled questionnaire (Q-No) was given in outpatients seeking neurological consultation at the Athens Naval Hospital. A blind to Q-No scoring neurologist rated outpatients as nocebo or no-nocebo after follow-up of >6 months.

**Results:** 338 (71.6% females) patients with mean age 46.9 (±13.8) years fulfilled the Q-No and the mean total score was 13.2 (±3.7). The Cronbach’s alpha coefficient was 0.627. Neurologist suggested 80 patients (23.7%) as nocebo and 258 as no-nocebo (mean Q-No score=12.4 95% CI: [12.0-12.9] and 15.8, 95%CI: [15.1-16.6], respectively). By using a cut-off at score 16 the Q-No predicts nocebo with 82.6% specificity and 61.3% sensitivity.

**Conclusions:** Q-No may serve as a useful tool to predict nocebo in outpatients seeking neurological consultation.

**Disclosure:** Nothing to disclose

---

EP1236

**Sexual dysfunction in migraine patients receiving preventatives: evaluation with two screening test**

E. Dominguez1, L. Ruiz2, M.S. Hernández1, E. Toribio2, I. Muñoz1, C. de la Cruz1, M. Ruiz3, M. Pedraza3, A.L. Guerrero1, F. Uribe1  
1Psychiatry, Hospital Clinico Universitario, Valladolid, 2Neurology, Hospital de Coslada, Madrid, 3Neurology, Hospital Clinico Universitario, Valladolid, Spain

**Introduction:** We aimed to evaluate sexual functioning in migraine patients and sexual dysfunction attributable to preventive treatment.

**Methods:** Patients attended in two outpatient headache offices. Included during follow-up visit after initiation of preventive therapy. Answered Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) (5 multiple choice items considering different phases in sexual response) and Psychotropic-related sexual dysfunction questionnaire (SALSEX) (2 dicotomic items assessing any change in sexual activity and if it was spontaneously reported, and 5 multiple choice items considering specific dysfunctions).

**Results:** 55 patients (13 males, 42 females), age 36±9 years (range: 19-57). 22 (40%) with chronic migraine and in 7 (12.7%) medication overuse. Time from migraine onset 16.6±12.4 years (1-37). 9.6±9 (1-30) headache days during previous month. As preventive treatment 20 (36.3%) received beta-blockers, 26 (47.3%) anticonvulsants, 5 (9.1%) calcium-channel blockers, and 4 (7.3%) antidepressants. In MGH-SFQ in 13 (23.6%) at least moderate decrease in overall sexual satisfaction. In 2 of 13 males (15.3%) at least moderate erectile dysfunction. SALSEX detected change in sexual activity since the beginning of treatment in 19 (34.5%) patients, but in none spontaneously reported. Mean age was higher among patients with at least moderate decrease in sexual satisfaction in MGH-SFQ (40.5±9.9 vs 34.6±8.3, p: 0.04). No other relationship between demographic and clinical variables and MGH-SFQ or SALSEX scores.

**Conclusion:** Sexual dysfunction assessed by screening test is common among migraineurs. Though dysfunction related to preventatives is frequent, it is not spontaneously reported.

**Disclosure:** Nothing to disclose
EP1237
Headache in cerebral venous-sinus thrombosis, pattern and location: a series of 60 consecutive patients
M. Farzadfard1, A. Ghabeli Juibary2, S. Yazdani3
1Department of Neurology, Faculty of Medicine, 2Student Research Committee, Department of Neurology, Faculty of Medicine, 3Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of

Introduction: Headache is the most frequent presenting symptom of cerebral venous thrombosis (CVT), most commonly associated with other manifestations.

Methods: From a prospective study of 60 consecutive patients diagnosed with CVT over 12 months, we selected those who presented with headache only. Diagnosis of CVT was made by magnetic resonance imaging (MRI) combined with MR venography (MRV): both increased signal on MRI T1 and T2 weighted images and the absence of flow was required to confirm diagnosis.

Results: During the inclusion period, a total of 30 patients were diagnosed with CVT. Twelve patients (40%) had headache as the only presenting symptom. The majority of these were young (mean age 39.9 years old), female (91.7%) patients, with only one third having a past medical history of headache (in all compatible with the diagnosis of migraine without aura).

Conclusions: This stresses the idea to systematically look for CVT in patients with recent persistent headache, thunderclap headache or pain worsening with straining, sleep or Valsalva maneuvers, even in the absence of papilledema or focal signs.

Disclosure: Nothing to disclose

EP1238
Association between cranial autonomic symptoms (CAS) and main migraine's features in a juvenile population with migraine
G. Giordano1, C. Spitaleri1, D. Trapolino1, F. Consolo1, M. D’Amelio2, G. Santangelo1, V. Raieli1, F. Vanadia1
1Child and Adolescent Neurology and Psychiatry Department, 2Section of Neurology, University of Palermo, Palermo, Italy

Introduction: Recently we have noted that Cranial autonomic symptoms (CAS) are frequently reported during migraine attacks also in paediatric age and were significantly associated to the frequency of attacks, supporting the role of the trigemino-autonomic reflex in the pathophysiology of migraine. However the main observed CAS subserve different parasympathetic functions (secretomotor fibers: lacrimation, nasal obstruction, sweating and vasomotor fibers: red ear and facial flushing) with possible different predictive significance in migraine attacks. The aim of this study was to evaluate the association between most frequent CAS and the main characteristics of migraine in a juvenile population with migraine, examining every single CAS individually.

Methods and results: A total of 198 children suffering from migraine with/without aura (94M, 104F, 4-17 years) were enrolled in two years time. A questionnaire investigating the presence of CAS and the main characteristics of migraine was administered to them. CAS were present in % of migrainous subjects and at the univariate analysis we found that conjunctival injection, lacrimation and sweating were positive related with frequency of attacks , lacrimation with duration of disease and allodynia , obstruction nasal with pulsantig pain.

Conclusions: These findings confirm that CAS are rather common in the course of paediatric migraine attacks. Generally CAS are related to frequency of attacks but the analysis of association between single CAS and main migrainous features shows that secretomotor parasympathetic functions are more related to pain while vascular control has less important function.

Disclosure: Nothing to disclose
**EP1239**

**Impulsivity among migraine patients: study in a series of 129 cases**

M.S. Hernández1, I. Muñoz1, M.I. Pedraza2, E. Dominguez1, M. Ruiz2, G. Isidro1, E. Mayor1, E.M. Sotelo1, V. Molina1, A.L. Guerrero2, F. Uribe1

1Psychiatry, 2Neurology, Hospital Clínico Universitario, Valladolid, Spain

**Introduction:** Unlike mood disorders, impulsivity has not been extensively studied in headache patients. We aimed to assess influence of impulsivity on Chronic Migraine (CM) or Medication Overuse (MO).

**Methods:** Patients attended in an outpatient headache office in a tertiary hospital (January 2013-January 2014). Episodic migraine (EM), CM, MO diagnosed accordingly ICHD-III. We gathered demographic and nosological characteristics. Patients answered Hospital Anxiety and Depression Scale (HADS), considering Anxiety or Depression when scored >10 in any of subscales. Impulsivity assessed with Plutchik scale (15 multiple choice items, positive if score >20).

**Results:** 129 patients (15 males, 114 females), mean age 38.4±11.7 years (range: 18-70). 85 cases (65.9 %) CM and, among them, 64 (75.2%) with MO. Mean scores of 7.8±4.4 (0-17) in HADS-Anxiety, 3.7±4 (0-18) in HADS-Depression and 13.8±6.5 (1-32) in Plutchik scales; 27.9% of patients met criteria for anxiety, 7% for depression and 14.7 % for impulsivity.

We first compared CM and EM groups; HADS-Anxiety (8.6±4.6 vs 6.3±3.7, p: 0.003), and HADS-Depression scores (4.6±4.4 vs 1.9±2.3, p<0.001) were higher among CM cases. When considering CM with or without MO, HADS-Anxiety score (9.2±4.5 vs 5.1±4.7, p: 0.02) was increased in patients with MO. No differences in Plutchik score or presence of impulsivity in both comparisons.

**Conclusion:** In our population, impulsivity assessed by Plutchik scale is common, but, unlike mood disorders, does not correlate with CM or MO.

**Disclosure:** Nothing to disclose

**EP1240**

**Prevalence of headache disorders diagnosed according to ICHD-3beta in three different social settings**

E.R. Lebedeva1, N.R. Kobzeva1, T.S. Tsypushkina1, P.A. Philimonova1, D.V. Gilev2, J. Olesen3

1Neurology, 2Ural State Medical University, Yekaterinburg, Russian Federation, 3Neurology, Glostrup Hospital, University of Copenhagen, Copenhagen, Denmark

**Introduction:** The aim of our study was to estimate the prevalence of headache disorders in three different social settings using the newly published International Classification of headache Disorders (ICHD-3-beta).

**Methods:** The study population consisted of:1042 students (719 females, mean age 20.6, range 17-40), 1075 workers (146 females, mean age 40.4, range 21-67), 1007 blood donors (484 females, mean age 34.1, range 18-64). All patients were interviewed using a semi-structured validated interview conducted by a neurologist or by trained senior medical students and diagnosed according to ICHD-3beta.

**Results:** In the whole material, 1-year prevalence of headache was 67%, migraine 17% and tension type headache (TTH) 58%. In females the prevalence of migraine in students (39%) was significantly higher than in workers 16% and blood donors 19%, p<0.0001. In males the prevalence of migraine in students (21%) was also significantly higher than in workers 4% and donors 5%, p<0.0001. The prevalence of TTH in females was respectively 69%, 65% and 66%. The prevalence of TTH in males was significantly higher in students (90%) than in workers 32% and blood donors 59%, p<0.0001, the prevalence of TTH was also significantly higher in donors than in workers, p<0.0001. Only few (18%) had consulted because of headache. The prevalence of migraine and TTH was significantly different in three social settings. Reasons for this will be analyzed and presented.

**Conclusions:** We show for the first time convincingly that headache disorders have different prevalence according to social setting. They represent a huge health problem in Russia.

**Disclosure:**Nothing to disclose
EP1241
Grey matter in migraine with aura patients
M. Margoni1, M. Calabrese2, F. Maggioni1, G. Zanchin1
1Department of Neurosciences, Headache Centre of Veneto Region, University of Padua, Padua, 2Department of Neurological and Movement Sciences, University of Verona, Verona, Italy

Introduction: A few studies assessed cortical thickness in patients with migraine, with heterogeneous results. Previous investigations reported a thickening of the somatosensory cortex (SSC) and visual motion processing areas (V3A/MT+) both in migraine without (MO) and with aura (MA) whereas other studies showed thinning in several cortical regions and a recent study showed no abnormalities.

Objective: To investigate regional cortical thickness/atrophy in MA (ICHD III-beta) patients.

Patients and methods: We compared 15 MA patients (age 30.2±5.7, 8 females) vs 21 controls (age 34.9±4.7, 13 females). Cortical thickness was measured in 146 regions using FreeSurfer and volumetric T1 weighted images.

Results: MA patients presented a mild focal thinning of the grey matter of the right ventral posterior cingulate cortex (p=0.001). Thickening of left inferior frontal sulcus (p=0.043) and of the left postcentral gyrus (p=0.0001) that is part of SSC, of the left occipito-temporal gyrus (p=0.017), particularly of the medial occipito-temporal gyrus (p=0.027) belonging to the visual cortical areas MT+, was observed.

Conclusion: The thinning of several cortical regions reported in MA was not confirmed; our preliminary result of a cortical thinning of the right ventral posterior cingulate cortex needs to be confirmed. Our finding of a thickening in the SSC and of the MT+ areas is in keeping with previous observations. The thickening in MT+ warrants the study of a larger sample of MA patients, to be analyzed according to the type of aura. These results support the hypothesis that repetitive MA attacks could lead to neuroplastic changes in grey matter.

Disclosure: Nothing to disclose

EP1242
Visual evoked potential habituation in migraineurs: a longitudinal study with a blinded design
P. Omland1,2, M. Uglem1, T. Sand1,2
1INM, NTNU, 2Nevroklinikken, St.Olavs Hospital, Trondheim, Norway

Introduction: Lack of habituation has been called the neurophysiological hallmark of migraine, but the results of earlier studies have been discrepant. We investigated if VEP habituation changes in relation to an attack, and if lack habituation in interictal migraineurs could be reproduced with a blinded design.

Methods: 50 migraineurs and 31 headache-free controls were included. VEPs were recorded once in controls and four times on different days in migraineurs. Investigators were blinded. VEPs were averaged in 6 blocks of 100 responses. VEP peaks were determined without knowledge of diagnosis or block number. Linear change over blocks of N70-P100 amplitude was applied as main habituation measure. Habituation in controls and in the first interictal recording in migraineurs was compared with an independent samples Student’s t-test.

Results: Habituation was more pronounced in ictal (-0.47±0.43 µV/block) than interictal (-0.31±0.25 µV/block) recordings (p=0.029). No habituation differences were found between interictal and preictal or postictal recordings. No VEP habituation differences were found between headache-free controls and interictal recordings.

Conclusion: VEP habituation increased significantly in relation to the migraine attack while no changes were detected preictally. Earlier studies reporting changes in VEP habituation over the migraine cycle have mostly applied a cross-sectional design, which may not have been ideal. In this blinded replication study we could not confirm that migraineurs lack habituation compared to controls. This confirms our recently published data and, as far as we know, no studies that applied blinding during VEP recordings have found lack of habituation in migraineurs.

Disclosure: Nothing to disclose
Reversible cerebral vasoconstriction syndrome as a cause of thunderclap headache: a retrospective case series study

A. Papathanasiou¹,², V. Zouvelou², D. Breen¹, A. Misbahuddin¹, S. Chawda³, R. De Silva¹
¹Department of Neurology, Essex Centre for Neurological Sciences, Queen’s Hospital, Romford, Essex, United Kingdom, ²Department of Neurology, Eginition Hospital, National and Kapodistrian University of Athens, Athens, Greece, ³Department of Neuroradiology, Essex Centre for Neurological Sciences, Queen’s Hospital, Romford, Essex, United Kingdom

Introduction: Thunderclap headache (TCH) is a common Emergency Department presentation. Although subarachnoid hemorrhage (SAH) should be the first diagnosis to exclude, reversible cerebral vasoconstriction syndrome (RCVS) is another important cause. RCVS is characterized by multifocal narrowing of cerebral arteries, typically manifested by acute-severe headache with or without neurological deficits.

Objective: To compare and discuss the clinical and radiological characteristics of patients with RCVS.

Case Reports: We report four cases of RCVS, all presented with TCH, while half of them had additional neurological symptoms such as right homonymous hemianopia, right sided weakness and slurred speech. Brain CT was normal in two of our patients, however subsequent cerebrospinal fluid analysis revealed xanthochromia consistent with SAH. The remaining two patients demonstrated intracerebral hemorrhage on CT. All of our patients underwent Digital Subtraction Angiography (DSA) that showed segmental narrowing and dilatation of one or more cerebral arteries without any signs of aneurysm. Repetitive DSA after three months was entirely normal prompting the diagnosis of RCVS.

Conclusions: TCH requires urgent work up to identify the underlying cause. Although SAH is the most important diagnosis to exclude in the first instance, physicians should be aware of other causes and how they present, such as RCVS. Early recognition of this condition can prevent complications such as hemorrhagic and ischemic stroke.

Disclosure: Nothing to disclose

A cross-sectional study of migraine improvement after diet/exercise-induced weight loss or bariatric surgery

S. Razeghi Jahromi¹, M. Abolhasani¹, M. Togha², A. Meysamie³, M. Talebpour⁴, S. Sadre-Jahani¹
¹Endocrine and Metabolism Research Center, Obesity Group, Sina Hospital, ²Iranian Center of Neurological Research-Neuroscience Institute, Sina Hospital, ³Community and Preventive Medicine Department, Medical Faculty, ⁴Surgery Department, Laparoscopic Surgical Ward, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of

Introduction: Obesity seems to be associated with severity and frequency of migraine headache. Great weight loss by bariatric surgery seems to result in an improvement of migraine headache. Whether smaller amount of weight loss or the other methods of weight loss had similar effect on migraine remains to be answered. We designed this study to assess the effect of 7-10% reduction of body weight either shortly after bariatric surgery or through combined diet and exercise.

Methods: In this prospective cross-sectional study, frequency and intensity of migraine were assessed before and after weight loss in 49 obese women (18-60 years) with migraine headache (24 persons underwent bariatric surgery and 25 received diet and exercise plan).

Results: The mean intensity (visual analog scale) and frequency of migraine headaches per month were reduced from 6.8±2.0 and 17.6±11.5 at baseline to 1.5±2.6, 0.4±0.6 after surgery (both p<0.001). Non-surgical weight loss reduced the intensity and frequency of migraine headaches from 6.9±1.8 and 7.2±6.5 to 4.6±3.3 (p<0.001) and 3.9±6.6 (p=0.001) respectively. Losing similar amount of weight by surgery resulted in more reduction of the intensity (p<0.001) and frequency (p=0.002) of migraine comparing with non-surgical modifications.

Conclusions: Although weight reduction with diet/exercise had a significant effect on migraine, the effect was less than losing a similar amount of weight by surgery. Our observations highlighted the needs for a deeper insight into hormones and appetite mediators which affected by bariatric surgery and have shared roles in migraine and obesity.

Disclosure: Nothing to disclose
EP1245

Chronic migraine: characteristics in a prospective headache registry

M. Ruiz Piñero, M.I. Pedraza Hueso, P. Mulero Carrillo, C. De la Cruz Rodríguez, M. Hernández García, E. Martínez Velasco, I. Muñoz León, J. Barón Sánchez, Á.L. Guerrero Peral

Hospital Clínico Universitario, Valladolid, Spain

Introduction: We aimed to analyze clinical and demographic characteristics of patients with chronic migraine (CM) in a prospective registry.

Methods: Patients attended in an outpatient headache office in a tertiary hospital (January 2013-January 2014). Referred from primary care or general neurology offices. CM diagnosed accordingly to ICHD-2R criteria. We gathered demographic and clinical data, previous therapies, comorbidities and risk factors. We assessed headache impact administering six-item Headache Impact Test (HIT-6).

Results: 150 patients (24 males, 126 females), mean age of 40.4±14.1 years (15-71), age at onset of migraine 18.1±8.2 years (6-45). Latency from onset of CM to diagnosis 44.3±85 months (3-480). Considering risk factors, in 105 (70%) medication overuse (MO), in 63 (42%) stressful life events, in 18 (12%) mood disorders, and in 9 (6%) obesity. Among comorbidities, in 73 cases (48.7%) vascular risk factor, especially smoking, in 19 (12.7%) other chronic pain, and in 7 (4.7%) respiratory disease. 34 of 126 female patients (26.9%) described menstrually-related migraine. Mean HIT-6 score of 61.6±6.5 (42-78), and HIT-6 score ≥55 (at least substantial headache-related impact) in 82.3 %. Only 25.3% of patients had previously received triptans as symptomatic treatment and in 47.3% at least one preventive drug had been used.

Conclusion: Latency between onset and diagnosis of MC is prolonged in our series. In our MC population MO and stressful events are frequent risk factors. We consider that previous use of preventatives and triptans is insufficient.

Disclosure: Nothing to disclose