

POSTER PRESENTATION

Open Access

P017. Ictal cutaneous allodynia does not affect pain perception in patients with migraine: a trigeminal heat stimulation study during interictal period

Antonio Russo^{1,2,3*}, Francesca Conte¹, Laura Marcuccio¹, Alfonso Giordano^{1,2}, Giocchino Tedeschi^{1,2,3}, Alessandro Tessitore¹

From Abstracts from the 1st Joint ANIRCEF-SISC Congress
Rome, Italy. 29-31 October 2015

Background

Migraine is a disabling neurological condition characterized by headache attacks, hypersensitivities to visual, auditory, olfactory and somatosensory stimuli, nausea and vomiting. Peripheral and central sensitization of trigemino-vascular neurons seem to play a critical role in different aspects of migraine pathophysiology [1]. In the last years, several studies investigated pain thresholds in patients with migraine during both attacks and interictal periods. However, pain perception in patients with migraine has been poorly explored.

Objective

To investigate perception intensity of trigeminal heat stimulation (THS) [2] in patients with migraine without (MwoA CA-) and with allodynia (MwoA CA+) compared to healthy controls (HC) and correlation with clinical parameters of migraine severity.

Methods

We enrolled 80 patients with migraine (40 patients with MwoA CA- and 40 patients with MwoA CA+) and 60 HC. THS was performed using the contact heat evoked potential stimulator (CHEPS) at three different intensities: a low-innocuous stimulus at 41°C and two painful heat stimuli at 51° and 53°C (to provide a moderate-noxious and a high-noxious stimulus). Subjects had to verbally rate the intensity perception of the experimental stimulus by means of a numerical rating scale (NRS) ranging from 0 ("no pain") to 10 ("worst pain imaginable").

Results

NRS of pain perception was not significantly different between patients with MwoA (as a group) and HC at any level of experimental stimuli. The absence of significant differences in pain perception was also found between patient groups defined as patients with MwoA CA- and with MwoA CA+ compared to HC, at any level of experimental stimuli.

Conclusions

In the present study, by using three predefined temperatures, we demonstrated that pain intensity ratings are not significantly different between both CA+ and CA- migraine patients and patients with migraine as a group compared to HC. Previous studies suggested a low heat pain threshold in migraine patients during interictal period [3]. However, it is well known that the pain intensity is different from the pain threshold [4]. Furthermore, we cannot exclude that ictal CA, subtended by central sensitization of trigemino-vascular neurons, may revert during interictal period without consequences on pain perception. Central sensitization could become progressively more severe over time and, by an imbalance between the inhibition and the facilitation of pain dynamics, might contribute to chronification phenomena, interictal CA and probably pain perception abnormalities.

Written informed consent to publication was obtained from the patient(s).

Authors' details

¹Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, Second University of Naples, Naples, Italy. ²MRI Research Center SUN-FISM, Second University of Naples, Naples, Italy. ³Institute for Diagnosis and Care "Hermitage Capodimonte", Naples, Italy.

* Correspondence: dottor.russo@gmail.com

¹Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, Second University of Naples, Naples, Italy

Full list of author information is available at the end of the article

Published: 28 September 2015

References

1. Bernstein C, Burstein R: Sensitization of the trigeminovascular pathway: perspective and implications to migraine pathophysiology. *J Clin Neurol* 2012, **8**(2):89-99.
2. Russo A, Tessitore A, Esposito F, Marcuccio L, Giordano A, Conforti R, Truini A, Paccone A, d'Onofrio F, Tedeschi G: Pain processing in patients with migraine: an event-related fMRI study during trigeminal nociceptive stimulation. *J Neurol* 2012, **259**(9):1903-1912.
3. Schwedt TJ, Chiang CC, Chong CD, Dodick DW: Functional MRI of migraine. *Lancet Neurol* 2015, **14**(1):81-91.
4. Schwedt TJ, Zuniga L, Chong CD: Low heat pain thresholds in migraineurs between attacks. *Cephalalgia* 2015, **35**(7):593-9.

doi:10.1186/1129-2377-16-S1-A128

Cite this article as: Russo et al.: P017. Ictal cutaneous allodynia does not affect pain perception in patients with migraine: a trigeminal heat stimulation study during interictal period. *The Journal of Headache and Pain* 2015 **16**(Suppl 1):A128.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► springeropen.com
