

POSTER PRESENTATION

Open Access

# Prostaglandin E2 induces immediate migraine-like attack in migraine patients without aura

M Antonova\*, T Wienecke, J Olesen, M Ashina

From The European Headache and Migraine Trust International Congress  
London, UK. 20-23 September 2012

## Background

Prostaglandin E2 (PGE2) has been suggested to play an important role in the pathogenesis of migraine [1]. In the present experiment we investigated if an intravenous infusion of PGE2 would induce migraine-like attacks in patients with migraine.

## Methods

Twelve patients with migraine without aura were randomly allocated to receive 0.4 µg/kg/min PGE2 (Prostin® E2, dinoprostone) or placebo over 25 min in a two-way, cross-over study. Headache intensity was recorded on a verbal rating scale, middle cerebral artery blood flow velocity (VMCA) was measured by Transcranial Doppler (TCD) and diameter of superficial temporal artery (STA) was obtained by c-series scan (Dermascan C).

## Results

In total 9 migraine patients (75%) experienced migraine-like attacks after PGE2 compared to none after placebo ( $P = 0.004$ ). Seven out of 9 (58 %) patients reported the migraine-like attacks during the immediate phase (0-90 min) ( $P = 0.016$ ). Only two patients experienced the delayed migraine-like attacks several hours after the PGE2 infusion stop ( $P = 0.500$ ). The VMCA decreased during the PGE2 infusion ( $P = 0.005$ ) but there was no significant dilatation of the STA ( $P = 0.850$ ).

## Conclusion

The migraine-like attacks during, and immediately after, the PGE2 infusion contrast with those found in the previous provocation studies, where the other pharmacological compounds triggered the delayed migraine-like attacks several hours after the infusion. We suggest that PGE2

may be one of the important final products involved in the generation of migraine attacks.

Published: 21 February 2013

## Reference

1. Wienecke T, Olesen J, Oturai PS, et al: Prostaglandin E2(PGE2) induces headache in healthy subjects. *Cephalalgia* 2009, **29**:509-519.

doi:10.1186/1129-2377-14-S1-P113

Cite this article as: Antonova et al.: Prostaglandin E2 induces immediate migraine-like attack in migraine patients without aura. *The Journal of Headache and Pain* 2013 **14**(Suppl 1):P113.

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](http://springeropen.com)

Danish Headache Center, Denmark

 SpringerOpen

© 2013 Antonova et al; licensee Springer. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.