

POSTER PRESENTATION

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

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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.

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