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EHMTI-0033. The phosphodiesterase 3 inhibitor cilostazol induces migraine-like attacks via cAMP increase

G Song*, J Olesen, M Ashina

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Introduction

The initiating mechanisms of migraine attacks are very complex but may involve the cyclic adenosine 3',5'-monophosphate (cAMP) signaling pathway. It is unknown whether intracellular cAMP accumulation induces migraine attacks.

Aim

To investigate whether administration of cilostazol, which causes cAMP accumulation, may induce migraine attacks.

Methods

We included 14 migraine patients without aura in a double-blinded, placebo-controlled crossover study. All participants received oral cilostazol or placebo on two separate days. We recorded migraine headache characteristics and associated symptoms using a questionnaire.

Results

Cilostazol induced delayed migraine-like attacks in 12 patients (out of 14) compared to 2 (out of 14) patients after placebo (P=0.002). The median time to onset for migraine-like attacks was 6 h (range 3-11 h). Patients reported that the attacks mimicked their usual migraine attacks and that cilostazol induced attacks responded to their usual migraine treatment. The median time of medication intake was 6 h (range 4-11).

Conclusions

The present study suggests that intracellular cAMP accumulation plays a crucial role in migraine induction. This knowledge is a further step in our understanding of the intracellular pathway of migraine initiation.

Department of Neurology, Danish Headache Center, Glostrup, Denmark

No conflict of interest.

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