Reply to letter to the editor: Is palinopsia in migraineurs an enhanced physiological phenomenon?

Dear Sir,

We are thankful to Belcastro and Ferlazzo for their comments on our paper. They have raised three issues on the possibility of retinal after-image, correlation of palinopsia with frequency of migraine, and objective method of evaluation. Palinopsia is defined as the persistence or recurrence of visual image after the stimulus has been removed. There are at least two forms of abnormal persistence of visual image in time—immediate and delayed. The immediate type of palinopsia is similar to the normal phenomenon in which after-image is experienced after prolonged viewing of a bright object. Normal versus abnormal is defined mainly on the basis of duration of the after-image. Our novel method of evaluation helps in quantification of duration of immediate palinopsia, and defines abnormality comparing these values with normal age- and gender-matched controls. The origin of immediate palinopsia has been thought to be retinal, although recently the role of the parieto-occipital cortex has been reported. Our study was not designed to evaluate the origin of immediate palinopsia. Amongst the patients with palinopsia, 22.6% had only positive visual after-images, 72.6% had both positive and negative, and 4.8% had only a negative after-image (1). Cortical palinopsia is a positive image, suggesting major role of the parieto-occipital lobe in the genesis of palinopsia in our patients.

The frequency and duration of palinopsia to different colours were significantly higher in migraineurs compared to the controls although the pattern was similar. Therefore we have raised the question about the exaggeration of normal phenomenon in migraineurs. We found frequency and severity of headache, and headache during evaluation as independent predictors of palinopsia. Our patients had more frequent migraine attacks (7/month) compared to the study population (12.8/year) of Belcastro et al. (2). For the evaluation of predictors of palinopsia, we have defined palinopsia on the basis of the objective method and questionnaire rather than questionnaire alone. Therefore our results cannot be extrapolated to the study by Belcastro et al. The phenomenon of sensitisation and impaired habituation of sensory cortex have been demonstrated in migraineurs using various evoked potentials, which may also explain more frequent palinopsia in them (3). At present, although we have not suggested the routine use of this novel method for the evaluation of palinopsia in migraineurs, the potential role of this method in understanding the pathophysiology of migraine and monitoring therapeutic trial needs further studies.

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References


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