

POSTER PRESENTATION

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Short term improvement of migraine headaches during ketogenic diet: a prospective observational study in a dietician clinical setting

C Di Lorenzo^{1*}, G Coppola^{2*}, G Sirianni³, F Pierelli¹

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

Introduction

Migraine prophylaxis is an important clinical challenge, sometime complicated by side effects. Among that weight increase is one of most frequent.

Background

Ketogenic diets (KDs), by drastic carbohydrate restriction, induces lipidic metabolism and Ketone bodies synthesis. Other than epilepsy, KDs were already suggested to be effective also in migraine (although in lack of definitive evidences) and in weight loss[1]. We have evaluated if headache and analgesics consumption improved in migraineurs self referred to a dietician, comparing followers of KD and followers of standard low-calories diet (SD).

Methods

Migraineurs were found and enrolled in a dietician clinical setting. All clinical data were recorded before the diet initiation and, blind to neurologist, subjects were divided in two subgroups: KD and SD followers. After a one month period of diet, patients were re-evaluated for comparisons.

Results

Headache frequency and drug consumption was reduced during the observation period, but only in KD group. Responder rates in KD group (52 subjects) were higher than 90% in terms of attack frequency and drug consumption in the month of observation, while SD group (56 subjects) has no effect.

Conclusion

KD ameliorates headache and reduces drug consumption in migraineurs, while the SD is fully ineffective on migraine in a short term observation. Our findings support the role of KDs in migraine treatment, maybe modulated by KBs inhibitory effects on neural inflammation and cortical spreading depression [2], and enhancing brain mitochondrial metabolism [3]. Ketogenic VLCD could find a transient role in antagonize the ponderal increase, a common side effect among prophylactic migraine treatments.

Conflict of interest

none.

Author details

¹Sapienza University of Rome, Italy. ²G.B. Bietti Foundation-IRCCS, Dept of Neurophysiology of Vision and Neurophthalmology, Rome, Italy. ³Wellness and Dietary Medicine, Krom Genetics Institute, Rome, Italy.

Published: 21 February 2013

References

1. Maggioni F, Margoni M, Zanchin G: **Ketogenic diet in migraine treatment: a brief but ancient history.** *Cephalalgia* 2011, **31**:1150-1151.
2. de Almeida Rabello Oliveira M, da Rocha Ataíde T, et al: **Effects of short-term and long-term treatment with medium- and long-chain triglycerides ketogenic diet on cortical spreading depression in young rats.** *Neurosci Lett* 2008, **434**:66-70.
3. DeVivo DC, Leckie MP, Ferrendelli JS, McDougal DB Jr: **Chronic ketosis and cerebral metabolism.** *Ann Neurol* 1978, **3**:331-337.

doi:10.1186/1129-2377-14-S1-P219

Cite this article as: Di Lorenzo et al.: Short term improvement of migraine headaches during ketogenic diet: a prospective observational study in a dietician clinical setting. *The Journal of Headache and Pain* 2013 **14**(Suppl 1):P219.

¹Sapienza University of Rome, Italy

²G.B. Bietti Foundation-IRCCS, Dept of Neurophysiology of Vision and Neurophthalmology, Rome, Italy

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