Cluster headaches—evidence-based guidance

What are the features of cluster headaches?

Zakrzewska JM *Cluster headache: a review of the literature. Br J Oral Maxillofacial Surg 2001; 39:103–113*

Data sources Medline, Cochrane Database of Clinical Trials and bibliographies of identified articles.

Study selection Only English-language papers that clearly stated the defined diagnostic criteria were included. For the management section, controlled trials were used if available.

Data abstraction and synthesis A qualitative synthesis of included studies was carried out.

Findings Cluster headache is rare (lifetime prevalence of 0.07%). Smoking appears to increase the risk but there is conflicting evidence about the role of coffee and alcohol. Diagnosis is entirely based on clinical features. No laboratory or radiological investigations with sufficient sensitivity and specificity have been identified. The pain is described as very severe and can last for up to 3 h. There is often parasympathetic overactivity such as lacrimation and rhinorrhea. In some patients there is facial flushing or pallor, dysaesthesia of scalp hairs, tenderness of the carotid artery on that side and bradycardia. Sympathetic activity can result in miosis or ptosis on that side of the face. The main differential diagnosis is migraine.

Attacks are typically at night (when sleep apnoea can occur) and can be caused by alcohol, notroglycerine and histamine, leading to the hypothesis that oxygen desaturation triggers an attack. Standard treatment of acute attacks is oxygen delivered by facemask but this has only been evaluated in one small double-blind randomised controlled trial (RCT). A review of sumatriptan has shown it to be effective without serous adverse effects or cardiovascular changes. Dihydroergotamine (DHE) and ergotamine have both been reported to be useful but only the nasal for of DHE has been evaluated. Intranasal capsaicin was used successfully in two RCT. There have been few RCT that considered prophylaxis, and surgical-management studies did not include controls and were of varying quality. A case-series of 66 patients did find blockade of the sphenopalatine ganglion and radiofrequency thermocoagulation of the Gasserian ganglion was produced good results in a case series of 27 patients.

Conclusions An overview of this condition is presented based on a thorough review of the area with treatment guidelines suggested based on findings.

Commentary

This review has seemingly extracted appropriate literature although use of only English language papers may be a limitation. However, presentations by other European authorities on headache,[1] failed to disclose any literature that would question the conclusions.

Basic epidemiology concerning reported risk factors of male gender, tobacco use, prior head injury, family history, anxiety and hostility is reviewed. Whereas these factors were based on case-controlled evidence, other studies without appropriate controls and also cited, and the author does not sufficiently highlight good versus poor evidence. A few studies concerning the impact of psychosocial functioning on cluster are briefly described; since cluster headache is rare, such papers are also rare, highlighting how little we know about how psychosocial status affects cluster (and the reverse).

Diagnostic criteria for the clinical presentation are those of the International Headache Society. These have undergone some interesting and convincing trials[2,3] regarding reliability and validity for the major headache subtypes. As cluster headache is clearly distinguished, by definition, from all other headaches on the basis of both frequency (multiple episodes within a day and recurrent across days within a cluster period) and duration (up to several hours) of episodes, differential diagnosis is generally not considered an issue, and misclassification bias in the cited literature is unlikely. Misclassification bias, however, could arise from other types of brief recurrent headaches (eg, paroxysmal hemicrania), and this potential problem in the cited literature is not addressed.

The review summarises well the established acute management and prophylactic management, and reports outcomes data. Some treatments have been studied in RCT, demonstrating substantial positive outcomes (reduced severity, reduced frequency or both). In contrast, prophylactic management agents have been primarily studied in open trials where outcomes indicate a wide range of efficacy, suggesting that while acute management can be rather predictable with a range of agents, prophylaxis will need to be more individually tailored via trial-and-error. This is not surprising given the overall literature on headache treatment. Surgical treatments of cluster headache are often necessary for the same reasons as for trigeminal neuralgia: tolerance or toxicity from the drugs. Unfortunately, this, like that of most surgical literature, is based on uncontrolled studies and is highly variable in quality. 60% or more of subjects in these uncontrolled trials report good to excellent pain relief over follow-up periods ranging from 3 weeks to 6 years.

This review provides encouraging results and guidelines for appropriate management of cluster headache. Practitioners who do not treat these headaches but who have contact with such patients will find these guidelines helpful for differential diagnosis of pain conditions within the trigeminal distribution and for treating comorbid conditions.

Practice point

- Review provides encouraging results and guidelines for appropriate management.

Richard Ohrbach
Department of Oral Diagnostic Sciences, University at Buffalo, Buffalo, NY, USA

1. Olesen J. Differentiating migraines from other headaches. In: Pain 2002—An Updated Review. Edited by Giamberardino MA. Seattle: IASP Press. 2002: 61–68.
2. Granella R, D'Alessandro R, Manzoni GC, *et al*. International Headache Society classification: interobserver reliability in the diagnosis of primary headaches. Cephalalgia 1994; 14:16–20.
3. Solomon S, Lipton RB. A headache clinic-based approach to field trials of the International Headache Society criteria. *Cephalalgia* 1993; 13(suppl. 12):S63–S65.

Correspondence: Dr Joanna M Zakrzewska, Oral Medicine, St Bartholomews and the Royal London Hospitals, Queen Mary's School of Medicine and Dentistry, Turner Street, London E1 2AD, UK. E-mail: J.M.Zakrzewska@qmul.ac.uk

Evidence-Based Dentistry (2003) **4,** 10.
doi:10.1038/sj.ebd.6400151