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Most recent updates on cluster headaches compiled in a review article

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Nine researchers from around the world have published a summary of the most recent progress in diagnosing and treating cluster headaches, as well as understanding the development of the disease. The review article

was recently published in *The Lancet Neurology*.

Cluster headaches are characterized by extremely painful attacks of severe, recurrent, unilateral headache and so-called autonomic symptoms, e.g., increase tear flow on the same side as the pain. However, the causes remain unknown. The clinical features of the disease are similar in patients globally, but regional differences in prevalence and burden exist.

Recent advances have introduced effective treatments and broadened understanding of the clinical features of cluster headaches. Cluster headache attacks usually have a rhythmicity, e.g., the attacks often occur at specific times of the day, genetic risk factors are involved and there are sex differences.

"In this review we have summarized the most recent updates on cluster headaches," says Andrea Carmine Belin, principal researcher and one of the nine co-authors of the article.

New treatments approved

The review article provides an update on how to best diagnose and manage cluster headaches. When diagnosing cluster headaches, it is important to first rule out a secondary cause of the disorder, then to distinguish cluster headaches from other primary headaches and facial pain, and lastly, to check that the medical history meets the criteria for cluster headaches according to the International Classification of Headache Disorders (ICHD-3).

The management of cluster headaches often combines acute, transitional, and long-term preventive treatments. In terms of finding the causes of cluster headaches, genetic factors have been reported to be involved and international collaborations have so far led to the

identification of eight genetic chromosomal regions (loci) associated with cluster headaches.

The mechanisms leading to cluster headaches are still not fully understood, but recent studies show that targeting the neuropeptide calcitonin gene-related peptide (CGRP) can reduce the burden of attacks. New treatments targeting CGRP have now been approved for cluster headaches.

Cluster headaches are a rare disease and have therefore remained relatively unknown and thus both underdiagnosed and undertreated. Due to the low prevalence of cluster headaches, continued collaboration through multicenter clinical trials and data sharing will be imperative for further breakthroughs in understanding and management.

"Our combined clinical expertise in the diagnosis and treatment of cluster headaches, as well as research in areas such as heredity, new drug development, circadian rhythms and sex differences, enabled us to produce this international compilation of current clinical recommendations and guidelines, as well as the latest research findings," says Andrea Carmine Belin.

World leading researchers and clinicians in the cluster headache field from Denmark, U.K., U.S., Taiwan, South Korea, Netherlands and Brazil were involved in writing the review article.

It can often take many years before a patient is diagnosed and the next step would be do identify reliable diagnostic biomarkers that can distinguish cluster headaches from other headache disorders to prevent this delay. To follow up on the genetic studies, it would be interesting to further study whether genetic subtypes may be linked to clinical features, age of onset and/or treatment response.

More information: Anja S Petersen et al, Recent advances in diagnosing, managing, and understanding the pathophysiology of cluster headache, *The Lancet Neurology* (2024). DOI: 10.1016/S1474-4422(24)00143-1