



QUARTERLY RESEARCH REPORT

Welcome to the first issue of the Migraine World Summit (MWS) Quarterly Research Report. The Quarterly Research Report highlights recent research publications related to migraine and headache. We hope you find it a helpful way to discover some of the latest findings that may be relevant to you.

Each individual report is intentionally brief in order to provide a quick overview. The goal is to give you an idea of current research and to share some insights that may improve your understanding of migraine.

Consult your headache specialist or primary care physician to discuss how any of the research findings might apply to you.

Some medical publications don't provide free online access. In some cases, your health care professional may be able to print a copy for you.

Please note that our volunteer support team members are patients themselves and are not able to answer questions about the research or comment on these medical studies.

Authors highlighted **in bold** are those who have spoken at the Migraine World Summit.

Quotes are taken directly from the research paper.

We welcome your feedback on this new report. Please share via email to info@migraineworldsummit.com

Disclaimer: The views reflected in this research report do not represent the views of the Migraine World Summit. This report is not designed to replace a consultation with your doctor. Seek medical advice before making any changes to your treatment plan.

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Research
Title

Migraine

Publication Date

January 2022

Medical Journal

*Nature Reviews
Disease Primer*

RESEARCH OVERVIEW

This study provides an update on migraine for a broad audience of medical professionals.

As a disease “primer,” it aims to cover all the fundamental aspects of migraine diagnosis — symptoms, triggers, treatment, and management.



QUOTES

“The emergence of new treatment targets and therapies illustrates the bright future for migraine management.”

“CGRP receptor antagonists (gepants) and lasmiditan, a selective 5HT_{1F} receptor agonist, have emerged as effective acute treatments. Intramuscular onabotulinumtoxinA may be helpful in chronic migraine (migraine on ≥ 15 days per month), and monoclonal antibodies targeting CGRP or its receptor, as well as two gepants, have proven effective and well-tolerated for the preventive treatment of migraine.”



OUR TAKEAWAY

- Management for mild attacks includes use of nonsteroidal anti-inflammatory drugs (NSAIDs). For moderate to severe attacks, treatments include triptans, ditans, and gepants.
- Anti-CGRPs, Botox, and gepants are well-tolerated and effective for migraine prevention.



RESEARCH LINK & AUTHORS

Abstract available free at

<https://doi.org/10.1038/s41572-021-00328-4>

Ferrari, M. D.

Goadsby, P. J.

Burstein, R.

Kurth, T.

Ayata, C.

Charles, A.

Ashina, M.

van den Maagdenberg, A.

Dodick, D. W. (2022)

Migraine. *Nat Rev Dis Primers*, 8(1), 2

Research
Title

Increased prevalence of irritable bowel syndrome in migraine patients: a systematic review and meta-analysis

Publication Date

January 2022

Medical Journal

*European Journal of
Gastroenterology and
Hepatology*

RESEARCH OVERVIEW

Irritable bowel syndrome is known to occur more frequently in people with migraine disease, but the evidence to date has been variable regarding how significant the association is.

This study pooled data from 11 studies of 28,336 people with migraine disease and 1,535,758 without migraine disease.

The study found that people with migraine had almost 2.5 times the risk of also having irritable bowel syndrome, compared to those without migraine.



QUOTES

“This study aimed to comprehensively compare the prevalence of IBS among [those with migraine] versus [those without migraine].”

“The pooled analysis found that [those with migraine] had a significantly higher prevalence of IBS than [those without migraine].”



OUR TAKEAWAY

The hyper-responsiveness of the central nervous system (also known as central sensitization) that can lead to migraine in some people is also correlated with other conditions. These include restless leg syndrome, depression, temporomandibular joint disorder, chronic fatigue syndrome, and, as this study suggests, irritable bowel syndrome.



RESEARCH LINK & AUTHORS

Abstract available free at

<https://pubmed.ncbi.nlm.nih.gov/33470704/>

Wongtrakul, W.

Charoenngam, N.

Ungprasert, P.

Increased prevalence of irritable bowel syndrome in migraine patients: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol*, 34(1), 56-63.

Research
TitleExploring alterations in sensory pathways
in migraine

Publication Date

January 2022

Medical Journal

*The Journal of
Headache and Pain*

RESEARCH OVERVIEW

When it comes to sensory perception, migraine may continue to alter sensory networks between attacks.

The functional connectivity between visual, auditory, olfactory, gustatory, and somatosensory centers was found to be enhanced (i.e., potentially hyper-responsive) in people with migraine disease even when not experiencing an acute migraine attack.



QUOTES

“Whilst changes in sensory processes during a migraine attack have been well-described, there is growing evidence that even between migraine attacks, sensory abilities are disrupted in migraine.”

“These data provide evidence for a dysfunctional sensory network in pain-free migraine patients, which may be underlying altered sensory processing between migraine attacks.”



OUR TAKEAWAY

- This study provides evidence that there could be some level of dysfunction in the sensory networks of individuals living with migraine even between migraine attacks.
- It supports the finding that many people with migraine claim a hyper-responsiveness to otherwise normal stimuli (triggers), which can lead to a migraine attack.



RESEARCH LINK & AUTHORS

Full article available free at

<https://thejournalofheadacheandpain.biomedcentral.com/articles/10.1186/s10194-021-01371-y>

Meylakh, N.

Henderson, L. A.

Exploring alterations in sensory pathways in migraine. *J Headache Pain*, 23(1), 5.

<https://doi.org/10.1186/s10194-021-01371-y>



Research Title

Chronic migraine evolution after 3 months from erenumab suspension: real-world-evidence-life data

Publication Date

January 2022

Medical Journal

Neurological Sciences



RESEARCH OVERVIEW

Erenumab (Aimovig) is a monoclonal antibody that acts against calcitonin gene-related peptide (CGRP).

This study found that people with chronic migraine who temporarily discontinued Aimovig after one year (as recommended by the expert consensus of the European Headache Federation) experienced more frequent and more severe headaches than they did when taking Aimovig.



QUOTES

“The aim of the present study is to explore the evolution of patients affected by CM [chronic migraine] and MOH [medication overuse headache] at the baseline, after erenumab discontinuation.”

“At the third month after [Aimovig] suspension, patients displayed a significantly higher number of migraine days per month, a significantly higher painkiller consumption, and a significantly higher migraine-related disability.”



OUR TAKEAWAY

- People might consider taking a “medication holiday” for a variety of reasons. This research found that in most cases, people had more headache days when off the medication for three months and fewer when they started taking it again.
- Interestingly, some did *not* achieve the same degree of prevention they’d previously had while taking the medication, suggesting taking a break may not be helpful.



RESEARCH LINK & AUTHORS

Abstract available free at

<https://doi.org/10.1007/s10072-022-05870-x>

Guerzoni, S.
 Baraldi, C.
 Pensato, U.
 Favoni, V.
 Lo Castro, F.
 Cainazzo, M. M.
 Cevoli, S.
 Pani, L.

Chronic migraine evolution after 3 months from erenumab suspension: real-world-evidence-life data. *Neurol Sci*.
<https://doi.org/10.1007/s10072-022-05870-x>

Research
Title

Safety and tolerability of fremanezumab [Ajovy] in patients with episodic and chronic migraine: a pooled analysis of phase 3 studies

Publication Date

March 2022

Medical Journal

Cephalalgia

RESEARCH OVERVIEW

This study found that Ajovy demonstrated a favorable overall safety profile regardless of cardio- and cerebrovascular medical history, risk factors, or medication use.

The study looked at the safety profile in more than 2,800 patients with either episodic migraine or chronic migraine.

The researchers also found that taking a triptan did not pose any additional risk for people taking Ajovy preventively.



QUOTES

“In addition to overall safety and tolerability for patients with migraine, the CV [cardiovascular] safety of CGRP pathway–targeting antibodies has been a central concern due to CGRP’s role in the cardiovascular system.

“Here, we show that treatment with fremanezumab over 12 weeks has a favorable CV safety profile, even in patients with CV medical history or CVRFs [cardiovascular risk factors].”



OUR TAKEAWAY

- Calcitonin gene-related peptide (CGRP) is found in the cardiovascular system, and there has been concern about whether suppressing CGRP activity could have negative effects on the heart.
- This study found that Ajovy did not increase the risk of either heart or cardiovascular incidents.



RESEARCH LINK & AUTHORS

Full article available free at

<https://doi.org/10.1177/03331024221076485>

Diener, H. C.

McAllister, P.

Jurgens, T. P.

Kessler, Y.

Ning, X.

Cohen, J. M.

Campos, V. R.

Barash, S.

Silberstein, S. D.

Safety and tolerability of fremanezumab in patients with episodic and chronic migraine: a pooled analysis of phase 3 studies. *Cephalalgia*, 3331024221076485.

Research
Title

Efficacy and tolerability of combination treatment of topiramate and greater occipital nerve block versus topiramate monotherapy for the preventive treatment of chronic migraine: A randomized controlled trial

Publication Date January 2022

Medical Journal *Cephalalgia*

RESEARCH OVERVIEW

Topiramate is an anti-seizure medication often prescribed as a first-line migraine preventive.

This research looked at the effectiveness of combining topiramate and a greater occipital nerve block using either lidocaine or lidocaine plus a steroid. Both combinations were found more effective than the use of topiramate alone.



QUOTES

“Combination treatments of topiramate with monthly injections of greater occipital nerve block were more effective in reducing monthly migraine days in chronic migraine than topiramate monotherapy at Month 3. Combination treatments were well tolerated.”



OUR TAKEAWAY

- Combination treatments can have a greater impact than one treatment by itself. It is important to ensure you have medical approval to use certain medications together, as some combinations can be dangerous. When combined appropriately, however, they can be more effective and even synergistic.
- In the case of topiramate, combining with either lidocaine or a lidocaine-steroid injection of the greater occipital nerve was found to be more effective than treatment with topiramate alone. Topiramate remains a relatively low-cost migraine preventive.

RESEARCH LINK & AUTHORS



Abstract available free at
<https://journals.sagepub.com/doi/10.1177/03331024221082077>

Chowdhury, D., Mundra, A., Datta, D., Duggal, A., Krishnan, A., & Koul, A. (2022).

Efficacy and tolerability of combination treatment of topiramate and greater occipital nerve block versus topiramate monotherapy for the preventive treatment of chronic migraine: A randomized controlled trial. *Cephalalgia*, 333102422108207
<https://doi.org/10.1177/03331024221082077>

Research
Title

Resumption of migraine preventive treatment with CGRP(-receptor) antibodies after a 3-month drug holiday: a real-world experience

Publication Date

March 2022

Medical Journal

*The Journal of
Headache and Pain*



RESEARCH OVERVIEW

The expert consensus of the European Headache Federation suggests that patients take a “medication holiday” after 6-12 months on a CGRP inhibitor, to see if preventive medication is still needed.

This study of patients taking three leading CGRP medications found that a large percentage of those discontinuing CGRP treatment suffered an increase in monthly headache days. Three-quarters of those who then resumed treatment saw their headache days decrease to about what they were prior to the medication “holiday;” however, about a quarter did not significantly improve on restart.



QUOTES

“Migraine frequency increases after the cessation of successful preventive treatment with CGRP monoclonal antibodies (mAbs).

“In this study, we aimed to evaluate the course of migraine after treatment resumption. Re-initiation of treatment with CGRPs after a drug holiday leads to a significant reduction of migraine frequency and medication use as well as improvement in quality of life.”



OUR TAKEAWAY

- The CGRP medications are still relatively new, and we’re still learning about them. This report on 39 real-world patients suggests that stopping and restarting a CGRP treatment might leave some people with less benefit than they originally had.
- All patients resumed taking the same CGRP they’d used originally, so we don’t know if switching to another CGRP might have restored efficacy.



RESEARCH LINK & AUTHORS

Full article available free at

<https://doi.org/10.1186/s10194-022-01417-9>

Raffaelli, B., Terhart, M., Mecklenburg, J., Neeb, L., Overeem, L. H., Siebert, A., Steinicke, M., & **Reuter, U.** (2022).

Resumption of migraine preventive treatment with CGRP(-receptor) antibodies after a 3-month drug holiday: a real-world experience. *J Headache Pain*, 23(1), 40. <https://doi.org/10.1186/s10194-022-01417-9>



Research
Title

Exploring the contributing factors to multiple chemical sensitivity in patients with migraine

Publication Date

March 2022

Medical Journal

Journal of Occupational Health



RESEARCH OVERVIEW

This study assessed the frequency of multiple chemical sensitivity (MCS) and its related factors in 95 patients with migraine.

MCS is an intolerance to specific chemicals, resulting in systemic symptoms that include characteristics of migraine disease. A wide variety of chemical substances have been identified as triggers for some people.

Although migraine has been associated with central sensitivity syndrome, the relationship between MCS and migraine had not been previously studied.



QUOTES

“[Multiple chemical sensitivity] was observed in 20% of patients with migraine, and our study results may indicate a possible association of MCS with central sensitization and hypersensitivity-related symptoms in patients with migraine.”



OUR TAKEAWAY

- MCS is thought to be related to central sensitivity syndrome (CSS), an overall hypersensitivity of the central nervous system.
- In addition to migraine, other diseases thought to be related to CSS include restless leg syndrome, irritable bowel syndrome, depression, temporomandibular joint disorder, and chronic fatigue syndrome.



RESEARCH LINK & AUTHORS

Full article available free at

<https://doi.org/10.1002/1348-9585.12328>

Suzuki, K
Okamura, M.
Haruyama, Y.,
Suzuki, S.
Shiina, T.
Kobashi, G.
Hirata, K.

Exploring the contributing factors to multiple chemical sensitivity in patients with migraine. *Journal of Occupational Health* 64.1 (2022): e12328.

Research
TitleGeneralized anxiety disorder: a predictor
for poor responsiveness to botulinum toxin
type A therapy for pediatric migraine

Publication Date

March 2022

Medical Journal

Pediatric Neurology

RESEARCH OVERVIEW

According to this study of 56 patients, Botox was found to reduce monthly headache days and headache intensity by 50% or more in adolescent and young adult patients.

Adolescent and young adults are defined as those aged between 13 and 21 years old.

Botox has been found to be both safe and effective for use in young people. In this study, 73% of the patients had a greater than 50% decrease in headache frequency.



QUOTES

“BoNT-A [Botox] remains a safe and effective therapy for adolescent and young adult patients with chronic migraines at nine months of follow-up. Generalized anxiety disorder with Generalized Anxiety Disorder-7 score greater than 15 can be a major predictor of poor response to this therapy.”



OUR TAKEAWAY

- In this study, the majority of patients responded to Botox treatment.
- Approximately one quarter of patients did not respond to Botox. Amongst this group of nonresponders, 67% had generalized anxiety disorder as a co-morbidity. This suggests that screening for anxiety disorder might be useful in this age group prior to starting Botox therapy for migraine.



RESEARCH LINK & AUTHORS

Abstract available free at

<https://doi.org/10.1016/j.pediatrneurol.2022.02.002>

Goenka, A., Grace Yu, S., Chikkannaiah, M., George, M. C., MacDonald, S., Stolfi, A., & Kumar, G. (2022).

Generalized Anxiety Disorder: A Predictor for Poor Responsiveness to Botulinum Toxin Type A Therapy for Pediatric Migraine. *Pediatr Neurol*, 130, 21-27.