Medication Overuse Headache(MOH)

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Medication overuse headache(MOH)

Analgesic rebound headache

= Drug-induced headache

= Medication-misuse headache

a secondary headache disorder, frequently complicates management of other headache disorders

?

- A 24 Yr/o obese married woman, present with cc of headache(HA) since 6years ago deteriorating since 5months ago.

- HA characteristics:

shifting unilateral, often frontotemporal , pulsatile with photophobia, phonophobia, osmophobia, nausea, vomiting, flashing light sensation >10 minutes during headache in some HA attacks.

- Previous HA frequency : 4/m
- Duration:6 hrs.
- Severity:7/10

?

- Regular daily NSAID using for arthralgia since 7 months ago.
- HA severity and frequency gradually changed since 5 months ago.

- HA became more severe and frequent(Frequency: >20 days/month within the past 4 months),making the patient overuse more celecoxib for almost everyday in a month in the past 5 months.

- Frequency: >20 days/month within the past 4 months
- Duration:>8 hours ,not responding to celexib

- Severity:9-10/10

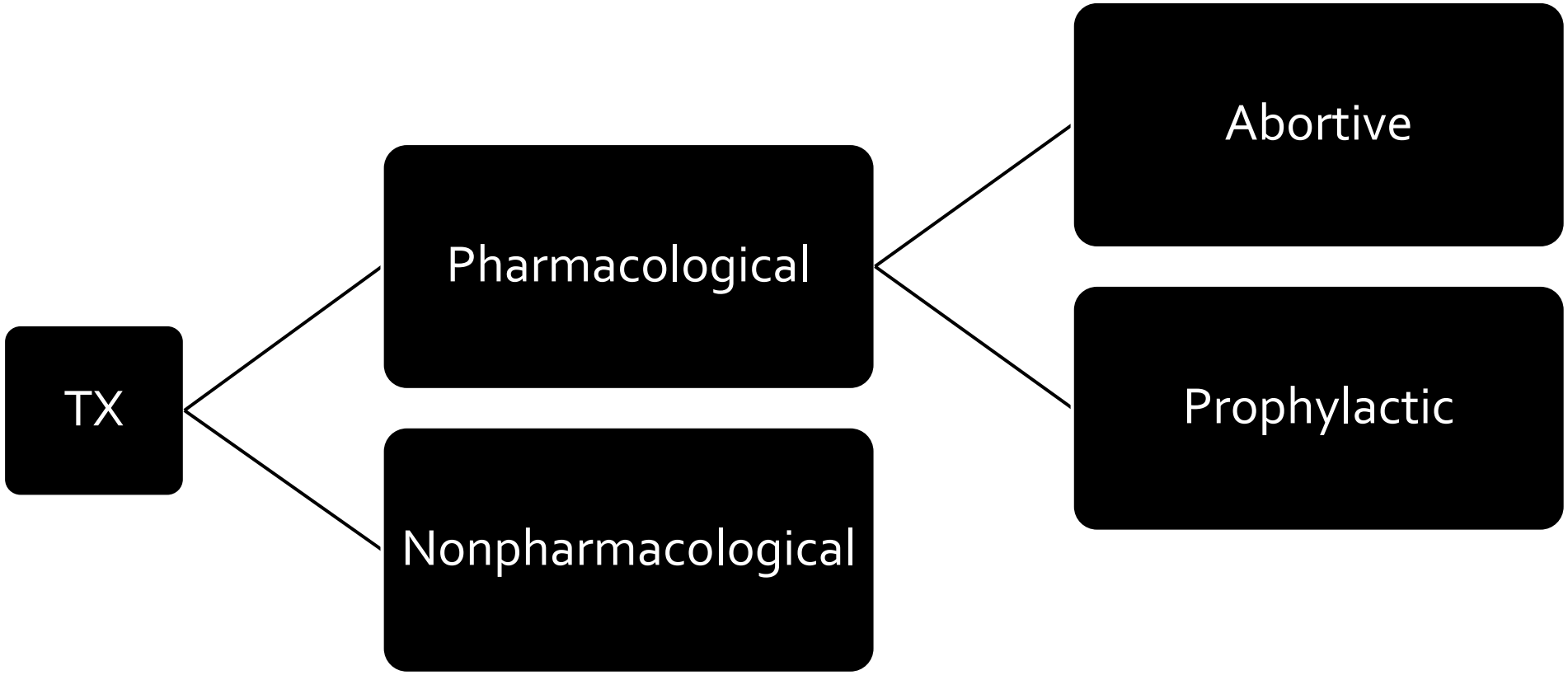
Diagnosis??

- Episodic migraine +- aura → chronic migraine +- aura

+Medication overuse headache???

Treatment??

Headache Treatment:



Acute=Symptomatic=Abortive migraine HA Treatment

- Simple Analgesics:Acetaminophen,NSAIDs
- Triptans, 5-HT1B/1D receptor agonists—sumatriptan, Rizatriptan, zolmitriptan
- Ergot alkaloids (eg, dihydroergotamine)
- Narcotic analgesics
- Antiemetics(plazil, promethasin)

Acute cluster HA treatment

- **100 percent oxygen**
- **Triptans (subcutaneous or intranasal)**
- Intranasal lidocaine
- Oral ergotamine
- Intravenous dihydroergotamine

Headache Treatment

- ✓Patients should understand the differences between abortive and prophylactic treatment

MOH TX

- Limit the abortive therapy:

- ✓ Triptans, ergotamine/dihydroergotamine or combination analgesics < nine or fewer days a month on average

- ✓ NSAIDs to 14 or fewer days a month

- ✓ **In general less then 2 days /week**

Medication Overuse Headache

- Headache occurring on > 15 days/month in a patient with a pre-existing headache disorder developing as a consequence of regular overuse of acute or symptomatic headache medication for >3 months.

- It usually resolves after the overuse is stopped.

✓ MOH is restricted to individuals who already have other headache disorders. (esp Tension type headache and migraine type headache)

Regular overuse??

- ✓Ergotamines, triptans, opioids, combination analgesics or opioids or when the pattern of overuse cannot be reliably established→ for ≥10 days per month for >3 months

- ✓Simple analgesics (ie, acetaminophen, aspirin, or NSAID)→ for ≥15 days per month for >3 months

- ✓CGRP antagonists – Limited Experience but unlikely to cause MOH

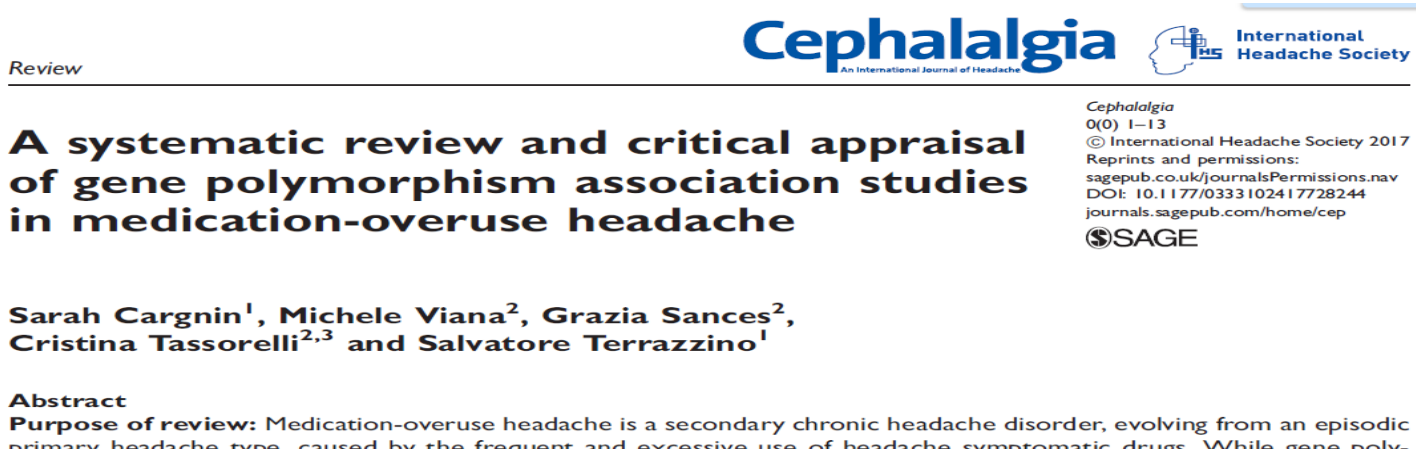
Pathophysiology

- Many drugs used for the acute symptomatic treatment of headache can cause medication overuse headache (MOH) in individuals with primary headache disorders.

- The precise mechanisms → still uncertain.

- Risk factors:
  - ✓ Genetic predisposition
  - ✓ Central sensitization
  - ✓ Biobehavioral factors

Risk factors



Review

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SAGE

A systematic review and critical appraisal of gene polymorphism association studies in medication-overuse headache

Sarah Cargnin[1], Michele Viana[2], Grazia Sances[2], Cristina Tassorelli[2,3] and Salvatore Terrazzino[1]

Abstract
Purpose of review: Medication-overuse headache is a secondary chronic headache disorder, evolving from an episodic primary headache type, caused by the frequent and excessive use of headache symptomatic drugs. While gene poly-

❖Genetic predisposition

- MOH does not develop de novo in individuals with no previous headache history.
- In a 2018 systematic review, 33 genes with 50 polymorphisms were associated with an increased risk of MOH

Central sensitization

- Facilitation of trigeminal pain processing in patients with chronic headache

- chronic exposure to triptans and other analgesics could lead to downregulation of serotonin receptors and changes in central inhibitory pathways

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Evidence-Based Understanding of Medication-Overuse Headache: Clinical Implications

David Dodick, MD; Frederick Freitag, DO

This article discusses the problem of medication-overuse headache from a variety of perspectives, based on the best available evidence. This presentation clarifies the definition of the disorder, distinguishing it from alternative terminology, and describes its epidemiology, natural history, and clinical course. Antimigraine medications are believed to differ in their relative liability to contribute to the development of medication-overuse headache. Patients most at risk of developing medication-overuse headache need to be identified so that appropriate preventive measures can be initiated.

Key words: medication-overuse headache, diagnosis, epidemiology, transformed migraine, chronic daily headache, definition, pathogenesis, treatment, prevention, analgesic rebound headache

Abbreviations: DHE dihydroergotamine, NSAID nonsteroidal antiinflammatory drug, ICHD-2 International Classification of Headache Disorders-2, RR risk ratio, CI confidence interval

Risk factors

❖MOH is a biobehavioral disorder

- Some patients may have addictive disease, characterized by compulsive drug seeking and drug taking behavior despite negative consequences, as the basis of MOH.

- Other patients may use opiates or other drugs with sedative/anxiolytic effects to treat both pain and a coexistent anxiety disorder

CLINICAL CORRESPONDENCE

Medication overuse headache (MOH) is a biobehavioural disorder

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EPIDEMIOLOGY

- ✓ The prevalence in the general population is approximately 1 to 2 percent.

- ✓F>M

Clinical features

- The severity, location, and type of head pain with MOH can vary significantly among different individuals, but headache commonly occurs daily or nearly daily.

- In clinical practice, MOH often manifests as a headache that is present or develops upon awakening.

- Acute symptomatic treatment only provides transient relief, which leads to more acute symptomatic medication use.

Diagnosis

- The diagnosis is based upon clinical impression.

- A history of analgesic use averaging more than two to three days per week in association with chronic daily headache supports the diagnosis of MOH.

ICHD-3 diagnostic criteria

- Headache occurring on > 15 days/month in a patient with a pre-existing headache disorder.
- Regular overuse for more than three months of one or more drugs that can be taken for acute and/or symptomatic treatment of headache.
- Regular intake, for ≥10 days per month for >3 months, of ergotamines, triptans, opioids, combination analgesics or opioids or when the pattern of overuse cannot be reliably established.
- Regular intake, for ≥15 days per month for >3 months, of simple analgesics (ie, acetaminophen, aspirin, or NSAID).
- Not better accounted for by another ICHD-3 diagnosis.

Differential diagnosis

- Any form of chronic daily headache, whether primary or secondary, needs to be considered in the differential diagnosis of MOH.

Danger Signs; SNNOOP10

- Systemic symptoms including fever
- Neoplasm history
- Neurologic deficit (including decreased consciousness)
- Onset is sudden or abrupt
- Older age (onset after age 50 years)

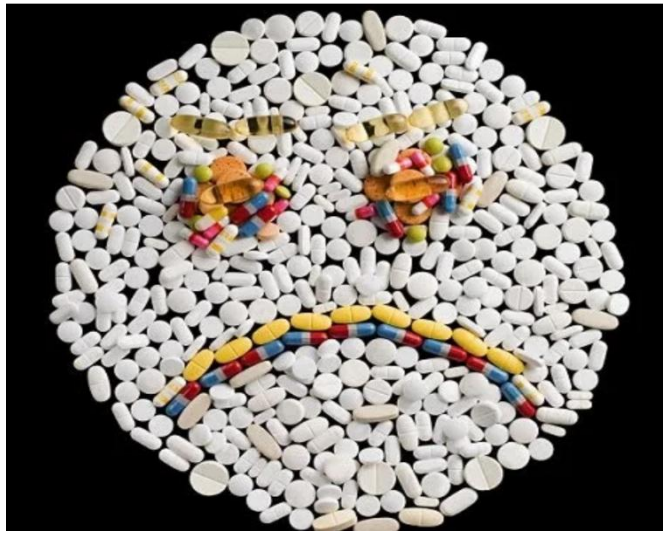
SNNOOP10----P10:

- Pattern change or recent onset of new headache
- Positional headache
- Precipitated by sneezing, coughing, or exercise
- Papilledema

SNNOOP10----P10:

- Progressive headache and atypical presentations
- Pregnancy or puerperium
- Painful eye with autonomic features
- Post-traumatic onset of headache
- Pathology of the immune system such as HIV
- Painkiller (analgesic) overuse (eg, medication overuse headache) or new drug at onset of headache

Treatment



- ✓ Discontinuation of the overused medication is an integral part of the treatment strategy.

Patient education

- play a **major role** in withdrawal therapy of MOH.

Patient education

- ✓Clinicians must educate patients about the detrimental effects of analgesic overuse.
- ✓ Patients need to understand that analgesics have the potential to cause medication overuse headache (MOH).
- ✓ and that analgesic overuse can potentially reduce the effectiveness of headache preventive measures.

Outpatient and inpatient strategies

- Most patients can be managed as outpatients.
- Outpatient discontinuation → appropriate for patients who are highly motivated and do not take barbiturates or tranquilizers.
- it is often reasonable to try outpatient treatment first unless serious withdrawal problems develop or are considered likely.

Discontinuation of medications other than barbiturates, opioids, Or BNZ

- Start preventive therapy or optimize existing preventive therapy and do one of the following:
- 1) Discontinue the overused medication and switch to an alternative medication from a different class and Limit the use of acute medications to no more than two days per week
- 2) Taper the acute medication gradually as the headache frequency decreases in response to effective preventive therapy

Discontinuation of barbiturates, opioids, or benzodiazepines

- we suggest a gradual taper when these agents are being used frequently or at high doses. The taper can usually be accomplished in two to four weeks.

- For patients discontinuing butalbital, we suggest a phenobarbital taper

- 30 mg of phenobarbital = 100 mg of butalbital
- Assuming the total daily dose of butalbital is no higher than 300 mg, the recommended maximum, the initial phenobarbital dose should not exceed 90 mg
- can be tapered by 30 mg every three to seven days

Discontinuation of barbiturates, opioids, or benzodiazepines

- When there is concern for opioid withdrawal symptoms, treatment with a once-weekly transdermal clonidine patch (0.1 to 0.2 mg/24 hours) for one to two weeks may help

Bridge therapy

- For patients who are expected to be **unsuccessful** with the strategy of abrupt discontinuation, **bridge therapy** can be added to the treatment regimen:

- short-term use of certain oral (naproxen, tizanidine, glucocorticoids
- intravenous (dihydroergotamine, prochlorperazine, valproic acid, aspirin) medications.

Bridge therapy

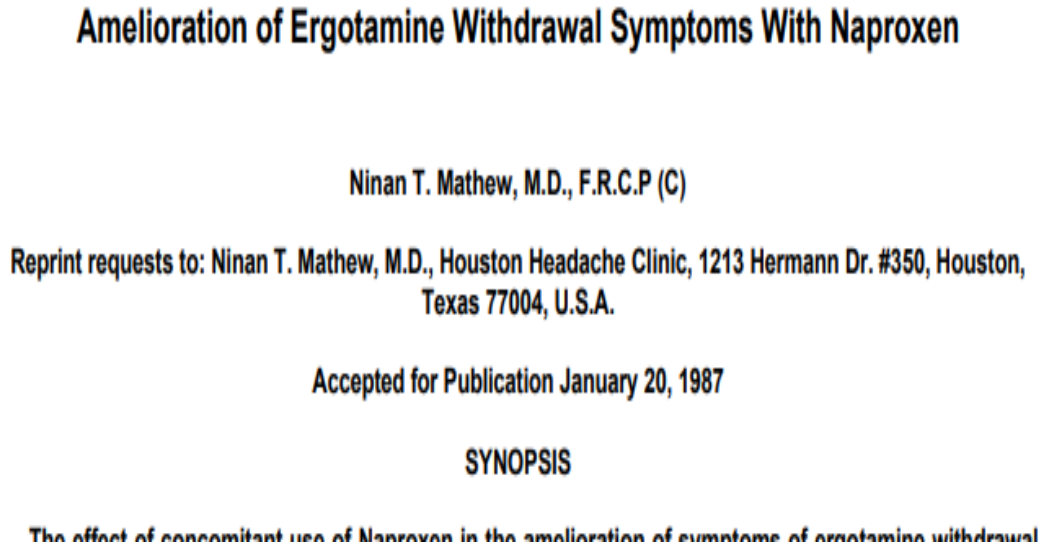
- we suggest use of either long-acting NSAIDs, prednisone, or dihydroergotamine (DHE). Antiemetics are also frequently needed in clinical practice

- For **inpatient** withdrawal, we suggest intravenous bridge therapy using dihydroergotamine plus metoclopramide

- prochlorperazine
- valproate sodium
- methylprednisolone

Bridge therapy-Naproxen

- Naproxen 500 mg twice daily for two to four weeks while the overused acute medication is withdrawn.
- An alternative is naproxen 500 mg twice daily for one week, and then naproxen once daily for one week.



Amelioration of Ergotamine Withdrawal Symptoms With Naproxen

Ninan T. Mathew, M.D., F.R.C.P (C)

Reprint requests to: Ninan T. Mathew, M.D., Houston Headache Clinic, 1213 Hermann Dr. #350, Houston, Texas 77004, U.S.A.

Accepted for Publication January 20, 1987

SYNOPSIS

The effect of concomitant use of Naproxen in the amelioration of symptoms of ergotamine withdrawal

Bridge therapy: Transitional therapy

Low-Dose Tizanidine With Nonsteroidal Anti-inflammatory Drugs for Detoxification From Analgesic Rebound Headache

Timothy R. Smith, MD, RPh

Objective.—To describe an outpatient regimen for analgesic detoxification and resolution of analgesic rebound headache.

- ✓Bridge therapy using **tizanidine combined with a NSAID** may be effective for MOH.

Bridge therapy-Glucocorticoids

- ✓ The utility of oral glucocorticoids for MOH bridge therapy is uncertain

- ✓ we commonly prescribe 60 mg daily * 5 days

Bridge therapy-Glucocorticoids

- Methylprednisolone 100 to 200 mg BD for 2-3 days.

- Dexamethasone (IV or IM) → 8 to 20 mg daily in divided doses, rapidly tapering over two to three days.

- Hydrocortisone IV via a saline drip at 100 mg over 10 minutes→
  - Day 1: QID
  - Day 2:TDS
  - Day 3:BD
  - Day 4:Daily

Bridge therapy-Valproate

- Valproate — loading dose of 15 mg/kg infused over 30 minutes, followed by maintenance doses of 5 mg/kg infused over 15 minutes every eight hours for 12 to 48 hours.

Dihydroergotamine

- DHE appears to be beneficial as bridge therapy for MOH. Intravenous (IV) DHE is also used as treatment for status migrainosus

- Repetitive IV DHE (the "Raskin protocol"): These patients received IV DHE and metoclopramide every eight hours
- Continuous IV DHE * 4 days : as effective as repetitive IV DHE.

Dihydroergotamine

❑Repetitive IV DHE TX:

- IV metoclopramide (10 mg)/ 30 minutes,
- followed by a test dose of IV DHE (0.5 mg)/ one minute
- Therapy is stopped if hypertension, severe nausea, or chest pain occur.

✓clinically significant improvement→ DHE (0.5 mg) every eight hours.

Dihydroergotamine

- ✓Persistent headaches without severe nausea→ additional dose of DHE (0.5 mg) one hour after the first dose→ and then DHE (1 mg) every eight hours.
- DHE therapy is continued every eight hours until the patient is headache-free.
- At that point, IV DHE is tapered to every 12 hours for two or three doses, then discontinued if the patient remains headachefree.

Dihydroergotamine

- Thereafter, any breakthrough headaches are treated with IV DHE every eight hours as needed.
- Metoclopramide (10 mg) is administered as needed before each infusion of DHE.
- In patients who have severe nausea, the metoclopramide dose is increased to 20 mg, **or** the next dose of DHE is decreased to 0.25 mg.
- The doses of DHE and metoclopramide are adjusted daily based upon headache severity and side effects.

Dihydroergotamine

- Continuous IV DHE : 3 mg DHE / 1 Lit normal saline at 42 mL/hr by IV infusion pump, totaling 3 mg of DHE over 24 hours if administered at a constant rate
- Metoclopramide (10 mg IV) is given every eight hours as needed for nausea for approximately six doses.
- Adjustments in DHE dosage are made to alleviate side effects. The delivery of IV DHE is decreased or interrupted if significant nausea, vomiting, leg cramps, diarrhea, or other undesirable symptoms occur

Dihydroergotamine

❑Side effects and contraindications

- Significant adverse reactions to DHE include nausea, vomiting, dizziness, and somnolence.
- Uncommon but important reactions include arterial and coronary vasospasm, hypertension, and ventricular arrhythmias.

❑**Contraindication of DHE**: ischemic vascular disease involving the coronary, cerebrovascular, or peripheral circulations.

- pregnancy, uncontrolled hypertension, hemiplegic migraine, migraine with brainstem aura, sepsis, and severe hepatic or renal dysfunction.

Preventive headache medication

- At the time of analgesic discontinuation, after or before discontinuation??

- We suggest starting at the time the offending medication is discontinued or even before

Research

JAMA Neurology | Original Investigation

Comparison of 3 Treatment Strategies for Medication Overuse Headache
A Randomized Clinical Trial

Louise Ninett Carlsen, MD; Signe Bruun Munksgaard, MD, PhD; Mia Nielsen, MD; Ida Maria Storm Engelstoft, MD; Maria Lurenda Westergaard, MD, PhD; Lars Bendtsen, DMSc; Rigmor Højland Jensen, MD, DMSc

IMPORTANCE Medication overuse headache (MOH) is a disabling, globally prevalent disorder representing a well-known and debated clinical problem. Evidence for the most effective treatment strategy is needed.

Supplemental content

CME Quiz at jamacmelookup.com and CME Questions page 1184

Review

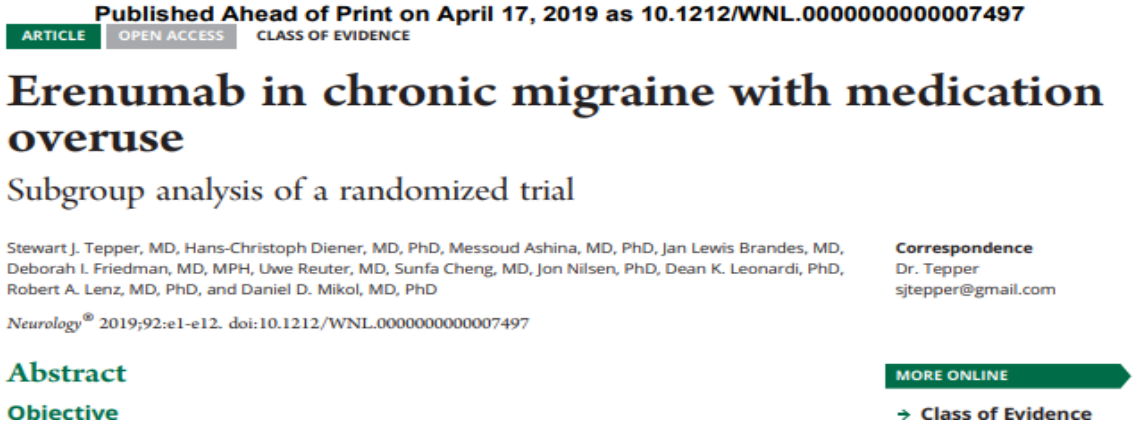
For reprint orders, please contact reprints@future-drugs.com

Management of medication-overuse headache

Mark Obermann and Zaza Katsarava†

Medication-overuse headache (MOH) has developed into the third most common type of

- In contrast, other authors argue that a preventive drug is unlikely to help during acute analgesic withdrawal, and note that some patients with MOH will not need a prophylactic agent after successful withdrawal



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ARTICLE OPEN ACCESS CLASS OF EVIDENCE

Erenumab in chronic migraine with medication overuse

Subgroup analysis of a randomized trial

Stewart J. Tepper, MD, Hans-Christoph Diener, MD, PhD, Messoud Ashina, MD, PhD, Jan Lewis Brandes, MD, Deborah I. Friedman, MD, MPH, Uwe Reuter, MD, Sunfa Cheng, MD, Jon Nilsen, PhD, Dean K. Leonardi, PhD, Robert A. Lenz, MD, PhD, and Daniel D. Mikol, MD, PhD

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Neurology® 2019;92:e1-e12. doi:10.1212/WNL.0000000000007497

Abstract

Objective

MORE ONLINE

→ Class of Evidence

Cephalalgia
An International Journal of Headache

International Headache Society

doi:10.1111/j.1468-2982.2009.01859.x

REVIEW

Utility of topiramate for the treatment of patients with chronic migraine in the presence or absence of acute medication overuse

H-C Diener[1], DW Dodick[2], PJ Goadsby[3], ME Bigal[4*], G Bussone[5], SD Silberstein[6], N Mathew[7], S Ascher[8], J Morein[8], JF Hulihan[8], DM Biondi[8] & SJ Greenberg[9†]

[1]Department of Neurology, University of Duisburg-Essen, Essen, Germany, [2]Mayo Clinic, Scottsdale, AZ, [3]Department of Neurology, University of California, San Francisco, CA, [4]Merck Scientific Affairs—Neuroscience, Whitehouse Station and [8]Ortho-McNeil Janssen Scientific Affairs, LLC, Titusville, NJ, [6]Jefferson Headache Center, Philadelphia, PA, [7]Houston Headache Clinic, Houston, TX and [9]Neurology, Global Clinical Development EMD Serono, Inc., Rockland, MA, USA, and [5]Department of Neurology, 'C. Besta' Neurological Institute, Milan, Italy

Cephalalgia

Diener H-C, Dodick DW, Goadsby PJ, Bigal ME, Bussone G, Silberstein SD, Mathew N, Ascher S, Morein J, Hulihan JF, Biondi DM & Greenberg SJ. Utility of topiramate for the treatment of patients with chronic migraine in the presence or absence of acute medication overuse. Cephalalgia 2009; 29:1021–1027. London. ISSN 0333-1024

Chronic migraine has been linked to the excessive use of acute headache medications. Medication overuse (MO) is commonly considered the most significant risk factor for the progression of migraine from an episodic to a chronic condition. Managing MO is a challenge. Discontinuation of the acute medication can result in withdrawal headache, nausea, vomiting and sleep disturbances. This

MOH might reduce the effect of prophylactic medications, However, in randomized controlled trials of topiramate, onabotulinumtoxinA, and erenumab, prophylactic therapy was similarly Effective in patients who were overusing medications and those who were not

Regardless of the exact timing with which patients discontinue their overused medication and regardless of whether preventive medication can reduce headache frequency despite medication overuse, discontinuation of the overused medication is indicated to reduce medication side effects and toxicities.

Follow-up and relapse prevention

- Patients frequently return to a pattern of intermittent headaches

PROGNOSIS

- The long-term success of withdrawal from medication overuse headache (MOH) depends on:
  - the type of primary headache
  - the type of overused medication.

- Most relapses happen in the first year after withdrawal.

- A 24 Yr/o obese woman, married present with cc of headache(HA) since 6years ago deteriorating since 5months ago.

- HA charachteristics:

shifting unilateral, pulsatile with photophobia, phonophobia, osmophobia, nausea, vomiting, flashing light sensation >10 minutes during headache in some HA attacks.

- Previous HA frequency : 4/m
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- Frequency: >20 days/month within the past 4 months
- Duration:>8 hours ,not responding to celexib

- Severity:9-10/10

Diagnosis??

- **Episodic migraine +- aura → chronic migraine +- aura +Medication overuse headache**

MOH Treatment

- ✓Discontinue overused medication
- ✓Bridge (transitional) therapy.
- ✓preventive (prophylactic) therapy.
- ✓Screening and intervening for comorbid psychiatric and substance use disorders.
- ✓Close follow-up after discontinuation

Journal of Pain Research

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REVIEW

Medication-overuse headache: a review

This article was published in the following Dove Press journal:
Journal of Pain Research
26 June 2014
Number of times this article has been viewed

Espen Saxhaug

Abstract: Medication-overuse headache (MOH) is a worldwide health problem with a preva-

Thank you for your attention