


# Assessing and managing medication overuse headache in Australian clinical practice

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**To cite:** Wijeratne T, Jenkins B, Stark RJ, *et al.* Assessing and managing medication overuse headache in Australian clinical practice. *BMJ Neurology Open* 2023;5:e000418. doi:10.1136/bmjno-2023-000418

Received 28 January 2023  
Accepted 30 April 2023



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## ABSTRACT

More than 3 million Australians are estimated to have migraine disorders, and over a quarter of a million Australians are estimated to have medication overuse headache (MOH). The personal, societal and economic burden of MOH is high. MOH impacts an individual's ability to work or study, care for family or themselves, culminating in poor quality of life. Accurate and timely diagnosis and treatment of MOH are imperative. Withdrawal failures and relapse rates are high in MOH. Treatment of MOH is aimed at ceasing medication overuse and reducing monthly migraine days with the aim of achieving a pattern of well-controlled episodic migraine. Current treatment approaches in routine practice include withdrawal with preventive treatment, withdrawal with optional preventive treatment in the subsequent weeks and preventive treatment without withdrawal. This viewpoint article provides an overview of managing MOH in Australian clinical practice, with a focus on the importance of patient education and the role of preventive treatment in supporting patients as they withdraw from acute migraine medication(s).

## INTRODUCTION

Medication overuse headache (MOH) is described in the latest International Classification of Headache Disorders third edition (ICHD-3) criteria as a secondary headache disorder that occurs as a consequence of the overuse of medication to alleviate symptoms of a primary headache disorder, such as chronic migraine or tension-type headache. Patients caught in this vicious cycle may experience increasing frequency and severity of headache despite taking increasing and excessive amounts of acute headache medication.<sup>1–3</sup>

The pathophysiology of MOH is poorly understood.<sup>2</sup> Central sensitisation is thought to play an important role given that patients with migraines or tension-type headache appear more prone to developing the secondary headache disorder.<sup>2</sup>

Migraine is the leading cause of disability in Australia.<sup>4</sup> According to 2019 estimates, more than 3.41 (3.995–2.931 IU) million Australians are affected by migraine, and with

## KEY POINTS









- ⇒ Medication overuse headache (MOH) is a complex condition associated with high rates of withdrawal failure and relapse.
- ⇒ Treatment of MOH involves withdrawal of the causative acute migraine medication with the aim to cease medication overuse and reduce monthly migraine days to a pattern of well-controlled episodic migraine.
- ⇒ Education plays a vital role in engaging and motivating people to be proactive in effectively managing MOH and preventing relapses, and in supporting withdrawal compliance.
- ⇒ Preventive treatment with topiramate, onabotulinumtoxinA or anti-calcitonin gene-related peptide monoclonal antibodies can be effective in supporting withdrawal compliance and potentially increasing MOH remission rates.

a global prevalence of 1%–2%, an estimated quarter of a million of these Australians have MOH.<sup>3–6</sup>

For patients with MOH, withdrawal failures and relapse rates remain high,<sup>6–9</sup> likely because patients often experience high rates of monthly migraine days (MMDs) despite medication withdrawal.<sup>9 10</sup> Successful treatment may be further complicated by comorbidities of MOH, such as anxiety, depression and subclinical obsessive-compulsive disorders.<sup>2 11</sup>

In Australia, real-world evidence demonstrates a high rate of opioid use in the treatment of acute migraine in the emergency setting.<sup>11 12</sup> The popularity of self-medication with easily available over-the-counter analgesics<sup>13</sup> may also contribute to the national burden of MOH.

Although MOH accounts for a large proportion of referrals to specialist headache clinics,<sup>14</sup> the advent of newer, highly effective migraine-preventive medications may help general neurology practices better manage MOH.

|  |  |
|--|--|
| How many headache days are you having each month on average?                                     |  <b>Diagnostic criteria:</b> Headache occurs on $\geq 15$ or more days per month. <sup>1</sup><br> <b>Helpful tip:</b> Ask the patient to keep a headache diary to obtain an accurate account of the number of headaches they are experiencing in a month. |
| How many 'crystal clear' days do you have each month?  |  <b>Helpful tip:</b> 'Crystal clear days' are those where the patient has no headache or headache-related symptoms.   |
| How many days are you taking medication for your headache?                                       |  <b>Diagnostic criteria:</b> Regular use for $>3$ months of: simple analgesics on $\geq 15$ days/month OR ergotamines, triptans, opioids or combination-analgesics on $\geq 10$ days/month. <sup>1</sup>  |
| What medications do you take on these days? How many days do you take each of these medications? |  <b>Diagnostic criteria:</b> Asking about number of days of use of multiple medications can help identify individuals with MOH attributed to multiple drug classes not individually overused. <sup>1</sup>  |
| What brought you here to see me today?   |  <b>Helpful tip:</b> Worsening headaches may be an indicator that the patient is at risk of MOH.   |
| Do you use cannabis or cannabis derivatives for any reason (recreational or therapeutic)?        |  <b>Helpful tip:</b> Cannabis use can be associated with MOH. <sup>14</sup>   |
| Are you taking pain relievers for any conditions other than headache?                            |  <b>Helpful tip:</b> Intake of pain medications for non-headache conditions can contribute to MOH in individuals with pre-existing headache disorders. <sup>3</sup>   |

**Figure 1** Example of questions to assist with diagnosis of MOH. MOH, medication overuse headache.

This viewpoint article provides an overview of the assessment and management of MOH in Australia. For an in-depth discussion about MOH, the recent review from Dr Sun-Edelstein *et al* is recommended.<sup>9</sup>

### ASSESSING MOH IN CLINICAL PRACTICE

Diagnosis of MOH is based on a detailed clinical history with meticulous attention to medication use and symptoms. Asking the relevant questions and recording the responses are key. The question guide in [figure 1](#) has been developed by the authors as a practical tool to guide diagnostic discussions in practice.

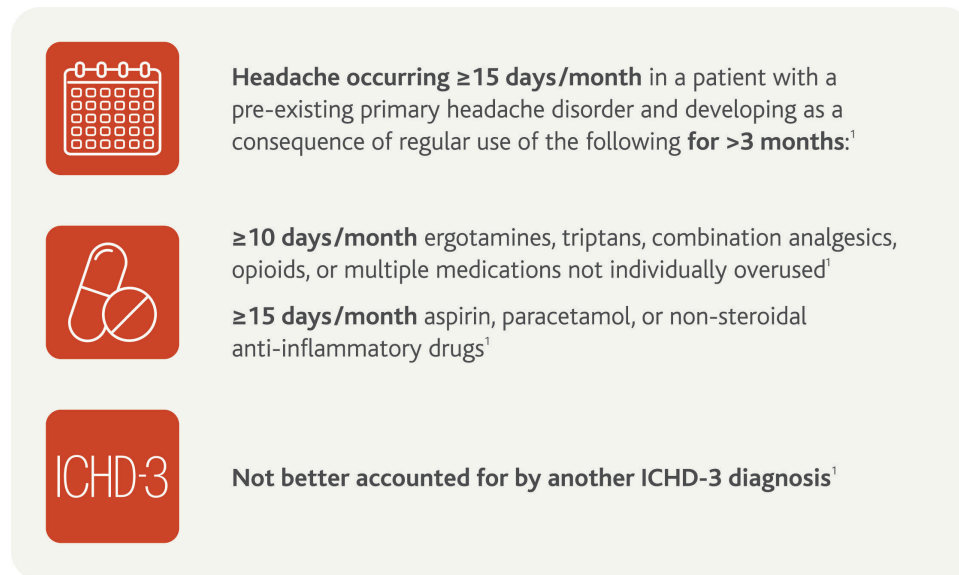
The ICHD-3 describes MOH as headache occurring on 15 or more days/month in a patient with a pre-existing primary headache and developing as a consequence of

regular overuse of acute or symptomatic headache medication ([figure 2](#)).<sup>1</sup>

Cannabis use has been associated with MOH according to a recent study conducted at Stanford University.<sup>15</sup> The finding of this study is of interest as it has been suggested that paracetamol, known to be associated with MOH, exerts its effect via the cannabinoid receptor type 1.<sup>16</sup>

### MANAGEMENT OF MOH

Treatment of MOH involves several steps, all aimed at ceasing medication overuse and reducing MMDs to a pattern consistent with well-controlled episodic migraine ([figure 3](#)).<sup>9</sup> Education is the key initial step to managing MOH and can be accomplished in both primary care and specialist settings.<sup>9</sup> Patient education is integral to



**Figure 2** International Classification of Headache Disorders 3 (ICHD-3) criteria for diagnosis of medication overuse headache.<sup>1</sup>

engaging and motivating patients to be proactive partners in their healthcare. Motivated individuals have the ability and commitment to self-manage migraines, engage in activities that can improve migraines and be involved in treatment decisions.<sup>17</sup> While concerns remain that some patients may cease acute medications and ‘suffer in silence’, the potential for this can be minimised with education about the importance of open communication between the clinician and patient.<sup>9</sup> Open and clear communication is imperative when educating about migraine and MOH. However, there is no ‘one-size-fits-all’ strategy, and communication must be individualised.

When approaching MOH education, clinicians should use a patient-centred approach.

- ▶ Get to know an individual’s level of understanding and engagement.
- ▶ Use open-ended questions to explore beliefs or barriers that exist towards treatment.
- ▶ Repeat education across multiple visits over the treatment course. It can be difficult for individuals to recall everything they have been told during a consultation.
- ▶ Provide written materials and use audio-visual aids where possible.
- ▶ Be non-judgemental and show empathy. This is imperative in establishing an open and honest patient–neurologist relationship.

Withdrawal of acute medication is the treatment of choice for MOH.<sup>6</sup> However, this can be an anxious time for the affected individual. They are likely to be apprehensive and resistant to the idea of withdrawal. Reassuring individuals that they will be well supported throughout their withdrawal, including descriptions of what that support will look like, is important. Clinicians should schedule regular appointments with individuals undergoing withdrawal to follow progress and provide additional education and motivation to adhere to appropriate behaviours.

Reassure patients that this follow-up is a means of support and not oversight.

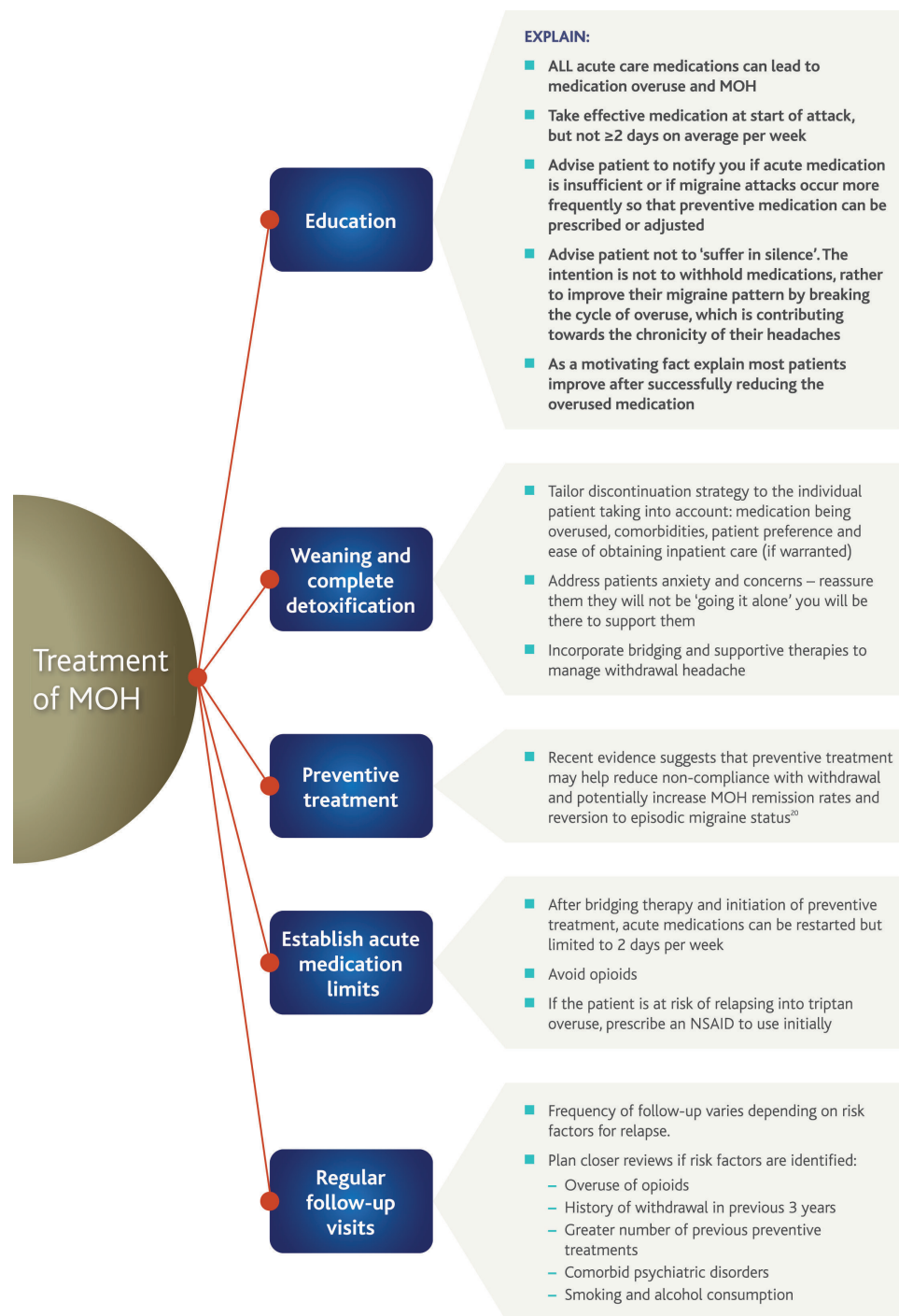
Medication withdrawal strategies include:

- ▶ Graded reduction in the dose and frequency of acute medication.
- ▶ Abrupt withdrawal of analgesics (this is not an appropriate strategy for individuals withdrawing from codeine or narcotics).
- ▶ Bridging therapy may be added to either of the above strategies, to assist with managing withdrawal headaches.

Bridging therapy is an especially important consideration in abrupt withdrawal. Patients should be counselled on the type of medication to use, the dose and frequency of usage.

Bridging therapies for individuals with triptan or non-opioid analgesia MOH include naproxen and prednisolone. Naproxen 750 mg sustained release can be taken orally, once daily for 5 days in the first week, then once daily for 3–4 days in the next 2 weeks, before stopping (This article discusses off-label use of some medicines based on the authors’ clinical experience (eg, naproxen modified release and prednisone in the management of MOH). Healthcare professionals are strongly encouraged to review the Approved Product Information of any medicine before prescribing.). Alternatively, a single-treatment course of prednis(ol)one 50 mg can be taken orally, once daily for 3 days, followed by a gradual dose reduction over 7–10 days before stopping. Additionally, some patients may benefit from chlorpromazine, prochlorperazine or domperidone.<sup>16</sup>

While opioid withdrawal can be attempted using gradual tapering, inpatient treatment is often necessary. Lignocaine or ketamine infusions may be considered as a bridging therapy for these patients, in a specialist service with appropriate monitoring.<sup>18</sup>



**Figure 3** Treatment of MOH. MOH, medication overuse headache; NSAID, non-steroidal anti-inflammatory drug.

The role of preventive treatment for withdrawal headache, and whether this should be started before, during or after withdrawal have been the source of much debate. Recent evidence suggests that preventive treatment from the start of withdrawal may improve compliance and potentially increase remission rates and reversion to episodic migraine.<sup>19 20</sup> Detoxification has traditionally been viewed as an essential aspect of MOH treatment. Early experiences indicated that withdrawal alone may significantly improve headaches, and that conventional preventive treatment was ineffective without

detoxification.<sup>10</sup> However, post hoc analyses from some clinical trials suggest that preventive treatment with topiramate or onabotulinumtoxinA, without early or deliberate withdrawal, can be effective in patients with chronic migraine and acute medication overuse.<sup>21–26</sup> While interpretation of these findings has been limited by methodological issues, these medications are often used in clinical practice. Furthermore, recent evidence indicates that the use of migraine-preventative medication, without changing acute medication, is just as effective as the use of migraine-preventive medication with



a change in acute medication and limiting treatment days.<sup>20</sup>

Data from trials of anti-calcitonin gene-related peptide (anti-CGRP) monoclonal antibodies for migraine prevention have provided more convincing support for the potential efficacy of preventive treatment without formal withdrawal of overused medications (see table 2 in the recent review from Sun-Edelstein *et al*).<sup>9</sup>

In the authors' experience, patients treated with anti-CGRP monoclonal antibodies are better able to self-detoxify as the reduction in MMDs reduces the need for acute medications. Many anti-CGRP treatment responders report needing acute migraine medications, such as triptans, less frequently, although narcotic medication overuse may be more refractory.

Patients should still be counselled about reducing acute medication even if a formal detoxification protocol is not required. Education on appropriate acute medication limits can begin immediately with prescription of preventive treatments.

A randomised controlled trial is currently underway to investigate whether anti-CGRP monoclonal antibody treatment (eptinezumab) combined with education on the cause of MOH would benefit patients with a dual diagnosis of migraine and MOH.<sup>27</sup>

A multidisciplinary approach to the management of patients with MOH, incorporating psychological counselling, group therapy, relaxation, cognitive-behavioural therapy and exercise, is ideal to enhance patients' confidence and improve treatment compliance and outcomes.<sup>28 29</sup>

## CONCLUSIONS

MOH is a complex condition that is likely underdiagnosed and poorly managed in Australia. While withdrawal of the causative acute medication is the treatment of choice in MOH, this can be daunting for patients.

Recent evidence suggests that preventative treatment may help reduce non-compliance with withdrawal and potentially increase MOH remission rates and reversion to episodic migraine status. Coupled with multidisciplinary care, these strategies can help to support patient withdrawal from causative acute migraine medications.

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**Acknowledgements** All authors acknowledge the medical writing support by Dr Tania Dickson of Vivacity Health, an IQVIA company.

**Contributors** TW, RJS, BJ and CS-E planned the manuscript. TW drafted the original manuscript. RJS, BJ, CS-E and TW reviewed and edited the manuscript. All authors approved the final manuscript as well as the revisions as suggested by the reviewers. TW is responsible as the overall guarantor for the contents of the manuscript.

**Funding** This manuscript was supported financially by Lundbeck.

**Competing interests** TW reported receiving funding for this submission from Lundbeck, as well as additional consulting fees on behalf of his institution. He reported participation in the Migraine Advisory Board for Lundbeck. He also serves within the following unpaid roles: ANZHS Foundation Co-Secretary, WFN-Co-Chair, WFN Public Awareness and Co-Chair World Brain Day, Asian Regional

Consortium of Headache President, Migraine Foundation International Chair and Director, Australian Institute of Migraine Co-founder and Medical Director, and World Federation of Neuro Rehabilitation SIG Migraine Global Chair. BJ reported receiving funding for this submission from Lundbeck, and payment for educational activities from Lundbeck, AbbVie, Eli Lilly and Teva. She reported her participation in Migraine Advisory Boards for Lundbeck, Allergan, AbbVie, Lilly and Teva. She also serves as President of the Australian and New Zealand Headache Society. RJS reported receiving funding for this submission from Lundbeck, and consulting fees and honoraria for other activities from Lundbeck, AbbVie, Eli Lilly, Teva and Pfizer. He reported his participation in Migraine Advisory Boards for Lundbeck, AbbVie, Eli Lilly, Teva and Pfizer. He currently serves as council member of ANZHS (immediate past president) and Trustee and Treasurer of WFN. CS-E reported receiving funding for this submission from Lundbeck and honoraria for other activities with Lundbeck, Teva and Eli Lilly. She also reported her participation in Migraine Advisory Boards for Lundbeck, Eli Lilly, Teva and Pfizer.

**Patient consent for publication** Not required.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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