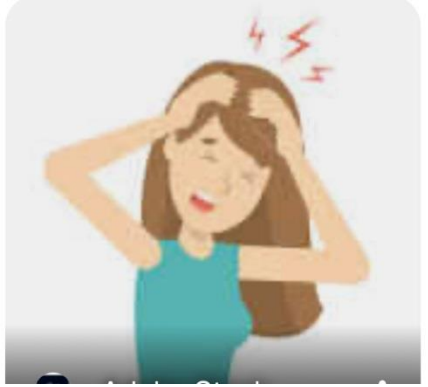
Professor Win Min Thit
M.B.,B.Sc, M.Med.Sc (Int. Med),
D.C.N (London), Dip. Med. Sc (ME),
MRCP (UK), FRCP (Edin),
FRCP(London)

Headache attributed to a substance or withdrawal

Case Scenario - 1



38-year-old female

- c/o frequent headaches
- Onset: age 20
- intermittent, moderately severe, throbbing headaches
- lasted one to two days
- associated with nausea and light sensitivity
- usually suffered during premenstrual period
- She was able to treat them with over-the-counter (OTC) analgesics such as the combination of aspirin, acetaminophen and caffeine

- These headaches increased in frequency over the next 10 years
- still responded to the OTC combination, but gradually increased her use of the medication
- Then, she occasionally missed work due to headaches
- Sleep pattern became more disrupted, wake in the early morning with a bad headache
- Need more medication to achieve the same level of pain relief
- becoming more irritable and feeling depressed
- She told - she just didn't want to live like this anymore

What's the Diagnosis of the patient?

This case represents a classic history of

"Medication overuse headache or analgesic overuse headache"

- common cause of nearly daily headache progression from intermittent pattern
- Proper treatment can lead to a significant improvement

Medication-overuse headache (MOH)

IHS Classification ICHD-3

International Headache Society (IHS ICHD-3) definition:

Criteria	
A	Headache on ≥ 15 days per month in a patient with a pre-existing headache disorder
B	Regular overuse (for ≥ 3 months) of one or more medications that can be used for the acute or symptomatic treatment of headache
C	Not better explained by another ICHD-3 diagnosis

Medication-overuse headache (MOH)

Subgroups		Medication use
8.2.1	Ergotamine overuse headache (ergot alkaloids)	≥ 10 days/month
8.2.2	Triptan overuse headache	≥ 10 days/month
8.2.3	Non-opioid analgesic overuse headache - Paracetamol (= acetaminophen) - Nonsteroidal anti-inflammatory drugs - Acetylsalicylic acid - Other analgesics	≥ 15 days/month
8.2.4	Opioid overuse headache	≥ 10 days/month
8.2.5	Combined analgesics (two or more analgesics, or an analgesic in combination with caffeine)	≥ 10 days/month

* Medication overuse headache (MOH) according to the diagnostic criteria of the International Headache Society ICHD-3) (e55)

- vary in severity and location
- even the slightest physical or mental effort trigger
- May be associated with nausea, restlessness, anxiety, irritability, insomnia, depression, difficulty concentrating
- can also be associated with predictable early morning headaches, probably due to the wearing off of the short-acting medication
- tolerance can develop, need more medication for same level of pain relief

❑ Depend on the original type of primary headache

Migraine patients who overuse triptans report

- daily migraines or increase in the frequency of migraines
- accompanying nausea, vomiting, photophobia, phonophobia become less prominent (become hard to distinguish from tension headaches)

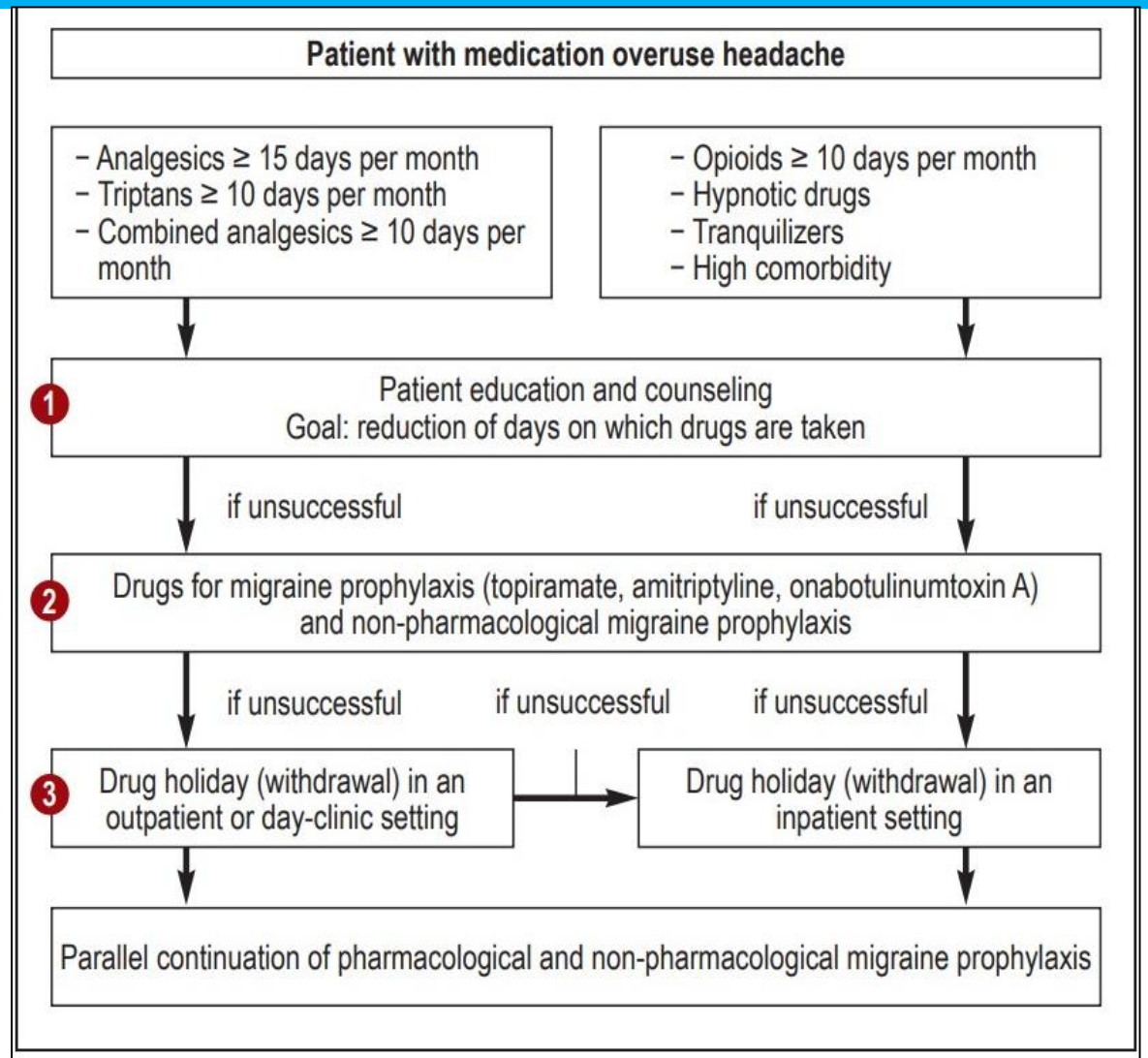
Chronic tension headache who overuse analgesics report

- more frequent dull, pressing holocranial headaches without changing character

Treatment of medication overuse headache

- Treatable
- Cornerstone → withdrawal from offending agent
- Headaches may get worse for 4-7 days after withdrawal
- Need a bridge during this period (fluid replacement, analgesics, antipsychotic etc.)

Treatment of medication overuse headache



The treatment of headache due to the overuse of analgesics and anti-migraine drugs

3 Steps treatment

Step 1 (Education and Counseling): To limit

- simple analgesics < 15 days/month
- specific analgesics, anti-migraine, caffeine containing analgesics <10 day/mth

Step 2: To initiate

- both pharmacological and non-pharmacological prophylaxis of primary headaches
- Non-drug approaches: biofeedback, massage, acupuncture, physical therapy

Step 3

- If these approaches fail, **drug holiday** (drug withdrawal) in appropriate outpatient, day care or inpatient setting

Prevention of Medication-overuse headache

- The most effective way → to identify patients at risk and to educate them about the use of acute medication
- The risk is higher in patients with
  - frequent headaches
  - opioids

Case Scenario - 2

- 18 year old girl was admitted to the emergency room
- c/o headache not responding to analgesics
- Diffuse pain, worse in the evenings but gradually disappeared at school
- History of admission to the hospital three times in the previous week and improved after injection of an analgesic on all occasions

- Past medical history : under care of a neurologist for migraine over the last two years
- These headaches met the diagnostic criteria for migraine without aura
- Her mother and father also had headaches
- Both her migraine attacks and those of her mother usually appeared on similar occasions and mostly in winter

- Carbon monoxide poisoning was suspected because the headaches only occurred at home and usually at the same time as other family members
- Blood COHb level of 11.9%
- 2 hours after oxygen, her symptoms were relieved
- Blood from the mother and father, COHb levels - 11.1%, 7.9%, respectively
- Investigation at home revealed a leaking domestic gas burner in the kitchen

Final Diagnosis of the patient?

Carbon monoxide (CO) induced headache

IHS Classification ICHD-3

88.1 Headache attributed to use of or exposure to a substance

8.1.3 Carbon monoxide (CO) induced headache

A. Bilateral headache fulfilling criterion C

B. Exposure to CO has occurred

C. Evidence of causation demonstrated by all of the following:

1. headache has developed within 12 hours of exposure to CO
2. headache intensity varies with the severity of CO intoxication
3. headache has resolved within 72 hours of elimination of CO

D. Not better accounted for by another ICHD-3 diagnosis.

Case Scenario - 3

- A 50 year old man
- 5-year history of headaches
- 8/10 in intensity, stabbing in the left temple and around the left ear
- Associated with tearing and redness of the left eye, congestion of the left nares, and light and noise sensitivity
- lasted about 2 hours
- triggered almost all of the time by alcoholic beverages with the onset 30-45 minutes later

- Headaches triggered by drinking white or red wine, beer and vodka, but not depending on the amounts of alcohol intake
- Headache improved within 30 minutes after rizatriptan 10mg
- if he took triptans 5 minutes before his drink, he only got headache about once a month
- He had been taking triptans on a daily basis for 3.5 years
- Topirimate for prevention and 100% oxygen for treatment were not effective.

Final Diagnosis of the patient?

Delayed alcohol-induced headache

8.1 Headache attributed to use of or exposure to a substance

8.1.4.2 Delayed alcohol induced headache

A. Any headache fulfilling criterion C

B. Alcohol has been ingested

C. Evidence of causation demonstrated by all of the following:

1. headache has developed within 5-12 hours after ingestion of alcohol
2. headache has resolved within 72 hours of onset
3. headache has at least one of the following three characteristics:
   a) bilateral
   b) pulsating quality
   c) aggravated by physical activity

D. Not better accounted for by another ICHD-3 diagnosis.

Conclusion

- Medication overuse headaches and headaches due to substance exposure must be identified early in order to avoid headache chronification

THANK YOU FOR KIND ATTENTION