MEDICATION OVRUSE HEADACHE LECTURE SUMMARY

- Medication Overuse Headache has a prevalence of about 1% worldwide. Some countries, like Russia are as high as 7%. Although overuse of any pain medication can result in MOH, some drugs carry an increased risk of the disorder; combination analgesics, opioids, butalbital containing medications and triptans are the medications that are most commonly associated with MOH. The most common comorbidities of MOH are depression and anxiety, and up to 50% of patients with MOH show a dependence-type behavior, such as tolerance or loss of control over pain medication use

- Treatment includes patient counseling, initiation of preventive therapy and detoxification from the offending medications. In the countries where monoclonal antibodies to CGRP or its receptor are available, the make it much easier to treat this syndrome.

The ICHD-3 diagnostic criteria for MOH is:
A. Headache occurring on ≥ 15 days/month in a patient with a pre-existing headache disorder
B. Regular overuse for >3 months of ≥1 drugs that can be taken for acute treatment of headache
Still requires ≥ 10 days of use/month for ≥3 months of ergots, triptans, opioids, or combination analgesics but ≥ 15 days of use/month of NSAIDs, aspirin, or acetaminophen
The old provision that the headache must have worsened with the overuse is gone
The old provision that the headache must revert to episodic with detoxification is gone
The old linking of different meds to different patterns of daily headache is gone

The following medications are commonly used for treating migraine:
- **OTC simple analgesics and NSAIDs**
- **Combination analgesics, often includes caffeine**
- **Prescription NSAIDs – diclofenac K for solution (Cambia) is approved for migraine)**
- **APAP or ASA/butalbital/caffeine (Fiorinal®, Fioricet®, Esgic®) Midrin®**
- **Ergots (ergotamine tartrate and DHE)**
- **Opiates**
- **Antiemetics (dopamine antagonists)**
- **5-$HT_{1B/1D}$, 5-HT_{1F} agonists**
- **Gepants (ubrogepant & rimegepant)**

There are many controversies surrounding MOH treatment:
- **ICHD 3 removed worsening from the definition of MOH**
- **Detoxification or not (Danish Headache Center does 2 months of complete detoxification). So does Michel Ferrari in Leiden.**
- **Adding preventive medications or not**

- **When to add preventive medications**
- **A Copenhagen 3-cell trial: withdrawal plus preventive treatment, preventive treatment without withdrawal or withdrawal with optional preventive treatment 2 months after withdrawal – *all showed equal results***

- **Srikiatkhachorn**, from Bangkok has described the pathophysiology of MOH**:**
- Chronic medication exposure interferes the endogenous 5-HT dependent, descending pain control system (decrease in Diffuse Noxious Inhibitory Control or DNIC).
- The altered endogenous control system leads to subsequent changes in brain areas subserving primary headache generation. These include:
  - Upregulation of CGRP neurotransmission in both central and peripheral trigeminal nociceptive pathway
  - Faclitation of trigeminal nociception at the brainstem trigemino-cervical complex
  - Increased cortical hyperexcitability rendering the increased susceptibility for CSD development

Non pharmacologic (biobehavioral treatment should always be used:

- Avoid Headache Triggers
- Eat and exercise regularly & sleep hygiene
- Use headache calendars or apps - *essential*
- Biofeedback training and stress management
- Cognitive therapy and psychotherapy
- Physical techniques (eg. physical therapy, manipulation, acupuncture, ayurveda)
- Consider Adjunctive therapies (Vitamins, Minerals, Supplements, Herbs): Vitamin B-2, Magnesium, Feverfew, Petasites, Melatonin and Coenzyme Q 10

The latest treatment suggestions:

- **Treatment with topiramate, onabotulinumtoxinA or anti-CGRP monoclonal antibodies may reduce headache or migraine attack frequency and acute medication intake without deliberate withdrawal.**
- **However, the data supporting the efficacy of anti-CGRP monoclonal antibodies in this scenario are considerably more robust compared to the study results for topiramate and onabotulinumtoxinA.**
- **The anti-CGRP monoclonal antibodies appear to be particularly effective in converting patients with CM and MO out of MO and back to EM, as well as reducing acute medication use in EM and thus reducing the risk of transformation to CM.**
- **Diener H-C, Dodick D, Evers S et al. Pathophysiology, prevention, and treatment of medication overuse headache. *Lancet Neurol* 2019; 18:891-902.**

SUMMARY

- **Educate the patient re MOH, mechanisms, treatment plan and expectations**
- **Employ Non-Pharmacologic and Behavioral strategies**
- **Identify and address psycho-social comorbidities**

- **Detoxify from all offending medications and agents, including caffeine; (Use Bridge Therapy as needed)**
- **Institute prevention (mAbs to CGRP may be best) and limit acute care medicines**
- **Frequent planned follow-up visits with use of headache calendars or apps is essential**

Alan Rapoport, M.D.