

# O C C I G U I D E

## Challenges of Acute Headache Management

### Headache Management in the Emergency Department

<https://pubmed.ncbi.nlm.nih.gov/29395690/>

Significant heterogeneity exists in ED headache management because of the lack of strong recommendations, physician experience, concern for short-term side effects, institutional culture, and patient request.

**An ideal medication provides rapid sustained pain relief without complications and allows patients to return to normal daily activity.** However, this medication does not exist. Studies show that less than a third of patients treated in the ED experience sustained pain relief. Complications include vascular complications, tardive dyskinesia, gastrointestinal disease (hemorrhage and gastritis), and medication dependence.

## Headache Revisits to the Emergency Department

### A Retrospective Nested Cohort Study of Emergency Department Revisits for Migraine in New York City

<https://headachejournal.onlinelibrary.wiley.com/doi/10.1111/head.13216>

Results: Of 1052 ED visits with an ED discharge diagnosis of migraine during the first 6 months of 2015, 277 (26.3%) had a headache revisit within 6 months of their initial migraine visit and 131 (12.5%) had two or more revisits at the same hospital. Of the **revisits for headache, 9% occur within 72 hours** and 46% occur within 90 days of the initial migraine visit.

## Use of Opioids to Treat Headache Leads to Poor Outcomes

### Opioid Free Treatment Algorithm for ED Headache Management: Effect on Revisit Rate

<https://pubmed.ncbi.nlm.nih.gov/31104781/>

Conclusions: **Opioid use in the ED** to treat patients with headaches or migraines may have several negative ramifications including **increased risk of revisit, hospital admission, and increased ED length of stay.**

### Real-world Assessment of Concomitant Opioid Utilization and Associated Trends in Patients with Migraine

<https://pubmed.ncbi.nlm.nih.gov/32109019/>

**Opioid use was associated with higher total costs** compared with patients who were not prescribed opioids: \$82,007 for 200 morphine milligram equivalents (MME)/day or more versus \$19,792 for no opioid in patients with migraine.

### Multicenter Prevalence of Opioid Medication use as Abortive Therapy in the ED Treatment of Migraine Headaches

<https://pubmed.ncbi.nlm.nih.gov/28645559/>

**Opioids were ordered in 35.8% of these visits.** By facility, opioids were ordered in 12.3% of academic medical center visits, 40.9% of urban ED visits, and 68.6% of community ED visits. This ranged from 6.9% of first-line therapies in the academic center to 69.9% of rescue therapies in the community ED. Of those who received opioids, 36.0% versus 25.1% required rescue medications... **There were no significant benefits in overall throughput time, however, opioid visits required more rescue medications, increased length of stay, and resulted in more repeat visits.**

### Impact of Emergency Department Opioid use on Future Health Resource Utilization Among Patients with Migraine

<https://pubmed.ncbi.nlm.nih.gov/33599982/>

Conclusion: **Opioid use among patients with migraine presenting to the ED is associated with increased future HRU (Healthcare Resource Utilization),** which highlights the need for optimizing migraine management in emergency settings.

## Frequent Medication Use Can Result in Medication Overuse Headache

### Risk of Medication Overuse Headache Across Classes of Treatments for Acute Migraine

<https://pubmed.ncbi.nlm.nih.gov/27882516/>

A total of 29 studies informed the relative risk between treatment classes, all of which reported country-specific data... Our study suggests that in patients receiving acute migraine treatment, **analgesics and opioids are associated with a higher risk of developing MOH compared with other treatments.**

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## Costs of Ineffective Management of Headache

### Ineffective Acute Treatment of Episodic Migraine is Associated with New-Onset Chronic Migraine

<https://pubmed.ncbi.nlm.nih.gov/25609757/>

Findings suggest that among persons with episodic migraine, **those with ineffective acute treatment are at increased risk for chronic migraine onset** while those with more effective acute treatment have better outcomes over 1 year of follow up.

### Acute Migraine Headache: Treatment Strategies

<https://www.aafp.org/afp/2018/0215/p243.html>

Estimated annual U.S. direct costs for migraine are more than \$17 billion; the costs of **lost productivity and reduced quality of life** are significantly higher. More than one-half of migraines are treated in primary care, and they are the fourth most common cause of emergency department visits.

### What is the Economic Impact of Migraine Headache in the US?

<https://www.medscape.com/answers/1142556-170219/what-is-the-economic-impact-of-migraine-headache-in-the-us>

The economic cost resulting from migraine-related loss of productive time in the US workforce is more than \$13 billion per year, most of which is in the form of **reduced work productivity**.

## Headache Patients

### National headache Foundation Survey Shows Majority of People with Migraine are Unable to Control Disease and Dissatisfied with Current Preventive Treatment Options

<https://headaches.org/2021/05/11/national-headache-foundation-survey-shows-majority-of-people-with-migraine-are-unable-to-control-disease-and-dissatisfied-with-current-preventive-treatment-options/>

**57% of patients say they are constantly juggling migraine treatments trying to find the right one.**

### What do Patients with Migraine want from Acute Migraine Treatment?

<https://pubmed.ncbi.nlm.nih.gov/11966858/>

**Rapid onset of complete pain relief, in particular, emerges as a top priority.** Relief of associated symptoms, restoration of function, lack of adverse events and low recurrence are also attractive features... Satisfaction with current migraine therapy, is very low with only 29% of migraines sufferers very satisfied with their usual acute treatment.

## Perspectives from People with Migraine Disease

<https://headaches.org/2020/06/16/perspectives-from-people-with-migraine-disease/>

**Due to side effects such as brain fog, fatigue and sleepiness, on average almost half of the responders between the ages of 18-59 feel anxious (46%) upon taking treatment.** In addition, in that same age group, 47% report that treatment side effects have interfered with their ability to go to school or work.

## Occipital Nerve Block to Treat Headache

### Greater Occipital Nerve Block for the Treatment of Chronic Migraine Headaches: A Systematic Review and Meta-Analysis

<https://pubmed.ncbi.nlm.nih.gov/31568309/> (Plastic and Reconstructive Surgery)

**Results:** Studies were analyzed that reported mean number of headache days per month in both intervention and control groups. A total of 417 patients were studied, with a pooled mean difference of -3.6 headache days (95 percent CI, -1.39 to -5.81 days). **This demonstrates that greater occipital nerve block intervention significantly reduced the frequency of migraine headaches compared with controls** ( $p < 0.00001$ ). Pooled mean difference in pain scores of -2.2 (95 percent CI, -1.56 to -2.84) also demonstrated a significant decrease in headache severity compared with controls ( $p < 0.0121$ ).

### The efficacy of Greater Occipital Nerve Block for the Treatment of Migraine: A Systematic Review and Meta-analysis

<https://pubmed.ncbi.nlm.nih.gov/29421172/> (Clinical Neurology and Neurosurgery)

**Conclusion: GON block intervention is able to significantly reduce pain intensity and analgesic medication consumption** in migraine patients.

### Evaluation of Occipital Nerve Block for Acute Pain Relief of Migraines

<https://pubmed.ncbi.nlm.nih.gov/31595507/> (Journal of Clinical Pharmacology)

A total of 190 patients met the inclusion criteria, with 63% rating their pain to be 6-8 of 10 prior to an occipital nerve block. **After receiving an occipital nerve block, 27% of patients reported significant or immediate relief, and 42% experienced reduced pain scores of 0-2.**

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## The Efficacy of Greater Occipital Nerve Blockade in Chronic Migraine: A Placebo-Controlled Study

<https://pubmed.ncbi.nlm.nih.gov/27910088/> (Acta Neurologica Scandinavica)

Conclusion: Our results suggest that **GON blockade with bupivacaine was superior to placebo, has long-lasting effect than placebo, and was found to be effective for the treatment of CM (Chronic Migraine).**

## Influence of Greater Occipital Nerve Blocks on Pain Severity in Migraine Patients: A Systematic Review and Meta-analysis

<https://pubmed.ncbi.nlm.nih.gov/28844531/> (American Journal of Emergency Medicine)

**Six RCTs (randomized control trials)** were included in the meta-analysis. Overall, compared with control intervention in migraine patients, GON block intervention was found to significantly **reduce pain score** (Std. mean difference=-0.51; 95% CI=-0.81 to -0.21; P=0.0008), **number of headache days** (Std. mean difference=-0.68; 95% CI=-1.02 to -0.35; P<0.0001), and **medication consumption** (Std. mean difference=-0.35; 95% CI=-0.67 to -0.02; P=0.04), but demonstrated no influence on duration of headache per four weeks (Std. mean difference=-0.07; 95% CI=-0.41 to 0.27; P=0.70).

## Greater Occipital Nerve Block for Acute Treatment of Migraine Headache: A Large Retrospective Cohort Study

<https://pubmed.ncbi.nlm.nih.gov/29535237/> (Journal of the American Board of Family Medicine)

A total of 562 patients met inclusion criteria; 423 were women (75%). Mean age was 58.6 ± 16.7 years. Of these 562, 459 patients (82%) rated their response to GON block as moderate or significant. **Greater occipital block seems to be an effective option for acute management of migraine headache**, with promising reductions in pain scores.

## The Effect of Greater Occipital Nerve Blockade on the Quality of Life, Disability and Comorbid Depression, Anxiety, and Sleep Disturbance in Patients with Chronic Migraine

<https://pubmed.ncbi.nlm.nih.gov/32056056/> (Neurological Sciences)

Results: MQoLQ scores, which measured the daily quality of life, were 38 [3-66] before GON treatment, and 64 [38-88] in the first month and 72 [40-86] in the third month after treatment. In addition, this increase was statistically significant (p < 0.001). Furthermore, we found a **statistically significant decrease in disability, depression, anxiety, and sleep disturbance** scores after treatment (p < 0.05).

## Occipital Nerve Blocks in the Treatment of Headache: Safety and Efficacy

<https://pubmed.ncbi.nlm.nih.gov/25440865/> (Journal of Emergency Medicine)

Conclusion: Advantages to utilizing ONB's in the management of headaches in primary and emergency care settings include ease with which the procedure may be performed, **relative safety, potential to eliminate the need for daily prophylactic therapy, reduced utilization of opioids**, and low cost of treatment. **Treatment is localized, often with no systematic effects, and the onset of pain relief is usually within minutes, providing relief that can last for weeks...** The fact that ONBs provide a localized treatment option for pain is an important consideration that could minimize adverse effects and decrease the amount of disability caused by the treatment itself.