

PHB



Dr. Arvind Kumar Gupta
(M.Pharm, PDCR, PGDMM & Ph.D)
GATE 2003 Qualified with 97.2 percentile
Dr. S. N. Dev College of Pharmacy
Shamli (U.P.)

OFFICE: BUILDING No. 3/314, OFFICE-1, GAUSHALA ROAD, SHAMLI DISTRICT SHAMLI (U.P.) – 247776

Mobile: +91-9719638415

Email: arindrkgit@gmail.com

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Chapter– 5 Central Nervous System

Topic: MIGRAINE DISEASE

5.1

Introduction

Migraine is a neurological disorder characterized by recurrent episodes of severe headaches, often accompanied by other symptoms such as nausea, vomiting, and sensitivity to light and sound.



5.2

Etiopathogenesis

A migraine headache is caused by abnormal brain activity. This activity can be triggered by many things. But the exact chain of events remains unclear. Most medical experts believe the attack begins in the brain and involves nerve pathways and chemicals. The changes affect blood flow in the brain and surrounding tissues.

5.3

Types

1. **Migraine without Aura (Common Migraine):** The most common type of migraine, characterized by moderate to severe headaches without preceding aura or warning signs.
2. **Migraine with Aura (Classic Migraine):** Involves additional neurological symptoms known as aura, which occur before or during the headache phase. Aura symptoms may include visual disturbances (e.g., flashing lights, blind spots), sensory changes (e.g., tingling or numbness), and language or speech difficulties.

5.4

Symptoms

The symptoms commonly includes:

- The main symptom of a migraine is usually an intense headache on one side of the head. In some cases, the pain can occur on both sides of your head and may affect your face or neck.
- The pain is usually a moderate or severe throbbing sensation.
- Nausea
- Vomiting
- Increased sensitivity to light and sound – which is why many people with a migraine want to rest in a quiet, dark room.
- Dizziness (light headedness)

5.5

Diagnosis

Diagnostic procedures may include:

- The International Classification of Headache Disorders (ICHD) criteria may be used to establish a diagnosis of migraine.
- Healthcare providers may order imaging studies such as MRI or CT scans to rule out other causes of headaches, particularly if symptoms are atypical or there are concerning features.

1. Acute Treatment:

- **Analgesics: e.g.** Acetaminophen, Aspirin, Ibuprofen, or Naproxen sodium; can be effective for mild to moderate migraines.
- **Triptans: e.g.** Sumatriptan, and Eletriptan; are serotonin receptor agonists that help relieve migraine pain and associated symptoms by constricting blood vessels in the brain.
- **Ergotamine derivatives: e.g.** Ergotamine and Dihydroergotamine (DHE); are older medications that can be effective for treating migraines, particularly when other medications are not effective.
- **Antiemetics: e.g.** Metoclopramide or prochlorperazine; may be prescribed to help control nausea and vomiting associated with migraines and improve medication absorption.
- **NSAIDs:** can help relieve migraine pain and inflammation when taken at the onset of symptoms.

2. Preventive Treatment:

- **Beta-blockers: e.g.** Propranolol, Metoprolol and other beta-blockers; to reduce the frequency and severity of migraines.
- **Anticonvulsants: e.g.** Topiramate, valproate, or gabapentin; may be used as preventive therapy for migraines, particularly in patients who experience frequent attacks or have not responded to other treatments.
- **Tricyclic antidepressants: e.g.** Amitriptyline and Nortriptyline; to prevent migraines, especially in patients with comorbid depression or insomnia.
- **Calcium channel blockers: e.g.** Verapamil; may be prescribed for migraine prevention, particularly in patients with coexisting hypertension or cluster headaches.
- **Botulinum toxin injections: e.g.** OnabotulinumtoxinA (Botox), injections may be recommended for chronic migraine prevention in patients who experience frequent migraines.

3. Rescue Medications:

- **Steroids:** Prednisone or Dexamethasone; may be used as rescue medications to break a prolonged migraine attack or prevent recurrence.

- **Dihydroergotamine (DHE) nasal spray:** nasal spray can be used as a rescue medication for severe migraines that do not respond to other treatments.
- **Non-opioid analgesics: e.g.** Tramadol or Codeine for severe migraines, although these medications are generally avoided due to the risk of dependence and medication overuse headaches.

5.7

Non - Pharmacological managements

Non-pharmacological interventions for migraine may include:

- **Lifestyle Modifications:** Avoiding triggers such as certain foods (e.g., aged cheese, processed meats), alcohol, caffeine, irregular sleep patterns, stress, and hormonal fluctuations can help reduce migraine frequency and severity.
- **Behavioral Therapies:** Cognitive-behavioral therapy (CBT), relaxation techniques, biofeedback, and stress management strategies may be helpful in managing migraine symptoms and improving coping skills.

5.8

Complications

Complications of migraine may include:

- Chronic migraine (headaches on 15 or more days per month for at least three months) can significantly impact quality of life and may require specialized treatment approaches.
- Medication overuse headache also known as rebound headache, occurs as a result of overuse of acute headache medications, leading to worsening headache symptoms and dependency on medications.
- A severe and prolonged migraine attack lasting more than 72 hours, which may require hospitalization for intravenous medication administration and supportive care.
- Migraine headaches may worsen or improve during pregnancy, and some migraine medications may pose risks to the fetus. Close monitoring and individualized treatment approaches are necessary for pregnant women with migraine.

Practice Questions

MULTIPLE CHOICE QUESTIONS

1. Migraine headaches are typically characterized by:
 - A) Gradual onset of throbbing pain
 - B) Continuous dull ache on one side of the head
 - C) Sudden onset of stabbing pain
 - D) Intense pain with visual disturbances
2. Which of the following is a common prodromal symptom of migraine?
 - A) Nausea and vomiting
 - B) Aura, such as visual disturbances or sensory changes
 - C) Photophobia (sensitivity to light)
 - D) Phonophobia (sensitivity to sound)
3. Migraine without aura is also known as:
 - A) Classical migraine
 - B) Basilar migraine
 - C) Hemiplegic migraine
 - D) Common migraine
4. Triptans are a class of medications commonly used to treat migraine attacks by:
 - A) Preventing the release of serotonin
 - B) Constricting blood vessels in the brain
 - C) Blocking the action of histamine
 - D) Inhibiting the production of prostaglandins
5. Which of the following triggers is NOT commonly associated with migraine attacks?
 - A) Stress
 - B) Hormonal changes
 - C) High caffeine intake
 - D) Low blood sugar levels
6. Chronic migraine is defined as:
 - A) Migraine attacks occurring less than 15 days per month
 - B) Migraine attacks occurring more than 15 days per month

- C) Migraine attacks lasting less than 4 hours
 - D) Migraine attacks accompanied by aura
7. The first-line pharmacological treatment for acute migraine attacks in children is often: A) Acetaminophen (paracetamol)
- B) Ibuprofen
 - C) Sumatriptan
 - D) Propranolol
8. Migraine with aura is characterized by:
- A) Auroras occurring after the onset of headache
 - B) Auroras lasting longer than 30 minutes
 - C) Auroras accompanied by motor weakness
 - D) Auroras without any associated headache
9. Non-pharmacological approaches for migraine management may include:
- A) Avoiding trigger foods and beverages
 - B) Maintaining a consistent sleep schedule
 - C) Practicing relaxation techniques such as deep breathing
 - D) All of the above
10. Status migrainosus refers to:
- A) A migraine attack lasting longer than 72 hours
 - B) Recurrent migraines with prolonged aura
 - C) Migraine attacks triggered by certain smells
 - D) Migraines occurring exclusively during menstruation

FILL IN THE BLANKS

1. A migraine is a type of _____ headache. (**Primary**)
2. Migraines are often characterized by _____, sensitivity to light and sound, and nausea. (**Throbbing pain**)
3. The aura phase of a migraine can include visual disturbances such as _____. (**Flashes of light or blind spots**)
4. Triptans are a class of medications used to treat _____. (**Migraines**)
5. Migraine triggers can include _____, stress, certain foods, and hormonal changes. (**Weather changes**)

SHORT ANSWER TYPE QUESTIONS

1. Define migraine.
2. What are the common triggers for migraines?
3. Describe the typical symptoms experienced during a migraine attack.
4. How are migraines diagnosed?
5. What is the role of triptans in the treatment of migraines?

LONG ANSWER TYPE QUESTIONS

1. Discuss the pathophysiology of migraines.
2. Outline the various triggers and risk factors associated with migraines.
3. Describe the diagnostic approach of migraines.
4. Discuss the various treatment options available for migraines.
5. What lifestyle modifications and self-management strategies with migraines?

MCQ Answer

1.	D	3.	D	5.	D	7.	B	9.	D
2.	B	4.	B	6.	B	8.	A	10.	A
