

# Drug therapy of Migraine

# MIGRAINE

- Migraine is a familial disorder characterized by recurrent attacks of headache widely variable in intensity, frequency and duration.
- Attacks are commonly unilateral and are usually associated with anorexia, nausea and vomiting



# MIGRAINE PATHOPHYSIOLOGY

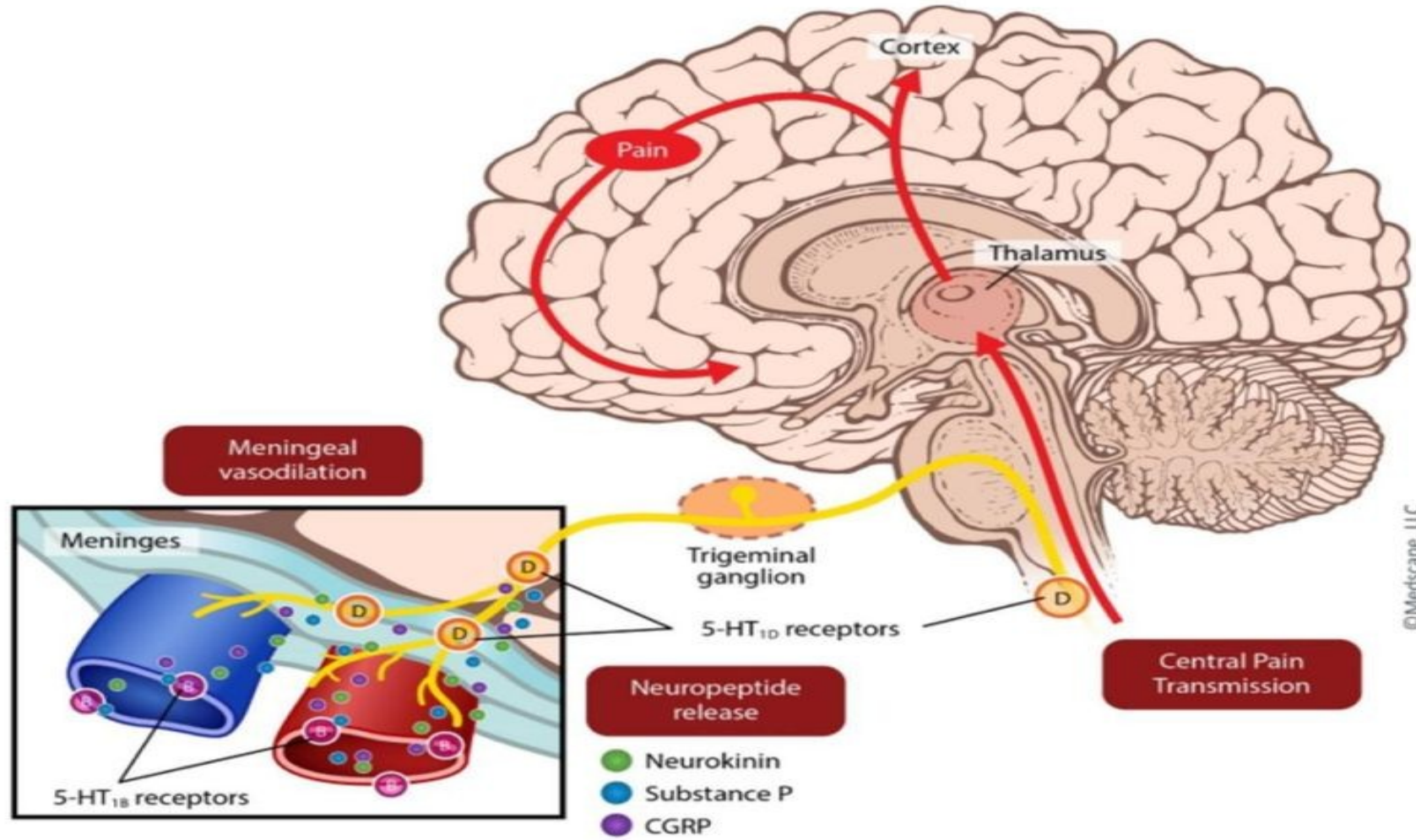
## **VASCULAR THEORY**

- Intracerebral blood vessel vasoconstriction – aura
- Intracranial/Extracranial blood vessel vasodilation – headache

## **SEROTONIN THEORY**

- Decreased serotonin levels linked to migraine
- Specific serotonin receptors found in blood vessels of brain

# Pathophysiology of Migraine



# CLASSIFICATION OF MIGRAINE

<b>MILD</b>	<b>MODERATE</b>	<b>SEVERE</b>
<b>Less than one attack a month</b>	One or more attacks per month	2-3 attacks or more every month
<b>Lasting upto 8 hours</b>	6-24 hours	12-48 hours
<b>Throbbing but tolerable headache</b>	Intense throbbing headache with nausea and vomiting	Intense throbbing headache with nausea, vomiting, vertigo and other symptoms

# DRUG THERAPY OF MIGRAINE

- MILD : simple analgesics / NSAIDS or their combination ( $\pm$ antiemetic)
- MODERATE : NSAIDS combinations/ ergot alkaloids/ sumatriptan (+antiemetic)
- SEVERE : Ergot alkaloids/ sumatriptan/ rizatriptan (+antiemetic)

+Prophylaxis

Propranolol/ other  $\beta$  blockers

Amitriptyline / other tricyclic antidepressants

Flunarazine/ other calcium channel blockers

Valproate/ topiramate

# ERGOTAMINE

- Most effective ergot alkaloid for migraine, given early in attack
- Act by constricting dilated cranial vessel
- Reduce neurogenic inflammation and leakage of plasma in durameter
- Oral or sublingual route is preferred
- Erratic oral absorption and bioavailability
- **Adverse effects** : nausea, muscle cramps, coronary spasms, rebound headache

# TRIPTANS ( selective 5HT 1b/1d Agonists)

- **SUMATRIPTAN**: selective 5HT 1B/1D receptor agonist
- Administered at the onset of attack of migraine
- Constriction of dilated extra cranial cerebral blood vessels in carotid artery
- Inhibit inflammatory neuropeptide release around affected blood vessels
- **Pharmacokinetics** : s.c. injection- rapid and complete absorption
- Oral bioavailability -15%
- Only triptan available for nasal and parenteral administration



- Metabolized by MAO-A isoenzymes
- T<sub>1/2</sub>- 2 hours
- **Side effects** :tightness in head and chest ,feeling of heat, paresthesia in limbs , dizziness
- Bradycardia, coronary vasospasm and risk of MI are serious but infrequent adverse effects
- **CI** : IHD, hypertension, hepatic or renal impairment and pregnancy

# Prophylaxis of migraine

Drugs	Dose (mg/dl)
1. <b>Adrenergic blockers</b> ◆ Propranolol	40-320
2. <b>Calcium Channel Blockers</b> ◆ Flunarizine ◆ Verapamil	10-20 120-480
3. <b>TCAs</b> ◆ Amitriptyline	10-20 <b>Betablockers</b>
4. <b>SSRIs</b> ◆ Fluoxetine	20-60

<b>Drugs</b>	<b>Dose (mg/dl)</b>
5. <b>Anti-convulsant</b> ◆ Sodium valproate	600-1200
6. <b>Anti-histaminic</b> ◆ Cyproheptadine	4-8

THANK YOU