HEADACHE

DR. S. HAGHIGHI

NEUROLOGIST

TUMS, ZIAEIAN HOSPITAL

AMONG THE MOST COMMON REASONS PATIENTS SEEK MEDICAL ATTENTION

HISTORY &PH/EX

- CAREFUL HISTORY AND PHYSICAL EXAMINATION --→ THE MOST IMPORTANT PART OF THE ASSESSMENT OF THE HEADACHE PATIENT

HISTORY IN HEADACHE

- ✓ AGE AT ONSET
- ✓ FREQUENCY, INTENSITY, AND DURATION OF ATTACK
- ✓ TIME AND MODE OF ONSET
- ✓ QUALITY, SITE, AND RADIATION OF PAIN
- ✓ ASSOCIATED SYMPTOMS INCLUDING AUTONOMIC FEATURES
- ✓ EFFECT OF ACTIVITY ON PAIN
- ✓ ANY RECENT CHANGE IN VISION
- ✓ A THROUGH PMHX

HISTORY IN DETAIL

- **CHARACTERISTICS OF PAIN:**
- **PULSATING OR THROBBING** →FREQUENTLY RELATED TO MIGRAINE, BUT MAY ALSO OCCUR IN PATIENTS WITH TENSION TYPE HEADACHE.
- **TIGHTNESS OR PRESSURE** →COMMONLY IN TENSION-TYPE HEADACHE.
- THE PAIN PRODUCED BY INTRACRANIAL MASS LESIONS IS TYPICALLY **DULL AND STEADY.**
- **SHARP, LANCINATING** (STABBING) →NEURITIC CAUSE SUCH AS TRIGEMINAL NEURALGIA. **ICEPICK-LIKE** PAIN

HISTORY IN DETAIL

- **LOCATION OF THE PAIN:**

- ✓ **UNILATERAL** → SHIFTING IN MIGRAINE ,STRICTLY UNILATERAL IN CLUSTER

- ✓ **OCULAR** →PRIMARY OPHTHALMIC DISORDER SUCH AS ACUTE IRITIS OR GLAUCOMA, OPTIC (II) NERVE DISEASE (EG, OPTIC NEURITIS), OR RETROORBITAL INFLAMMATION (EG, TOLOSA-HUNT SYNDROME)· ALSO COMMON IN MIGRAINE OR CLUSTER HEADACHE·

- ✓ **PARANASAL**→ACUTE SINUS INFECTION OR OUTLET OBSTRUCTION·

- ✓ **FOCAL**→SOL , BUT EVEN IN SUCH CASES BECOME BIOCCIPITAL AND BIFRONTAL PAIN WHEN THE INTRACRANIAL PRESSURE BECOMES ELEVATED·

HISTORY IN DETAIL

- **LOCATION OF THE PAIN :**

- ✓ **BAND LIKE** OR **OCCIPITAL**→COMMONLY IN TENSION-TYPE HEADACHE,CAN BE DUE TO MENINGEAL IRRITATION FROM INFECTION OR HEMORRHAGE AND WITH DISORDERS OF THE STRUCTURES OF THE UPPER CERVICAL SPINE

- ✓ PAIN WITHIN THE **FIRST (V1) DIVISION OF THE TRIGEMINAL NERVE**, CHARACTERISTICALLY BURNING IN QUALITY, IS A COMMON FEATURE OF POSTHERPETIC NEURALGIA.

- ✓ LANCINATING PAIN LOCALIZED TO THE **SECOND (V2)** OR **THIRD (V3) DIVISION OF THE TRIGEMINAL (V) NERVE** SUGGESTS TRIGEMINAL NEURALGIA

- ✓ THE **PHARYNX** AND **EXTERNAL AUDITORY MEATUS** →GLOSSOPHARYNGEAL NEURALGIA

HISTORY IN DETAIL

- **ASSOCIATED FEATURES :**

✓ **RECENT WEIGHT LOSS** MAY ACCOMPANY CANCER, GIANT CELL ARTERITIS, OR DEPRESSION.

✓ **FEVER** OR **CHILLS** MAY INDICATE SYSTEMIC INFECTION OR MENINGITIS.

✓ **DYSPNEA** OR OTHER SYMPTOMS OF HEART DZ→SUBACUTE INFECTIVE ENDOCARDITIS AND RESULTANT BRAIN ABSCESS.

✓ **VISUAL DISTURBANCES** →OCULAR DISORDER (EG, GLAUCOMA),MIGRAINE, OR AN INTRACRANIAL PROCESS OR OPTIC NEURITIS

HISTORY IN DETAIL

- **ASSOCIATED FEATURES :**

✓ **NAUSEA** AND **VOMITING** ARE COMMON IN MIGRAINE OR IN SOL

✓ **PHOTOPHOBIA** MAY BE PROMINENT IN MIGRAINE,ACUTE MENINGITIS OR SAH

✓ **MYALGIAS** OFTEN ACCOMPANY TENSION-TYPE HEADACHE, SYSTEMIC VIRAL INFECTIONS, AND GIANT CELL ARTERITIS.

✓ **IPSILATERAL AUTONOMIC FEATURES INCLUDING RHINORRHEA** AND **LACRIMATION→TAC**

✓ **TRANSIENT LOSS OF CONSCIOUSNESS** MAY BE SEEN IN BOTH MIGRAINE (BASILAR MIGRAINE) AND GLOSSOPHARYNGEAL NEURALGIA (DUE TO CARDIAC SYNCOPE

PH/EX IN HEADACHE

- ✓ THE EXAMINATION OF AN ADULT WITH HEADACHE COMPLAINTS SHOULD COVER THE FOLLOWING AREAS:
- ✓ OBTAIN BLOOD PRESSURE AND PULSE
- ✓ LISTEN FOR BRUIT AT NECK, EYES, AND HEAD FOR CLINICAL SIGNS OF ARTERIOVENOUS MALFORMATION
- ✓ PALPATE THE HEAD, NECK, AND SHOULDER REGIONS
- ✓ EVALUATE THE OPTIC DISC
- ✓ CHECK TEMPORAL AND NECK ARTERIES
- ✓ EXAMINE THE SPINE AND NECK MUSCLES

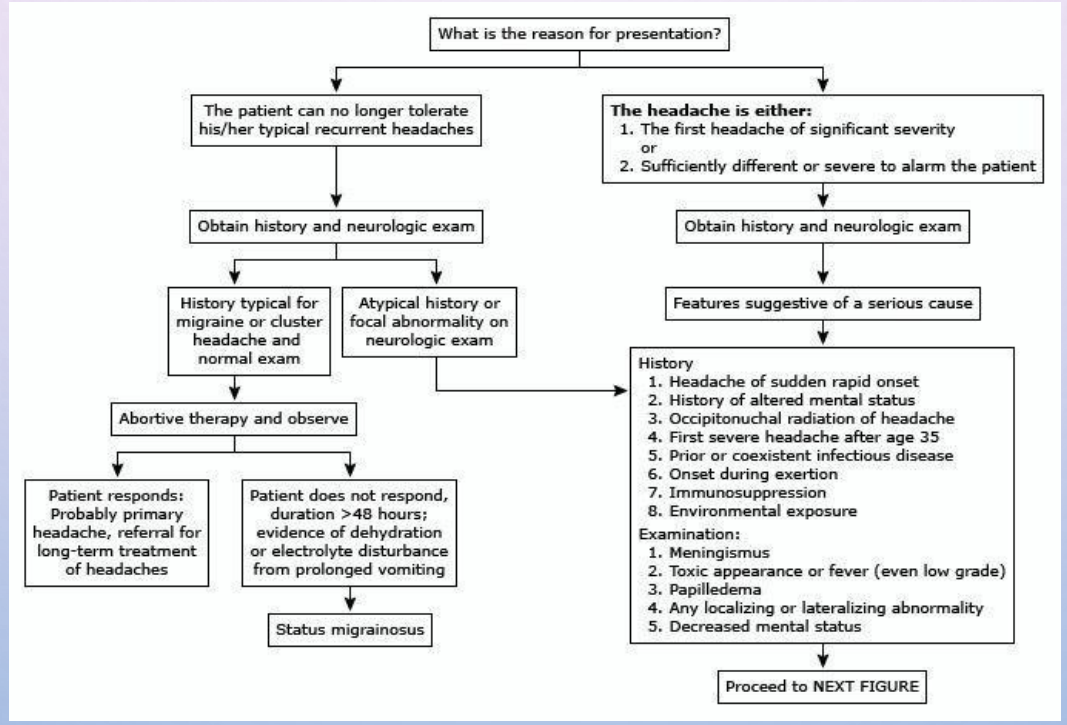
HEADACHE

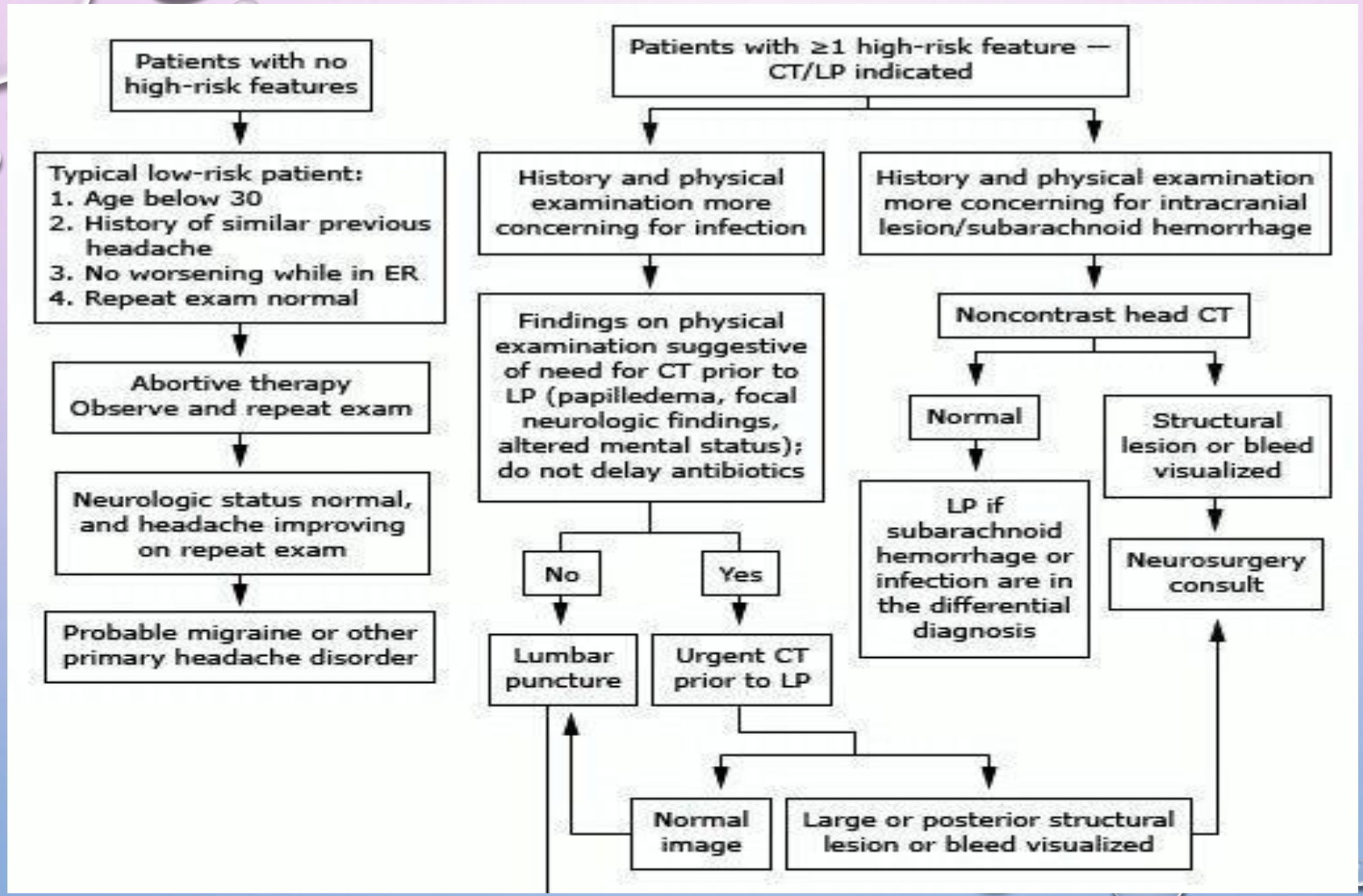
- ACUTE→R/O THE CLINICALLY IMPORTANT CONDITIONS
- SUBACUTE→ PERSIST OR RECUR OVER WEEKS TO MONTHS.
- CHRONIC→USUALLY HAVE A BENIGN CAUSE

ACUTE HEADACHE

- EVALUATE HEADACHES THAT ARE NEW IN ONSET OR CLEARLY DIFFERENT FROM THE PAST→ COMMONLY A SYMPTOM OF SERIOUS ILLNESS AND DEMAND PROMPT EVALUATION.

HEADACHE EVALUATION IN ED




Patients with no high-risk features
Typical low-risk patient:
1. Age below 30
2. History of similar previous headache
3. No worsening while in ER
4. Repeat exam normal
Abortive therapy
Observe and repeat exam
Neurologic status normal, and headache improving on repeat exam
Probable migraine or other primary headache disorder
Patients with ≥1 high-risk feature — CT/LP indicated
History and physical examination more concerning for infection
Findings on physical examination suggestive of need for CT prior to LP (papilledema, focal neurologic findings, altered mental status); do not delay antibiotics
No
Yes
Lumbar puncture
Urgent CT prior to LP
Normal image
Large or posterior structural lesion or bleed visualized
History and physical examination more concerning for intracranial lesion/subarachnoid hemorrhage
Noncontrast head CT
Normal
LP if subarachnoid hemorrhage or infection are in the differential diagnosis
Structural lesion or bleed visualized
Neurosurgery consult

DANGER SIGNS

- SNOOP
- SYSTEMIC SYMPTOMS
- NEUROLOGIC SYMPTOMS
- ONSET IS NEW,>50 OR SUDDEN
- OTHER ASSOCIATED :TRAUMA ,DRUGS OR TOXIC
- PREVIOUS HA

SUBACUTE HEADACHE:

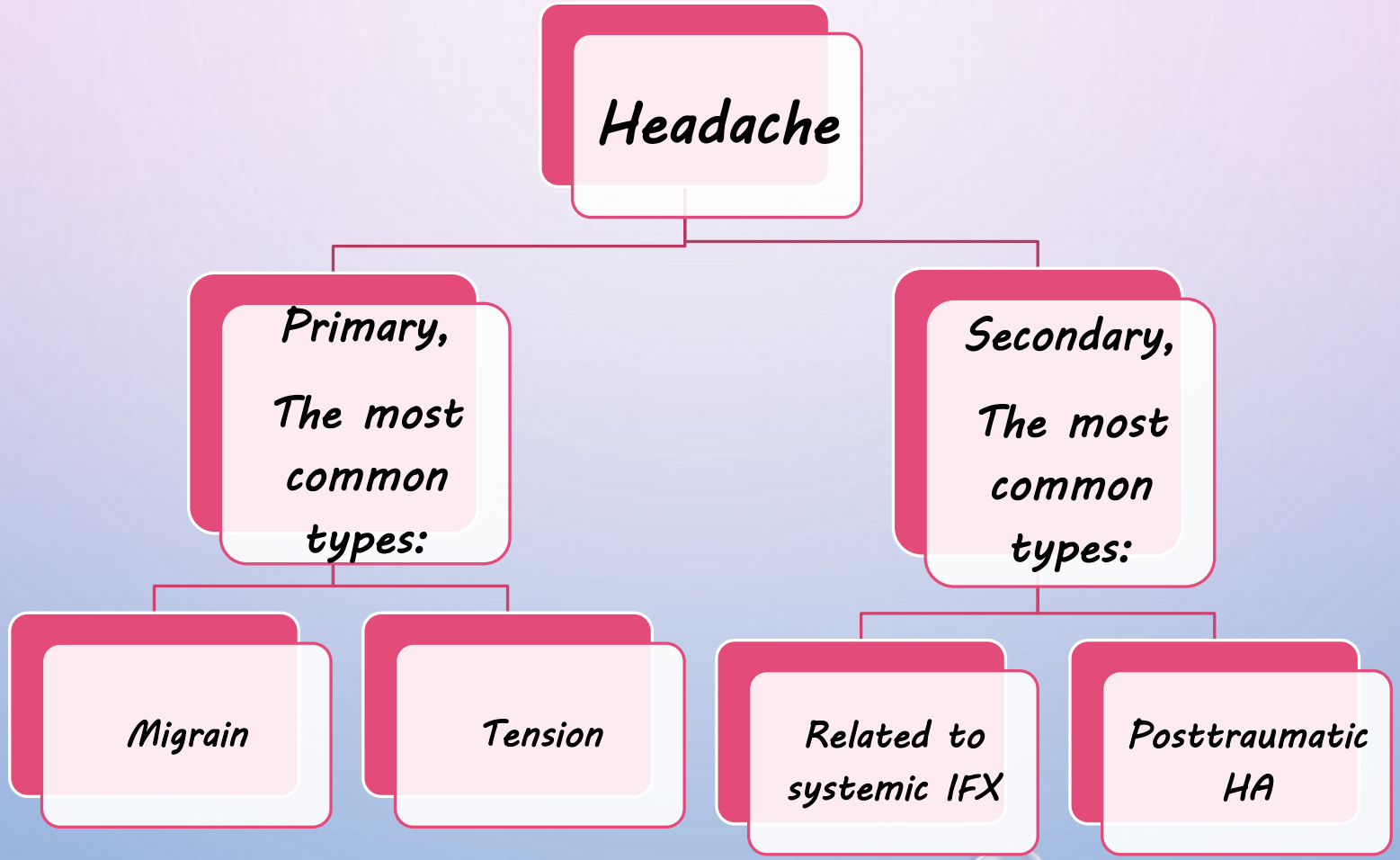
- **SUBACUTE→ PERSIST OR RECUR OVER WEEKS TO MONTHS.**
- ✓ MAY BE SERIOUS UNDERLYING PROBLEMS, ESPECIALLY WHEN THE PAIN IS PROGRESSIVE OR IN ELDERLY PATIENTS.

- ✓ ASKED ABOUT:
- RECENT HEAD TRAUMA (SUBDURAL HEMATOMA OR POSTCONCUSSIVE SYNDROME)
- MALAISE,FEVER, OR NECK STIFFNESS (SUBACUTE MENINGITIS)
- FOCAL NEUROLOGIC ABNORMALITIES OR WEIGHT LOSS (PRIMARY OR METASTATIC BRAIN TUMOR)
- VISUAL CHANGES (GIANT CELL ARTERITIS, IDIOPATHIC INTRACRANIAL HYPERTENSION)
- MEDICATIONS PREDISPOSING TO HEADACHE (NITRATES)

CHRONIC HEADACHE & FACIAL PAIN

- HEADACHES THAT HAVE RECURRED OVER YEARS (EG, MIGRAINE OR TENSION-TYPE HEADACHES)
- USUALLY HAVE A BENIGN CAUSE
- ALTHOUGH EACH ACUTE ATTACK MAY BE PROFOUNDLY DISABLING

CLASSIFICATION ACCORDING TO ICHD3:



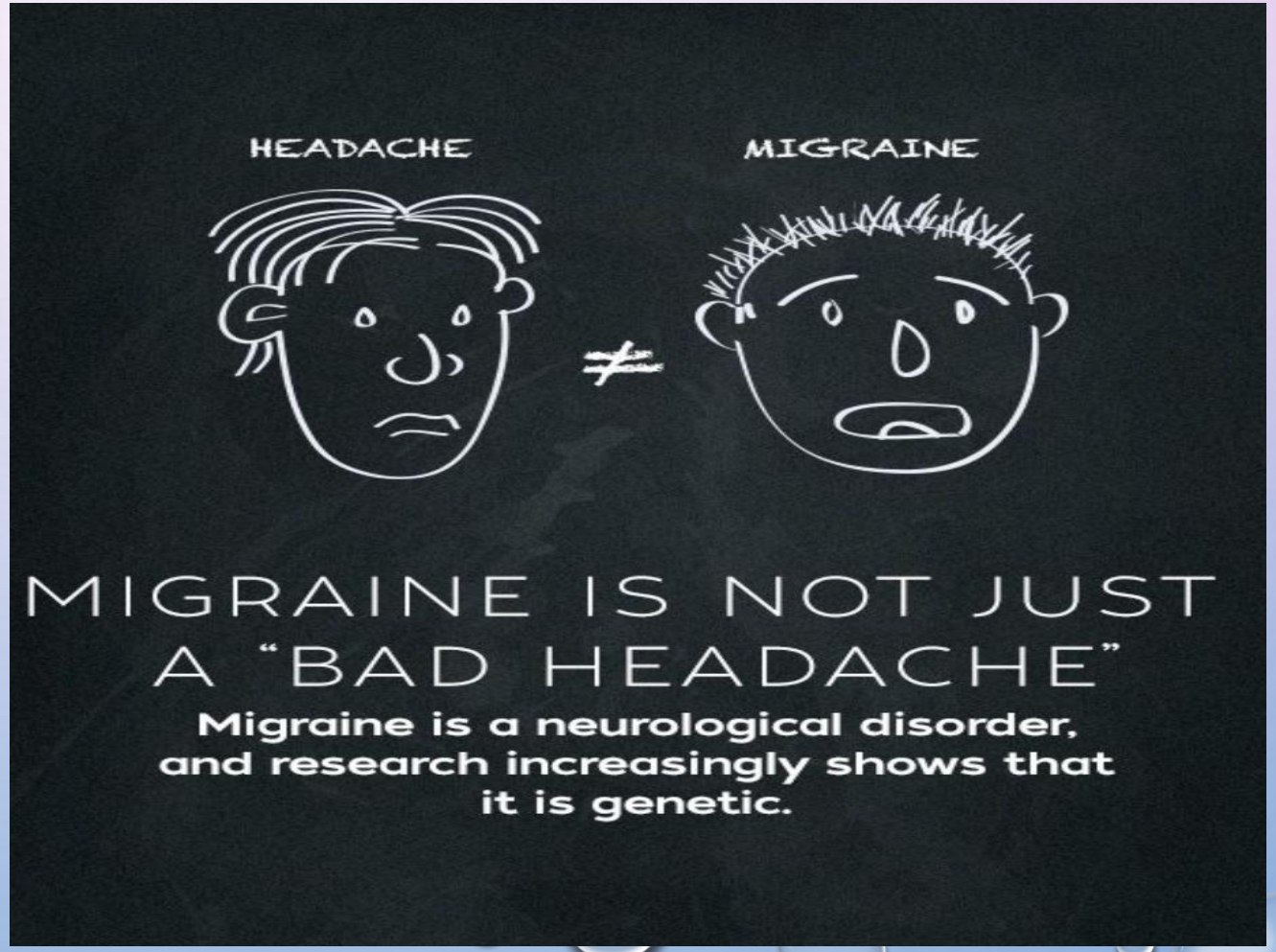
- PRIMARY HEADACHES ARE THOSE IN WHICH HEADACHE AND ITS ASSOCIATED FEATURES ARE THE DISORDER IN ITSELF
- THE MOST COMMON TYPES: MIGRAIN,TENSION

- SECONDARY HEADACHES ARE THOSE CAUSED BY EXOGENOUS DISORDERS.

COMMON PRIMARY HEADACHES; MIGRAINE

- MIGRAINE WITH AURA
- MIGRAINE WITHOUT AURA
- MIGRAINE WITH AND WITHOUT AURA

MIGRAINE IS NOT JUST A HEADACHE



COMMON PRIMARY HEADACHES:

- MIGRAINE HEADACHE:

- BENIGN AND RECURRING SYNDROME OF HEADACHE(USUALLY SHIFTING UNILATERAL AND OFTEN PULSETILE) ASSOCIATED WITH CERTAIN FEATURES SUCH AS:
  - SENSITIVITY TO LIGHT
  - SENSITIVITY TO SOUND
  - GETTING WORSE BY MOVEMENT
  - NAUSEA AND VOMITING

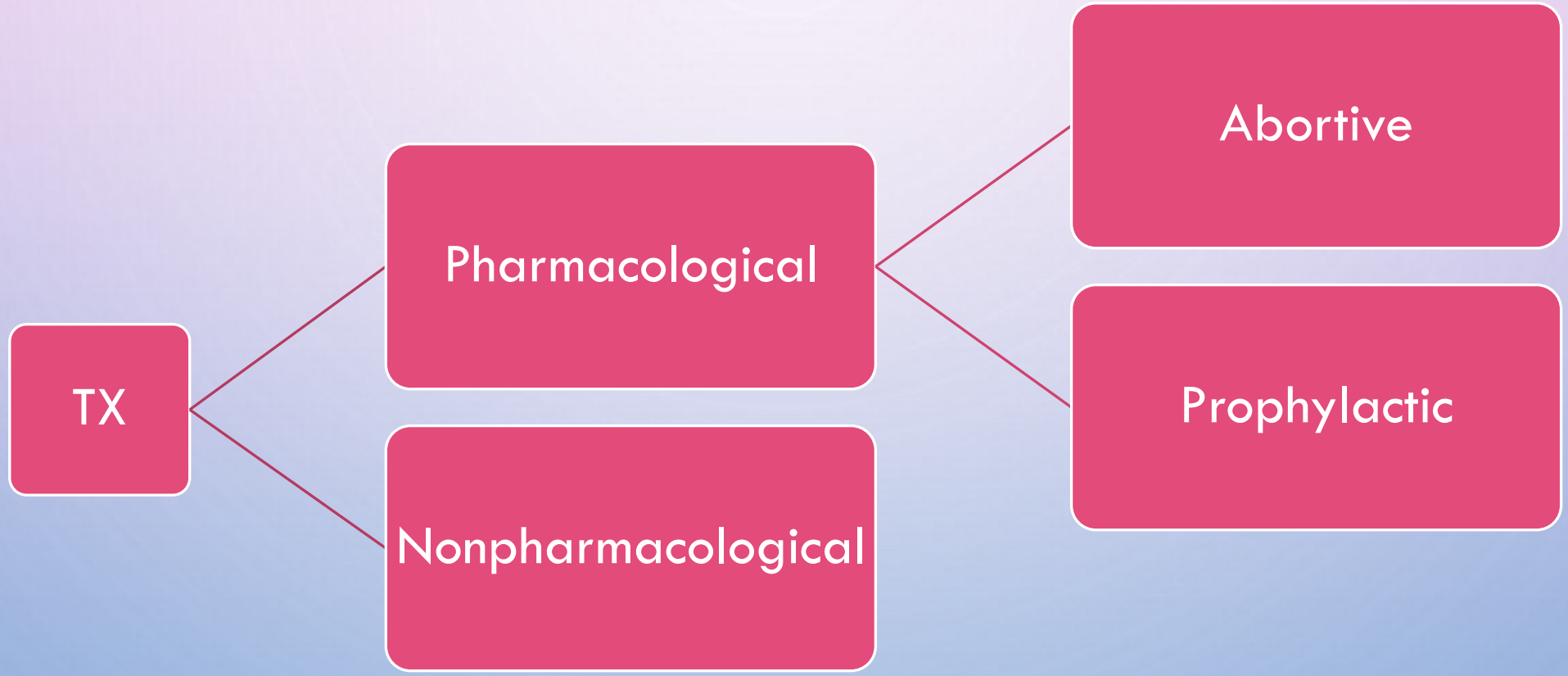
- MIGRAINE IS USUALLY EPISODIC

MIGRAINE WITH AURA

- THE MOST COMMON AURAS ARE VISUAL ALTERATIONS, PARTICULARLY HEMIANOPIC FIELD DEFECTS AND SCOTOMAS (BLIND SPOTS) AND SCINTILLATIONS (FLICKERINGS) THAT ENLARGE AND SPREAD PERIPHERALLY.

MIGRAINE VISUAL AURA

MIGRAINE HEADACHE TREATMENT:



MIGRAINE HEADACHE TREATMENT

- **NONPHARMACOLOGIC MANAGEMENT:**
- MOST PATIENTS BENEFIT BY THE IDENTIFICATION AND AVOIDANCE OF SPECIFIC HEADACHE TRIGGERS·

- A REGULATED LIFESTYLE IS HELPFUL, INCLUDING A HEALTHFUL DIET, REGULAR EXERCISE, REGULAR SLEEP PATTERNS, AVOIDANCE OF EXCESS CAFFEINE AND ALCOHOL, AND AVOIDANCE OF ACUTE CHANGES IN STRESS LEVELS.

MIGRAINE HEADACHE TREATMENT

- PHARMACOLOGICAL:
  - ✓ ACUTE(ABORTIVE)
  - ✓ PROPHYLACTIC

✓ PATIENTS SHOULD UNDERSTAND THE DIFFERENCES BETWEEN ABORTIVE AND PROPHYLACTIC TREATMENT

MIGRAINE HEADACHE TREATMENT

- ✓ ACUTE(ABORTIVE)

- ❖ SIMPLE ANALGESICS:ACETAMINOPHEN,NSAIDS
- ❖ TRIPTANS, 5-HT1B/1D RECEPTOR AGONISTS—SUMATRIPTAN, RIZATRIPTAN, ZOLMITRIPTAN
- ❖ ERGOT ALKALOIDS (EG, DIHYDROERGOTAMINE)
- ❖ NARCOTIC ANALGESICS
- ❖ ANTIEMETICS(PLAZIL, PROMETHASIN)

- ERGOT ALKALOIDS AND TRIPTANS ARE CONTRAINDICATED IN PATIENTS WITH HYPERTENSION OR OTHER CARDIOVASCULAR DISEASE
- AND SHOULD NOT BE USED TOGETHER.

MIGRAINE IN PEDIATRICS:

- LESS DURATION
- LESS PULSETILE
- MORE ANOREXIA
- MORE BILATERAL

- SOMETIMES PAROXYSMAL ATTACKS OF VERTIGO, ABDOMINAL PAIN, VOMITING

- TREATMENT: CYPROHEPTADINE MIGHT BE CONSIDERED.

MEDICATION-OVERUSE HEADACHE:

- ACUTE ATTACK MEDICATIONS,HAVE A PROPENSITY TO AGGRAVATE HEADACHE FREQUENCY AND INDUCE A STATE OF REFRACTORY DAILY OR NEAR-DAILY HEADACHE CALLED MEDICATION- OVERUSE HEADACHE(MOH)

SO

LIMIT THE NUMBER OF ABORTIVE DAYS TREATMENT

MIGRAINE HEADACHE TREATMENT

- PROPHYLACTIC TX INDICATIONS:

  - INCREASING FREQUENCY OF MIGRAINE ATTACKS

    OR

  - ATTACKS THAT ARE EITHER UNRESPONSIVE OR POORLY RESPONSIVE TO ABORTIVE TREATMENTS

- IN GENERAL >= 5 ATTACKS/MONTH

MIGRAINE HEADACHE TREATMENT

- **PROPHYLACTIC TX:**

- ✓ BETA BLOCKERS
- ✓ TRICYCLICS
- ✓ ANTICONVULSANTS
- ✓ CALCIUM CHANNEL BLOCKERS
- ✓ BOTULINUM TOXIN
- ✓ CGRP ANT

DEEP DARK FEARS

SOMETIMES MY MIGRAINES HURT SO MUCH.

I WISH I COULD POP OFF MY HEAD.

CRADLE IT LIKE A BABY.

FRAN KRAUSE 6.5.2015

AND HOLD IT UNTIL THE PAIN GOES AWAY.

TENSION -TYPE HEADACHE

- HEAD-PAIN SYNDROME CHARACTERIZED BY BILATERAL TIGHT, BAND LIKE DISCOMFORT.

- THE PAIN TYPICALLY BUILDS SLOWLY, FLUCTUATES IN SEVERITY, AND MAY PERSIST MORE OR LESS CONTINUOUSLY FOR MANY DAYS.

TENSION -TYPE HEADACHE TREATMENT:

- CAN GENERALLY BE MANAGED WITH SIMPLE ANALGESICS SUCH AS ACETAMINOPHEN, ASPIRIN, OR NSAIDS.
- BEHAVIORAL APPROACHES INCLUDING RELAXATION CAN ALSO BE EFFECTIVE.
- FOR CHRONIC TTH, AMITRIPTYLINE IS THE ONLY PROVEN TREATMENT
- MIRTAZAPIN
- OTHER TRICYCLICS, SELECTIVE SEROTONIN REUPTAKE INHIBITORS, AND THE BENZODIAZEPINES HAVE NOT BEEN SHOWN TO BE EFFECTIVE.
- THERE IS NO EVIDENCE FOR THE EFFICACY OF ACUPUNCTURE.
- PLACEBO-CONTROLLED TRIALS OF ONABOTULINUM TOXIN TYPE A IN CHRONIC TTH HAVE NOT SHOWN BENEFIT.

TRIGEMINAL AUTONOMIC CEPHALGIAS:

- SHORT-LASTING ATTACKS OF UNILATERAL HEAD PAIN ASSOCIATED WITH CRANIAL AUTONOMIC SYMPTOMS, SUCH AS LACRIMATION, CONJUNCTIVAL INJECTION, OR NASAL CONGESTION PAIN IS USUALLY SEVERE AND MAY OCCUR MORE THAN ONCE A DAY.

  INCLUDING:

- CLUSTER HEADACHE
- PAROXYSMAL HEMICRANIAS
- SUNCT (SHORTLASTING UNILATERAL NEURALGIFORM HEADACHE ATTACKS WITH CONJUNCTIVAL INJECTION AND TEARING)
- SUNA (SHORT-LASTING UNILATERAL NEURALGIFORM HEADACHE ATTACKS WITH CRANIAL AUTONOMIC SYMPTOMS)

CLINICAL FEATURES AND TX OF THE TRIGEMINAL AUTONOMIC CEPHALALGIAS

	CLUSTER HEADACHE	PAROXYSMAL HEMICRANIA	SUNCT
Gender	M > F	F = M	F ~ M
Pain			
Type	Stabbing, boring	Throbbing, boring, stabbing	Burning, stabbing, sharp
Severity	Excruciating	Excruciating	Severe to excruciating
Site	Orbit, temple	Orbit, temple	Periorbital
Attack frequency	1/alternate day–8/d	1–40/d (>5/d for more than half the time)	3–200/d
Duration of attack	15–180 min	2–30 min	5–240 s
Autonomic features	Yes	Yes	Yes (prominent conjunctival injection and lacrimation)[a]
Migrainous features[b]	Yes	Yes	Yes
Alcohol trigger	Yes	No	No
Cutaneous triggers	No	No	Yes
Indomethacin effect	—	Yes[c]	—
Abortive treatment	Sumatriptan injection or nasal spray	No effective treatment	Lidocaine (IV)
	Oxygen		
Prophylactic treatment	Verapamil	Indomethacin	Lamotrigine
	Methysergide		Topiramate
	Lithium		Gabapentin

CLUSTER HEADACHE

- CLUSTERS OF BRIEF, VERY SEVERE, UNILATERAL, CONSTANT, NONTHROBBING HEADACHES WITH AUTONOMIC FEATURES.
- LAST FROM 15 MINUTES TO 3 HOURS.
- OCCUR MOST OFTEN AT NIGHT, AWAKENING THE PATIENT FROM SLEEP, RECUR DAILY , OFTEN AT NEARLY THE SAME TIME OF DAY (CIRCADIAN PERIODICITY).
- PRECIPITATED BY THE USE OF ALCOHOL OR VASODILATING DRUGS, ESPECIALLY IF USED DURING A CLUSTER SIEGE.

ACUTE TREATMENT OF CLUSTER HA

- INHALATION OF 100% OXYGEN (7-12 L/MIN FOR 15-20 MINUTES)
- SUBCUTANEOUS ADMINISTRATION OF SUMATRIPTAN (6 MG, REPEATED ONCE PER ATTACK

TRANSITIONAL PROPHYLAXIS OF CLUSTER

- ADMINISTRATION OF PREDNISONE AT THE BEGINNING OF A CLUSTER CYCLE CAN BE ABORTIVE, WHEN GIVEN AS 40 TO 80 MG/D ORALLY FOR 1 WEEK, AND THEN DISCONTINUED BY TAPERING THE DOSE OVER THE FOLLOWING WEEK.

- VERAPAMIL: DRUG OF CHOICE IN EPISODIC CLUSTER
- LITHIUM: LIMITED DATA
- TOPIRAMATE: ADD ON VERAPAMIL

TRIGEMINAL NEURALGIA

- PAIN IS UNILATERAL, STABBING AND TYPICALLY CONFINED TO THE AREA SUPPLIED BY THE SECOND (V2) AND THIRD (V3) DIVISIONS OF THE TRIGEMINAL (V) NERVE.
- 90% AFTER AGE OF 40
- RARELY OCCUR DURING SLEEP
- THE TRIGEMINAL (V) NERVE ROOTS ARE CLOSE TO A VASCULAR STRUCTURE, AND MICROVASCULAR COMPRESSION FOLLOWED BY DEMYELINATION OF THE NERVE IS BELIEVED TO CAUSE THE DISORDER.
- RARELY, SIMILAR PAIN MAY OCCUR IN MULTIPLE SCLEROSIS OR WITH BRAINSTEM TUMORS, BASILAR ARTERY ANEURYSM , CP ANGLE TUMORS WHICH SHOULD BE CONSIDERED IN YOUNG PATIENTS AND IN ALL PATIENTS WHO SHOW NEUROLOGIC ABNORMALITIES ON EXAMINATION OR WHO EXPERIENCE BILATERAL SYMPTOMS.
- **TRIGGER POINT**

TRIGEMINAL NEURALGIA TX

- CARBAMAZEPINE 600 TO 1200 MG/D

- OTHER DRUGS:
- LAMOTRIGIN

PHENYTOIN

- BACLOFEN

GLOSSOPHARYNGEAL NEURALGIA

- NEURALGIA OF CN 9
- LESS PREVALENT THAN TRIGEMINAL NEURALGIA
- UNILATERAL PAIN LOCALIZED TO THE OROPHARYNX, TONSILLAR PILLARS, BASE OF THE TONGUE, OR AUDITORY MEATUS.
- RARELY CARDIAC SYNCOPE DUE TO BRADYARRHYTHMIA, SYNCOPE) ACCOMPANIES THE PAIN.
- INITIATED BY SWALLOWING OR TALKING.

- THERE ARE NO ABNORMAL NEUROLOGIC SIGNS.

THUNDERCLAP HEADACHE(TTP<1MIN)

- SAH--->NORMAL CT→LP
- RCVS
- IFX
- CVT
- DISSECTION
- SIH
- PRES
- ICH
- APOPLEXY

CEREBRAL VENOUS SINUS THROMBOSIS

- PREGNANCY
- OCP

GIANT CELL ARTERITIS= TEMPORAL ARTERITIS

- A SYSTEMIC VASCULITIS.
- AFFECTS MEDIUM-SIZED AND LARGE ARTERIES, ESPECIALLY BRANCHES OF THE EXTERNAL CAROTID ARTERY.

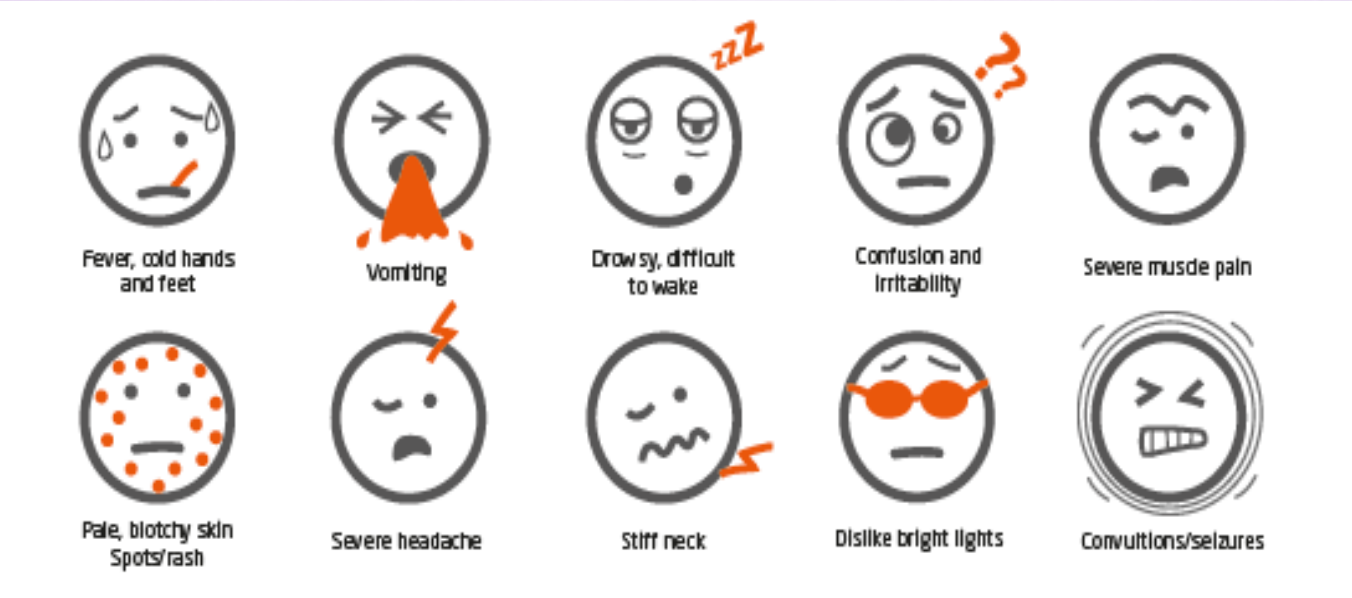
- AGE>50 YRS
- F>M
- THE MOST COMMON SYMPTOM IS A NEW, NONSPECIFIC HEADACHE, WHICH CAN BE USUALLY UNILATERAL OR OCCASIONALY BILATERAL AND IS OFTEN FAIRLY SEVERE AND BORING IN QUALITY.

- FREQUENTLY ASSOCIATED WITH MALAISE,MYALGIA, WEIGHT LOSS, ARTHRALGIA, AND FEVER (**POLYMYALGIA**
- **RHEUMATICA** COMPLEX).

GIANT CELL ARTERITIS= TEMPORAL ARTERITIS

- **JAW CLAUDICATION** IS HIGHLY SUGGESTIVE OF GIANT CELL ARTERITIS.
- ESR IS ELEVATED, BUT NOT INVARIABLY.
- DX:BIOPSY.
- POSSIBLE GIANT CELL ARTERITIS REQUIRES PROMPT EVALUATION TO AVOID VISUAL LOSS, BUT THERAPY SHOULD NOT BE WITHHELD PENDING BIOPSY DIAGNOSIS.
- INITIAL THERAPY →PREDNISONE 40-60 MG/D ORALLY.

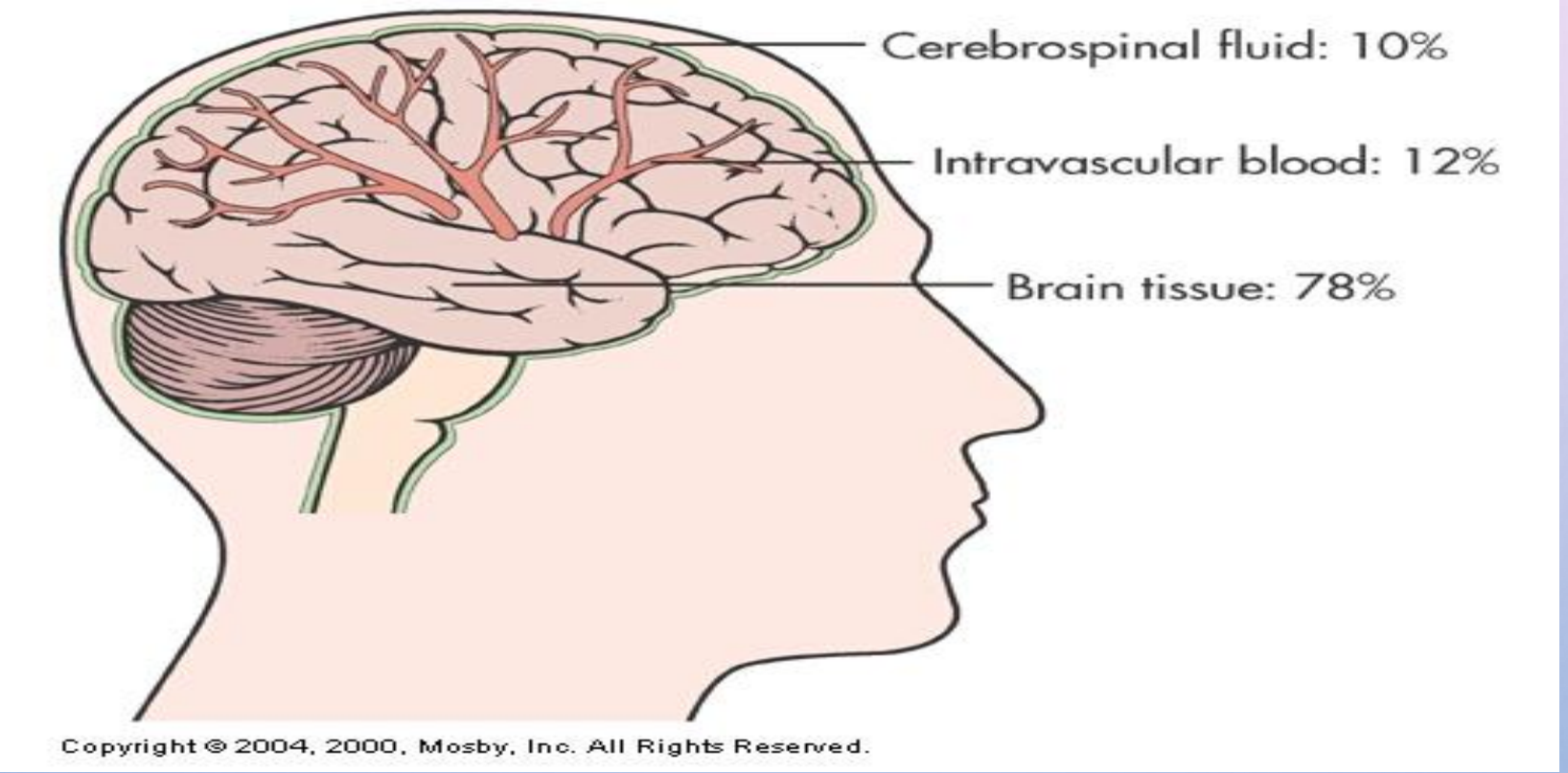
MENINGITIS AND ENCEPHALITIS



RAISED INTRACRANIAL PRESSURE

- SKULL HAS THREE ESSENTIAL COMPONENTS:
  - BRAIN TISSUE = 78%
  - BLOOD = 12%
  - CEREBROSPINAL FLUID (CSF) = 10%

- ANY INCREASE IN ANY OF THESE TISSUES CAUSES INCREASED ICP



IDIOPATHIC INTRACRANIAL HYPERTENSION (PSEUDOTUMOR CEREBRI)

- INTRACRANIAL HYPERTENSION CAN BE SYMPTOMATIC OF A VARIETY OF DISORDERS (ENDOCRINE DYSFUNCTION, ADDISON DISEASE, HYPOPARATHYROIDISM, CHRONIC HYPERCAPNIA, SEVERE RIGHT HEART FAILURE ETC…)BUT THESE ARE LESS COMMON THAN THE IDIOPATHIC FORM·

- IMPAIRED CSF ABSORPTION MAY BE INVOLVED IN PATHOGENESIS·

IDIOPATHIC INTRACRANIAL HYPERTENSION

CLINICAL MANIFESTATIONS:

- F>M
- PEAK INCIDENCE IN THE THIRD DECADE
- MOST PATIENTS ARE OBESE.

- HEADACHE OF VARIABLE CHARACTER
- PAPILLEDEMA
- PULSATILE TINNITUS
- VISUAL LOSS
- DIPLOPIA(FROM ABDUCENS [VI] NERVE PALSY)

IDIOPATHIC INTRACRANIAL HYPERTENSION DX & RX

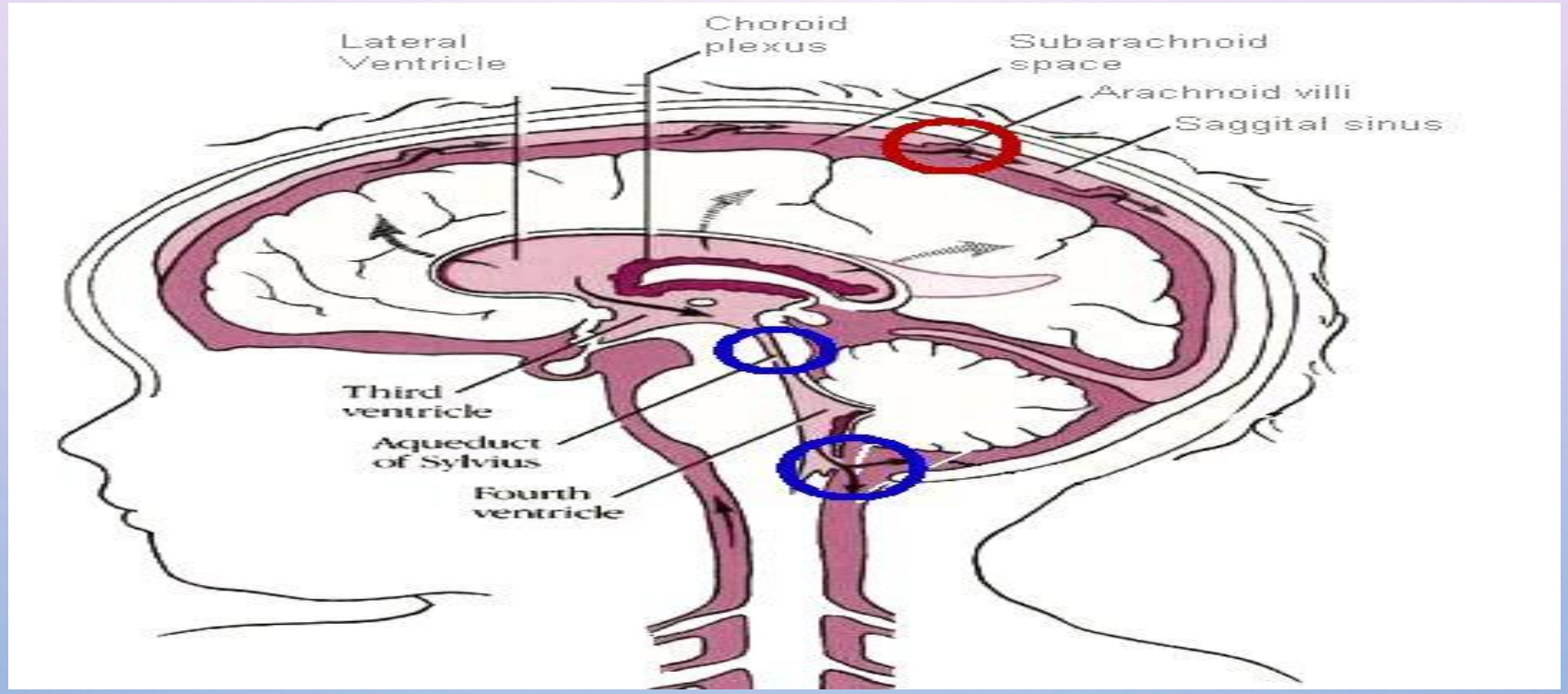
- BILATERAL PAPILEDEMA→MRI TO R/O MASS→LP
- ELEVATED INTRACRANIAL PRESSURE (CSF OPENING PRESSURE >250 MM H2O) IS DOCUMENTED BY LUMBAR PUNCTURE.

- IF A CAUSE IS IDENTIFIED, SPECIFIC TREATMENT SHOULD BE GIVEN.
- TREATMENT OF IDIOPATHIC CASES IS WITH ACETAZOLAMIDE (1-2 G/D); TOPIRAMATE MAY ALSO BE EFFECTIVE

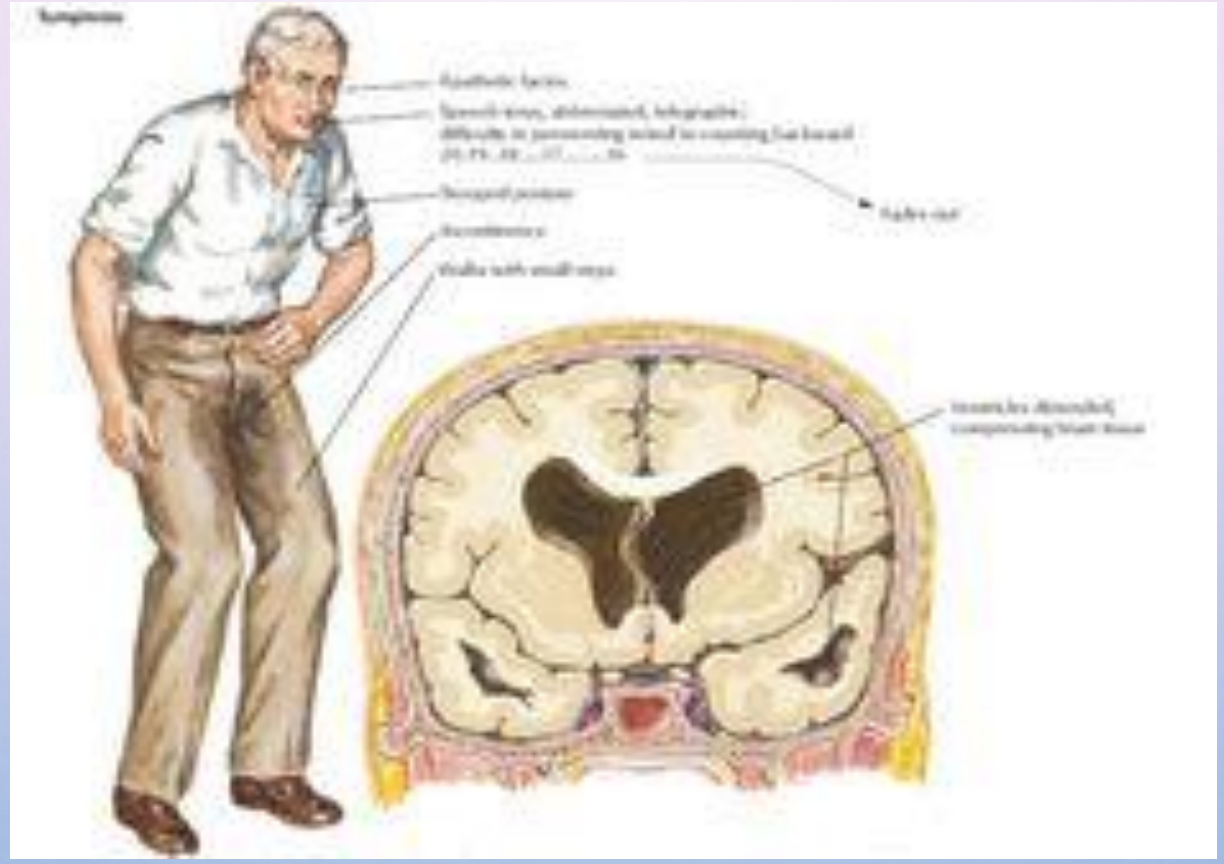
PSEUDOTUMOR CEREBRI

- Syndrome of raised intracranial pressure
- without any
- clinical
- laboratory
- radiological evidence of
- intracranial pathology
- Presents with symptoms of increased ICP
- headache
- pulsatile tinnitus
- transitory visual obscuration
- diplopia

HYDROCEPHALUS(OBS VS COM)



NPH



THANKS FOR YOUR ATTENTION