

# DEPRESSION / ☹️

↳ Depression is a state of "Low Mood" that affects the person's "mood", "Feelings", "Behaviours", & "Thought"

↳ Significant risk of Suicidal death

# PAST ↔ Present ↔ Future

## SYMPTOMS :-

### Emotional Symptoms -

- ↳ Misery, Apathy, & pessimism
- ↳ Low Self Esteem:- Guilty, Inadequacy & Ugliness
- ↳ Indecisiveness, Loss of motivation

### Biological Symptoms:-

- ↳ Retardat<sup>n</sup> of thought & action
- ↳ Loss of libido, Sleep disturbance, ↓ Appetite

## TYPES :-

1. Major Depression - Severe symptoms
2. Atypical Depression - Subtype of Major Depression, and can be treated with medicine
3. Dysthymia (Recurrent, mild depression)
4. Seasonal Affective Disorder (SAD) - Reduced day-light hour in winter may increase the depressive symptoms in some people.

I UNIPOLAR DEPRESSIVE SYNDROME :- Mood swings are always in same direction.

→ Associated with stressful life Events. Common symptoms are anxiety and agitation. Reactive Depression (75%)



→ Endogenous Depression (25%) - Familial pattern

## II. BIPOLAR DEPRESSION - Dep. alternates with Mania

- ↳ usually appears in early adult life
- ↳ Strong hereditary tendency.

ETIOLOGY - Stressful life Events, Medical Treatment, Psychiatric Syndrome, Genetic

## PATHOPHYSIOLOGY :-

# Monoamine Hypothesis - Proposed by "Schildkraut" in 1965. - "Depression is caused by functional deficit of Monoamine Transmitters (N-Ad, SHT) at certain site of Brain"

## # Neuroendocrine mechanism

Hypothalamus  $\xrightarrow{CRH}$  Pituitary  $\xrightarrow{ACTH}$  Cortisole Sec.

## # Neuroinflammation & Immune mechanism

## DRUG TREATMENTS -

1. Tricyclic Antidepressants (TCAs) -
  - # NA & SHT Reuptake inhibitor - Imipramine, Doxepine, Amitriptyline, Clomipramine, Trimipramine
  - ± NA reuptake inhibitors - Desipramine, Nortriptyline
2. SSRI - Fluoxetine, Fluvoxamine, Paroxetine
3. SNRI - Venlafaxine, Duloxetine
4. MAO-A inhibitor - Moclobemide, clorgyline
5. Atypical Antidepressant - Trazodone, Mianserin, Mirtazapine, Bupropione, Amoxapine

# SCHIZOPHRENIA

↳ Schizophrenia is a chronic & severe mental disorder that is imp form of psychiatric illness affects how a person thinks, feels, & behaves.

↳ They have lost touch with reality.

## A. Positive Symptoms - "Psychotic Behave"

# Hallucinations # Delusions # Thought disorder  
# Abnormal behaviour # Movement disorder

## B. Negative Symptoms

# Flattening of emotional response  
# Withdrawal from social contact  
# Reduced feeling of pleasure

## C. Cognitive Symptoms

# Reduced Cognitive Function (Attention, learn, memory)



## ETIOPATHOGENESIS

1. Genetics → Family history ↑ the risk

↳ Neuregulin-1 gene → Neuronal synaps & plasticity  
→ NMDA Receptor Expression

↳ gene for d-amino acid oxidase (DAAO) → D-serine  
Allosteric modulator of NMDA Receptor

2. Environmental Factors -

↳ Maternal viral infection - ↓ Neuronal development

↳ Cannabis consumption

↳ Drug Addiction

↳ Environmental toxins

## NEUROCHEMICAL THEORIES - Pathophysiology

1. Dopamine Theory - Carlsson proposed Dopamine theory & got Nobel prize in 2000.

⇒ ↑ Dopaminergic (D<sub>2</sub>) pathway may responsible for psychotic behaviour.

2. Glutamate Theory - ↓ Glutamatergic pathway

3. Serotonin Theory - ↑ Serotonergic pathway

Serotonergic — Dopaminergic

## DRUG MANAGEMENT

1. Neuroleptics (D<sub>2</sub> Antagonist) = Typical

A. Phenothiazine - Chlorpromazine, Thioridazine, Fluphenazine

B. Butyrophenone - Haloperidol, Trifluperidol

C. Thioxanthine - Flupenthixol

2. Atypical Antipsychotic Drugs

- clazopine, Risperidone, Olanzapine

Ziprasidone, Zoltepine,

# ALZHEIMER'S DISEASE (AD)

AD is the commonest progressive, dementing, neurodegenerative disease in elderly (>65y)

\* "Alois Alzheimer", a German Scientist described symptoms & pathology - "Neuronal loss", "Plaques", & Neurofibrillary tangles

# Major Affected Area → Cerebral Cortex



## Clinical Sign & Symptoms →

1. Mild → memory loss, language problem, behavioral changes, Judgement impairment
2. Moderate: - Behavioral/Personality changes, unable to learn & recall new info., long-term memory loss, Confusion, Aggression
3. Severe: → + motor disturbance

- \* Aphasia - Disturbance in language function
- \* Apraxia - Impaired motor function
- \* Agnosia - Inability to recognise name of objects
- \* Executive Functioning - Inability to think abstractly

Risk Factors - ① Aging >65y ⇒ Progressive neuronal loss

- ② Hypertension ③ Diabetes ④ Hyperlipidemia  
⑤ Down Syndrome ⑥ Smoking & Alcohol

6) Genetic - mutation on - # Amyloid Precursor Proteins (APP)  
# Presenilin gene (PSEN1 & PSEN2)  
#  $\beta$ -secretase (BACE1)  
#  $\gamma$ -secretase #  $\epsilon 4$  allele of apolipoprotein E (APO-E)

## Pathophysiology -

1. Neuronal Damage - loss of neurons & synaps, cerebral atrophy, ↓ cholinergic neurone, imbalance of glutaminergic neurons.
2. Genetic mutation
3. Disposition of  $\beta$ -Amyloid protein - resulting in Neuritic "Senile" Plaque - Neurotoxic
4. Neurofibrillary Tangles - are filamentous collection of neurofibrillaments & microtubules within the cytoplasm of neuron

## Management -


1. Nutrients - w-3-fatty a, Curcumin, vit E, Ginkgo
2. Cognitive Enhancer:-
  - a. Anti-choline esterase - Rivastigmine, Donepezil, Galantamine
  - b. Glutamate Antagonist - Memantine
  - c. others - Piracetam, Citicoline, Pyritinol, Dihydroergotoxin, Ginkgo biloba

# STROKE

↳ Brain stroke is a medical condition in which blood supply to the brain is interrupted or reduced and that may lead to brain cell death.

Types/Causes - Ischemic and Hemorrhagic

1. Ischemic Stroke: Narrowed/Blocked of artery ⇒  
⇒ ↓ Blood Supply ⇒ Ischemic cell death, (85% cases)


a. Thrombotic Stroke - Formation of thrombus in cerebral arteries. "Atherosclerosis" 

b) Embolic Stroke - obstruction due to embolus from elsewhere (Heart)

c) Systemic Hypoperfusion - shock

2. Hemorrhagic Stroke - Blood vessels Rupture

a) Intracerebral Hemorrhage - Within Brain

b) Subarachnoid Hemorrhage -  skull

3. Transient Ischemic Attack (TIA) = Ministroke

↳ Temporary partial blockage of brain arteries

↳ Silent stroke - Not outward symptoms

↳ Symptoms :-

- ① Trouble in speaking & understanding
- ② Paralysis or numbness of face, legs, arm
- ③ Visual Disturbance
- ④ Headach
- ⑤ motor-disorders

Risk factors :- Atherosclerosis, Diabetes, HTN, Hyperlipidemia, Anticoagulants (high dose), CVS dis.

Diagnosis :- CT scan, MRI, Doppler Ultrasound, arteriography

Therapeutic Management :-

1. Ischemic Stroke - "Anti atherosclerotic Drugs"

↳ Aspirin, Antiplatelet drugs, Thrombolytic agents (recombinant tissue Plasminogen activator), Antihyperlipidemic drugs

- "Surgery" - Removing of blood clot

2. Hemorrhagic Stroke :-

↳ Control the risk factors - Hypertension, Diabetes, Avoid excessive Anticoagulants & Antithrombotic drugs

# Stroke Rehabilitation

# Self management

