SCHIZOPHRENIA

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- **Psychotic Disorders** are mental illnesses characterized by gross impairment in reality testing and personal functioning
- Its symptoms include dysfunctions in nearly every capacity of which the human brain is capable—perception, inferential thinking, language, memory, and executive functions.
- It is not split personality
- The illness is called "**schizo**" (fragmented or split apart) "**phrenia**" (mind)
- In DSM-V : psychotic spectrum

schizophrenia is defined by a group of characteristic symptoms, such as hallucinations, delusions, or negative symptoms (i.e., affective flattening, alogia, avolition); deterioration in social, occupational, or interpersonal relationships; and continuous signs of the disturbance for at least 6 months.

TABLE 5–1. DSM-5 schizophrenia spectrum and other psychotic disorders:

- Schizotypal personality disorder
- Delusional disorder
- Brief psychotic disorder
- Schizophreniform disorder
- Schizophrenia
- Schizoaffective disorder
- Substance/medication-induced psychotic disorder
- Psychotic disorder due to another medical condition
- Catatonia associated with another mental disorder (catatonia specifier)
- Catatonic disorder due to another medical condition
- Unspecified catatonia
- Other specified schizophrenia spectrum and other psychotic disorder
- Unspecified schizophrenia spectrum and other psychotic disorder

Epidemiology :

- worldwide prevalence of schizophrenia is about 0.5%–1%.
- age at first psychotic episode is typically 18–25 years for **men** and 21–30 years for **women**
- About one-third attempt suicide
- Annual incidence of 0.5 – 5.0 per 10,000

Clinical features :

- **Psychotic symptoms** : delusion & hallucinations
- **Negative dimension** :
  - the absence of something that should be present, such as **volition** [lack of motivation]).
  - Diminished emotional expression (**affective flattening or blunting**)
  - **Alogia** is characterized by a diminution in the amount of spontaneous speech
  - **Anhedonia** is the inability to experience pleasure
  - Social withdrawal
- **The disorganized dimension** :

includes disorganized speech and behavior and inappropriate affect.

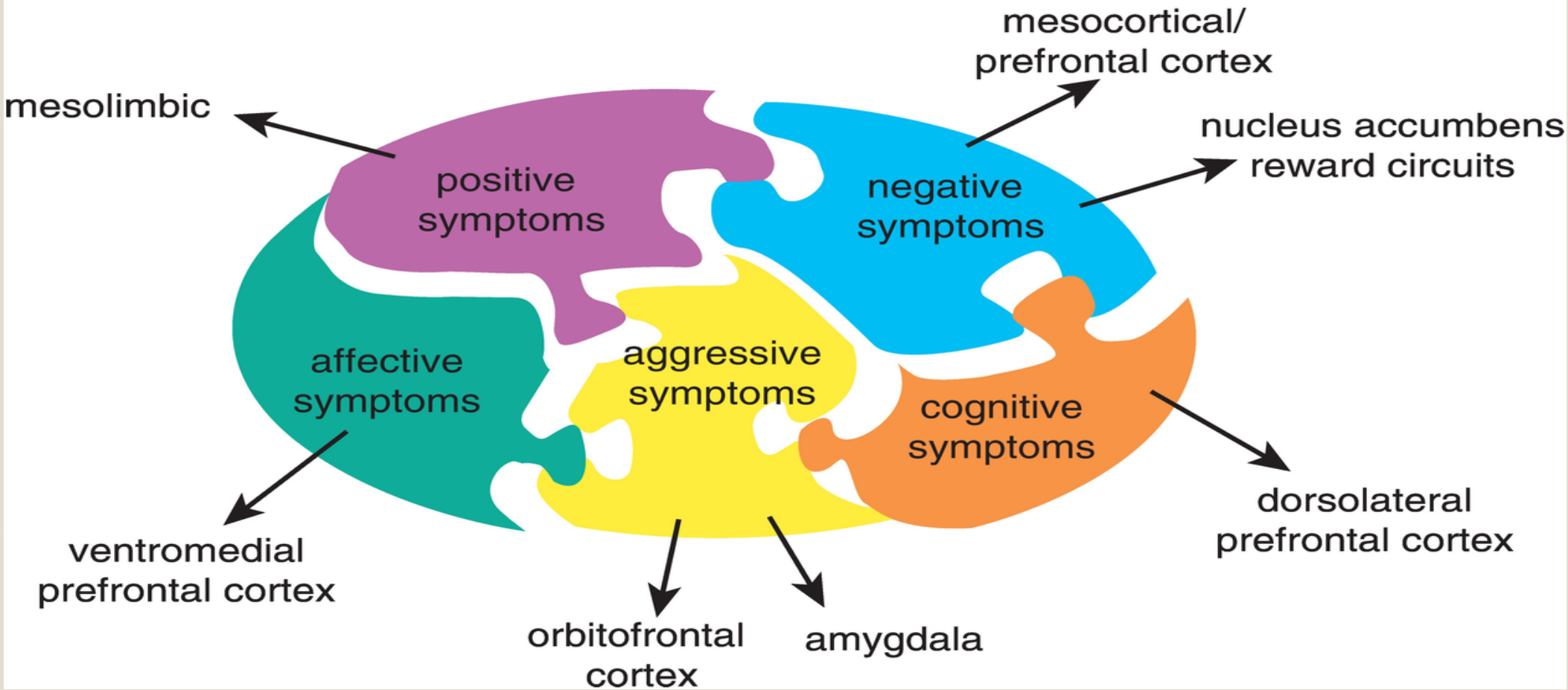
Cognitive deficits :

Attention , memory , verbal fluency

Mood symptoms :

Depression , anxiety , suicidal behavior, hostility , aggression

Match Each Symptom to Hypothetically Malfunctioning Brain Circuits



Other Symptoms

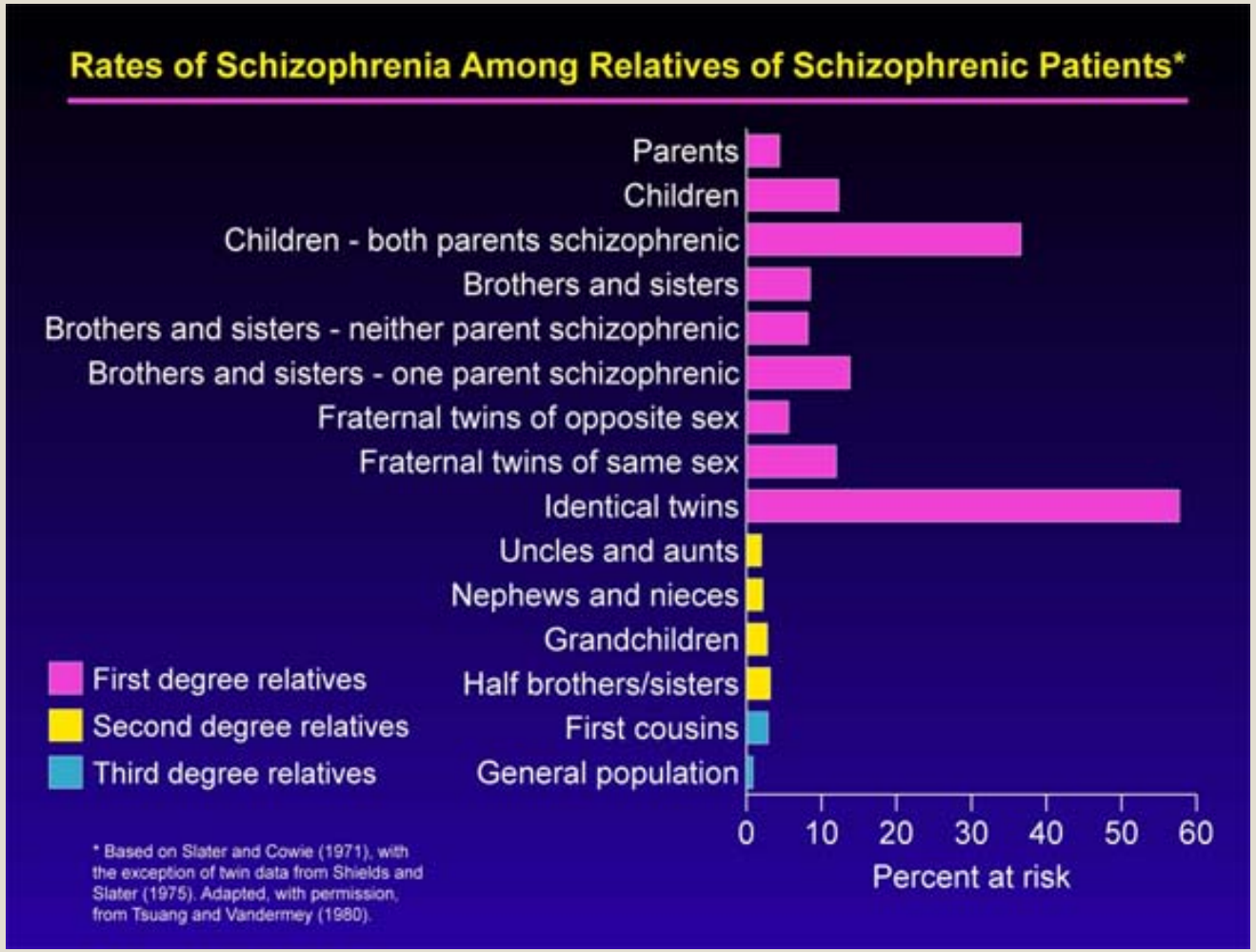
- lack insight; they do not believe they are ill and reject the idea that they need treatment.
- Non localizing *neurological soft signs* *such as* abnormalities in stereognosis, balance
- In active sex drive
- Substance abuse is common and includes alcohol and other drugs It is thought that many schizophrenic patients abuse substances in an attempt to lift their mood, boost their level of motivation, or reduce their medication side effects

Etiology :

The exact etiology is **UN KNOWON**

1. Genetics : A wide range of genetic studies strongly suggest a genetic component to the inheritance of schizophrenia that outweights the environmental influence.

These include: family studies, twin studies and chromosomal studies.



- siblings of schizophrenic patients have about a 10% chance of developing schizophrenia.
- children who have one parent with schizophrenia have a 5%–6% chance.
- 17% for persons with one sibling and one parent with schizophrenia
- 46% for the children of two schizophrenic parents
- monozygotic twins—an average of 46%, compared with 14% concordance in dizygotic twins

2. Neuroimaging and Neuropathology

- Cerebral ventricular enlargement
- Sulcal enlargement and cerebellar atrophy
- decreased thalamus size
- abnormalities have been reported in the brain particularly in the limbic system, basal ganglia and cerebellum. Either in structures or connections

3. Neurobiology

Certain areas of the brain are involved in the pathophysiology of schizophrenia: the limbic system, the frontal cortex, cerebellum, and the basal ganglia.

a- Dopamine Hypothesis;

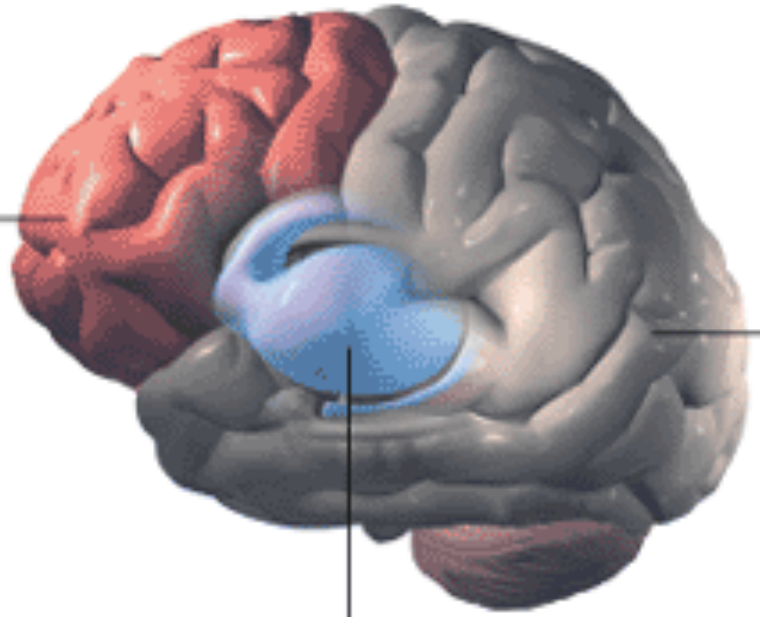
Too much dopaminergic activity (whether it is ↑ release of dopamine, ↑ dopamine receptors, hypersensitivity of dopamine receptors to dopamine, or combinations is not known).

b- Other Neurotransmitters;

Serotonin, Norepinephrine, GABA, Glutamate(hypofunction in NMDA receptors) & Neuropeptides

DIFFERENT NEUROTRANSMITTERS, SAME RESULTS

SOME SCIENTISTS have proposed that too much dopamine leads to symptoms emanating from the basal ganglia and that too little dopamine leads to symptoms associated with the frontal cortex. Insufficient glutamate signaling could produce those same symptoms, however.



IN THE REST OF THE CORTEX, glutamate is prevalent, but dopamine is largely absent.

IN THE FRONTAL CORTEX, where dopamine promotes cell firing (by acting on D1 receptors), glutamate's stimulatory signals amplify those of dopamine; hence, a shortage of glutamate would decrease neural activity, just as if too little dopamine were present.

IN THE BASAL GANGLIA, where dopamine normally inhibits cell firing (by acting on D2 receptors on nerve cells), glutamate's stimulatory signals oppose those of dopamine; hence, a shortage of glutamate would increase inhibition, just as if too much dopamine were present.

ALFRED T. KAMAJIAN

c. Psychoneuroimmunology;

↓ T-cell interlukeukin-2 & lymphocytes, abnormal cellular and humoral reactivity to neurons and presence of antibrain antibodies.

These changes are due to neurotoxic virus ? or endogenous autoimmune disorder ?

d. Psychoneuroendocrinology;

Abnormal dexamethasone-suppression test

↓ LH/FSH

A blunted release of prolactin and growth hormone on stimulation.

4- Psychosocial Factors:

- In family dynamics studies, no well-controlled evidence indicates specific family pattern plays a causative role in the development of schizophrenia.
- High Expressed Emotion family : increase risk of relapse.

5- Stress-Diathesis Model:

- Integrates biological, psychosocial and environmental factors in the etiology of schizophrenia.
- Symptoms of schizophrenia develop when a person has a specific vulnerability that is acted on by a stressful influence.

Diagnosis :

DSM-5 Diagnostic Criteria for Schizophrenia:

A- ≥ two characteristic symptoms for one month, at least one of them is (1),(2) or (3)

1- Delusions

2- Hallucinations

3- Disorganized speech (frequent derailment or incoherence)

4- Grossly disorganized or catatonic behavior

5- Negative symptoms (diminished emotional expression or lack of drive (avolition))

B- Social, Occupation or self-care dysfunction

C- Duration of at least 6 months of disturbance (include at least one month of active symptoms that meet Criterion A; in addition of periods of prodromal and residual symptoms).

D- Schizoaffective & mood disorder exclusion

E- The disturbance is not due to Substance or another medical condition.

F- If there is history of autism spectrum disorder or a communication disorder of childhood onset, schizophrenia diagnosis is made only if delusion or hallucinations plus other criteria are present.

Mental Status Examination (MSE) :

- Appearance & behavior (variable presentations)
  - Mood, feelings & affect (reduced emotional responsiveness, inappropriate emotion)
  - Perceptual disturbances (hallucinations, illusions)
  - Thought: Thought content (delusions)
    Form of thought (looseness of association)
    Thought process (thought blocking, poverty of thought content, poor abstraction, perseveration)
  - Impulsiveness, violence, suicide & homicide
  - Cognitive functioning
  - Poor insight and judgment

clinical course :

TABLE 5–4. Typical stages of schizophrenia

Stage	Typical features
Prodromal phase	Insidious onset occurs over months or years; subtle behavior changes include social withdrawal, work impairment, blunting of emotion, avolition, and odd ideas and behavior.
Active phase	Psychotic symptoms develop, including hallucinations, delusions, or disorganized speech and behavior. These symptoms eventually lead to medical intervention.
Residual phase	Active-phase symptoms are absent or no longer prominent. There is often role impairment, negative symptoms, or attenuated positive symptoms. Acute-phase symptoms may reemerge during the residual phase ("acute exacerbation").

- Acute exacerbation with increased residual impairment
- Full recovery: very rare
- Longitudinal course: downhill

TABLE 5–5. Features associated with good and poor outcome in schizophrenia

Feature	Good outcome	Poor outcome
Onset	Acute	Insidious
Duration of prodrome	Short	Since childhood
Age at onset	Late 20s to 30s	Early teens
Mood symptoms	Present	Absent
Psychotic or negative symptoms	Mild to moderate	Severe
Obsessions/compulsions	Absent	Present
Gender	Female	Male
Premorbid functioning	Good	Poor
Marital status	Married	Never married
Psychosexual functioning	Good	Poor
Neurological functioning	Normal	+ Soft signs
Structural brain abnormalities	None	Present
Intelligence level	High	Low
Family history of schizophrenia	Negative	Positive

Differential diagnosis :

Primary Psychiatric disorders:

Schizophreniform disorder

Brief psychotic disorder

Delusional disorder

Schizoaffective disorder

Mood disorders

Personality disorders (schizoid, schizotypal & borderline personality)

Factitious disorder

Malingering

Secondary psychiatric disorders:

-Substance-induced disorders

-Psychotic disorders due to another medical disorder :

Epilepsy (complex partial)

CNS diseases

Trauma

Others

Other psychotic disorders :

- Psychotic Disorders due to another medical condition
- Substance-induced psychotic disorder

- Schizophreniform disorder ;
1-6 month of disturbance

- Brief psychotic disorder:
<1month of disturbance

- Delusional disorder(delusion only >1m)

- **Schizoaffective disorder:** An uninterrupted period of illness during which there is a major mood episode (major depressive or manic) concurrent with Criterion A of schizophrenia. There is Delusions or hallucinations for 2 or more weeks in the absence of a major mood episode during the illness course.

Treatment :

Reasons to hospitalize patients with schizophrenia

- 1. When the illness is new, to rule out alternative diagnoses and to stabilize the dosage of antipsychotic medication
- 2. For special medical procedures such as electroconvulsive therapy
- 3. When aggressive or assaultive behavior presents a danger to the patient or others
- 4. When the patient becomes suicidal
- 5. When the patient is unable to properly care for himself or herself (e.g.,refuses to eat or take fluids)
- 6. When medication side effects become disabling or potentially life threatening (e.g, neuroleptic malignant syndrome)

Biological Therapy :

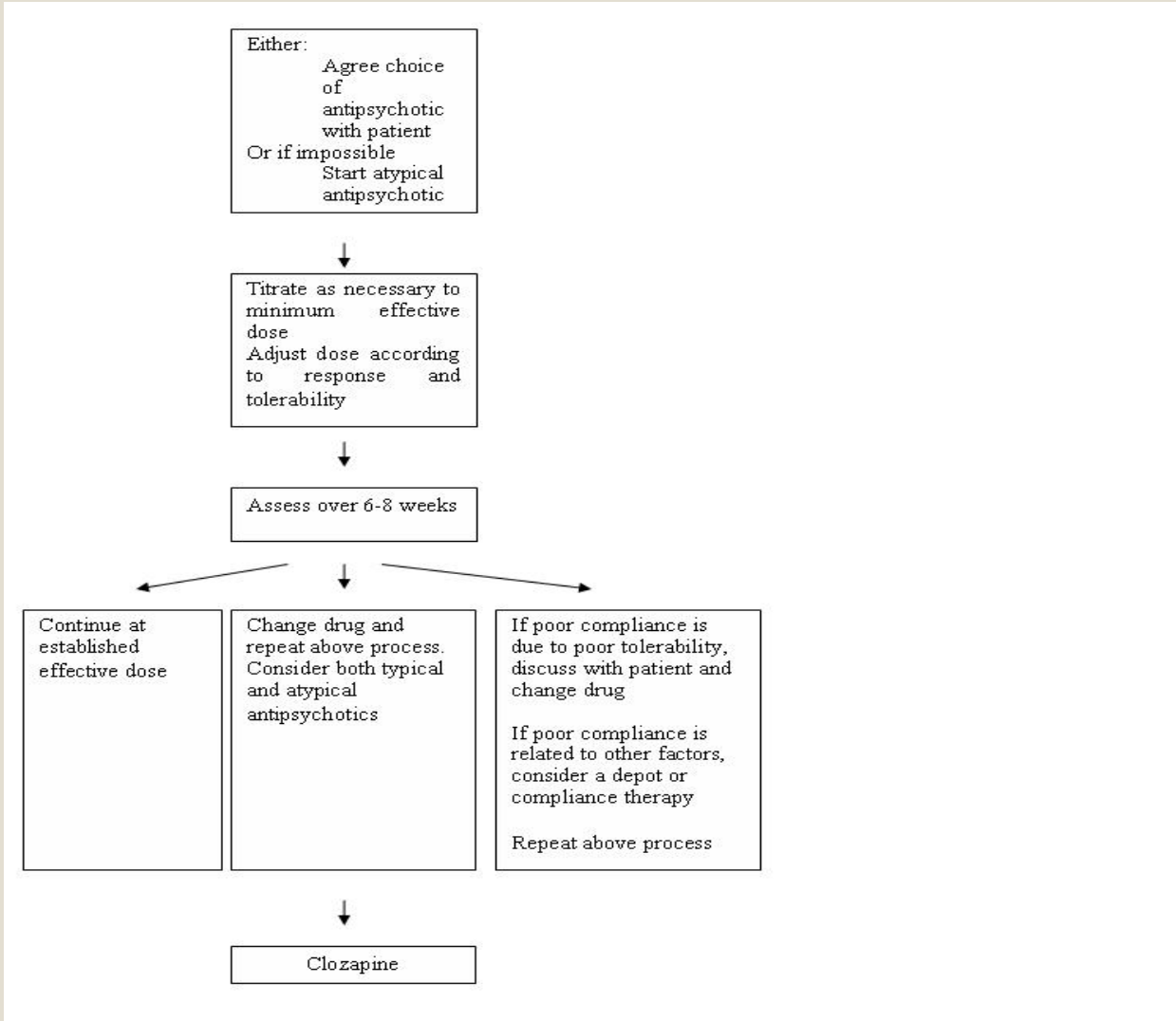
- ❑ Antipsychotic medications are the mainstay of the treatment of schizophrenia.
- ❑Generally, they are remarkably safe.
- ❑Two major classes:

-Conventional, (1st generation) e.g. haloperidol, chlorpromazine.

-Atypical, 2nd generation (Serotonin-dopamine receptor antagonists) e.g. Risperidone, clozapine, olanzapine).

- Depot forms of antipsychotics eg. Risperidone Consta is indicated for poorly compliant patients.

- ❑Electroconvulsive therapy (ECT) for catatonic or poorly responding patients to medications


Either:
Agree choice of antipsychotic with patient
Or if impossible
Start atypical antipsychotic
Titrate as necessary to minimum effective dose
Adjust dose according to response and tolerability
Assess over 6-8 weeks
Continue at established effective dose
Change drug and repeat above process. Consider both typical and atypical antipsychotics
If poor compliance is due to poor tolerability, discuss with patient and change drug
If poor compliance is related to other factors, consider a depot or compliance therapy
Repeat above process
Clozapine

Psychosocial Interventions

- **Assertive community treatment (ACT) programs** : careful monitoring of patients through mobile mental health teams
- **Family therapy,**
- **Cognitive rehabilitation** involves the remediation of abnormal thought processes known to occur in schizophrenia, using methods pioneered in the treatment of brain-injured persons.
- **Social skills training (SST)** aims to help patients develop more appropriate behavior
- **Psychosocial rehabilitation** serves to integrate the patient back into his or her community rather than segregating the patient in separate facilities
- **Vocational rehabilitation** may help a patient obtain supported employment, competitive work in integrated settings, and more formal job training programs

Thank You