

MEDICINE 438's REVIEW OF

CLINICAL PSYCHIATRY



Psychotic Disorders

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Objectives

- ◀ Understanding of the meaning of psychosis.
- ◀ Identify the possible causes/theories explaining psychotic symptoms.
- ◀ Knowing the important feature of Schizophrenia and other psychotic disorder.
- ◀ Knowing the general principle of treating Schizophrenia and other psychotic disorder.
- ◀ Knowing the most important antipsychotic medications including indications and common side effects.



EDITING FILE

Psychosis

◀ Case Scenario

Complaint:

- Nasser is a 28 year-old single male who was brought to the emergency room by his family. They noticed gradual changes in his behavior 9 months when he started eating only canned food but not cooked food made by his family. He started to become agitated and they have noticed that he talks to himself and stares occasionally on the roof of his room. He is afraid of being poisoned.

Past hospitalizations:

- He had two brief psychiatric hospitalizations in the last 3 years. Precipitated by anger at his neighbor and voices commenting about his behavior.

Childhood:

- Nasser was a healthy child, but he was a bedwetter. He was slower to develop than his siblings.

Questions:

- What are the possible etiological reasons?
- What are the differential diagnoses?
- What are the main signs and symptoms?

◀ Psychosis

- Psychosis is a term used to describe a distorted perception of reality.
- Psychosis → impaired reality testing (ما اقدر افرق بين الحقيقة والخيال) (when a normal person hallucinates, they know it is not true¹, while a psychotic patient will think it is true).
- Poor reality testing may be accompanied by delusions, perceptual disturbances (illusions or hallucinations), and/or disorganized thinking/behaviour.
- Psychosis is a symptom, not an illness (includes hallucinations, and paranoia).
- It can be a symptom of schizophrenia, mania, depression, delirium, and major neurocognitive disorder (i.e., dementia), and it can be substance or medication-induced.
- Never make the diagnosis of a psychiatric illness before ruling out secondary causes e.g. hallucinations due to hypoglycemia.
- Myxedema madness → severe hypothyroidism, an important feature is psychosis.

Illusion vs hallucination

- Illusion → misinterpretation of an external stimulus
- Hallucination² → perception in the absence of an external stimulus
- Delusion → fixed, false belief contrary to evidence

FOOTNOTES

1. This is called **pseudohallucination** → hallucination that is recognized by the person experiencing it as being unreal.
2. Almost everyone experiences hallucinations from time to time (for example you might think someone is calling you but they are not), the difference is, that in psychosis the patient thinks that the hallucination is real, while a normal person would realize that it is not real and that he was imagining it.

Schizophrenia

- Schizophrenia is a psychiatric disorder characterized by a constellation of abnormalities in thinking, emotion, and behavior.
- There is no single symptom that is pathognomonic, and there is a heterogeneous clinical presentation.
- Schizophrenia is typically chronic, with significant psychosocial and medical consequences to the patient.

◀ Features of Schizophrenia

- Positive symptoms.
- Negative symptoms.
- Disorganization.
- Cognitive deficits.
- Mood symptoms.
- Impairment of function (if there is no impairment of function then it is not a psychiatric illness).

Positive Symptoms	Negative Symptoms	Cognitive Symptoms
<ul style="list-style-type: none"> • Hallucinations. • Delusions. • Bizarre behavior. • Disorganized speech (e.g. circumstantiality¹). <p>(these symptoms tend to respond more robustly to antipsychotics).</p>	<ul style="list-style-type: none"> • Flat or blunted affect • Anhedonia • Apathy • Alogia (poverty of speech) • Lack of interest in socialization <p>(these symptoms are more often treatment resistant & contribute significantly to the social isolation & impaired function of patients).</p>	<ul style="list-style-type: none"> • Impairment in attention • Impairment in executive function • Impairment in working memory <p>(these symptoms lead to poor work and school performance).</p>

◀ Phases of Presentation

Prodromal	Psychotic	Residual
<ul style="list-style-type: none"> • Decline in functioning that precedes the first psychotic episode. • Patient may become socially withdrawn and irritable. • He/she may have physical complaints, declining school/work performance, and/or newfound interest in religion or the occult. 	<ul style="list-style-type: none"> • Perceptual disturbances. • Delusions. • Disordered thought process/content. 	<ul style="list-style-type: none"> • Occurs following an episode of active psychosis. • Marked by mild hallucinations or delusions, social withdrawal, and negative symptoms.

FOOTNOTES

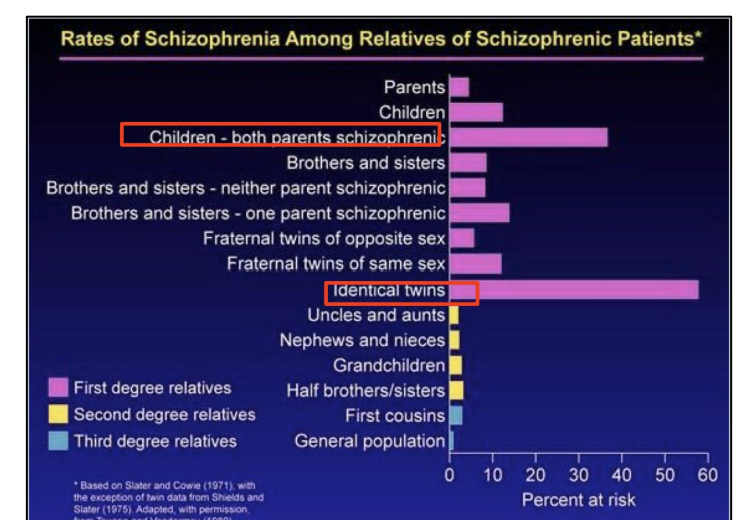
1. A problem with thought process where the point of the conversation is eventually reached but with overinclusion of irrelevant and trivial details.

◀ Diagnosis of Schizophrenia (DSM-5 criteria)

<p>A. Two or more of the following must be present for at least 1 month:</p>	<ol style="list-style-type: none"> 1. Delusions. 2. Hallucinations. 3. Disorganized speech (frequent derailment or incoherence). 4. Grossly disorganized or catatonic behaviour. 5. Negative symptoms (diminished emotional expression or lack of drive 'avolition'). 6. (note → at least one must be 1, 2, or 3).
<p>B. Must cause significant social, occupational, or functional (self-care) dysfunction.</p>	
<p>C. Duration of illness for at least 6 months (including prodromal or residual periods in which the above full criteria may not be met).</p>	
<p>D. Exclusion of schizoaffective & mood disorders.</p>	
<p>E. The disturbance is not due to substance or another medical condition.</p>	
<p>F. If there is a history of autism spectrum disorder or a communication disorder of childhood onset, schizophrenia diagnosis is made only if delusions or hallucinations plus other criteria are present.</p>	

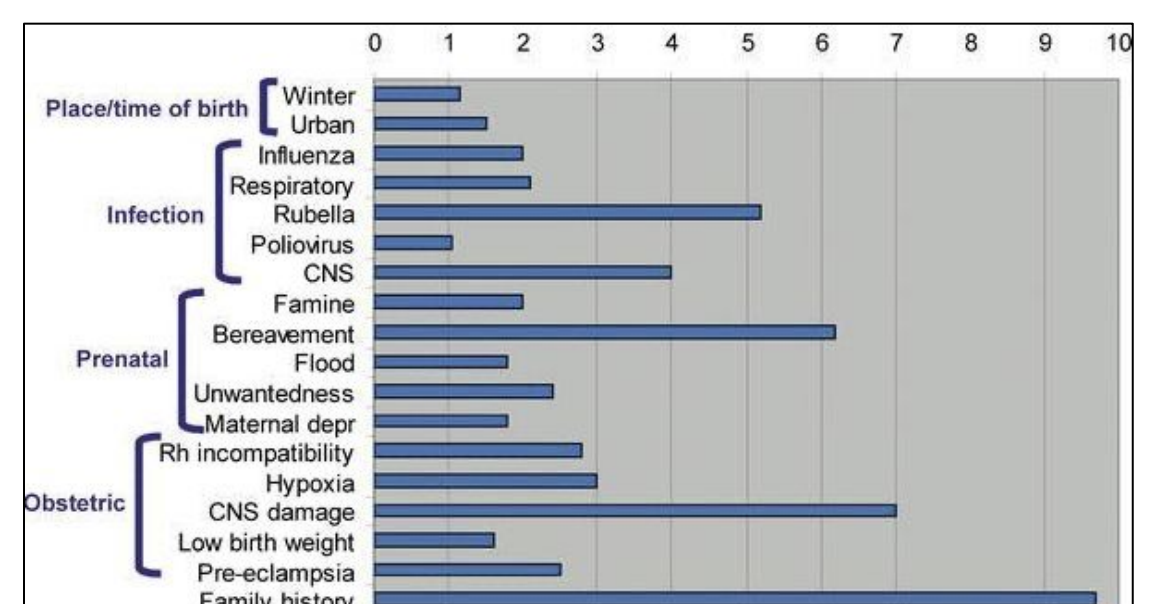
◀ Epidemiology

- It is not a single disease.
- Prevalence 0.6-1.9%.
- Annual incidence of 0.5-5 per 10000.
- Men and women are equally affected but have different presentations and outcomes:
 - Women present in 25-35 years of age (late 20s).
 - Men present in 10-25 years of age (early to mid-20s).
 - Men tend to have more negative symptoms and poorer outcome compared to women.
- 1 in 10 kill themselves.
- Onset in adolescents.
- Strong genetic predisposition:
 - 50% concordance rate among monozygotic (identical) twins.
 - 40% risk of inheritance if both parents have schizophrenia.
 - 12% risk if one first-degree relative is affected.



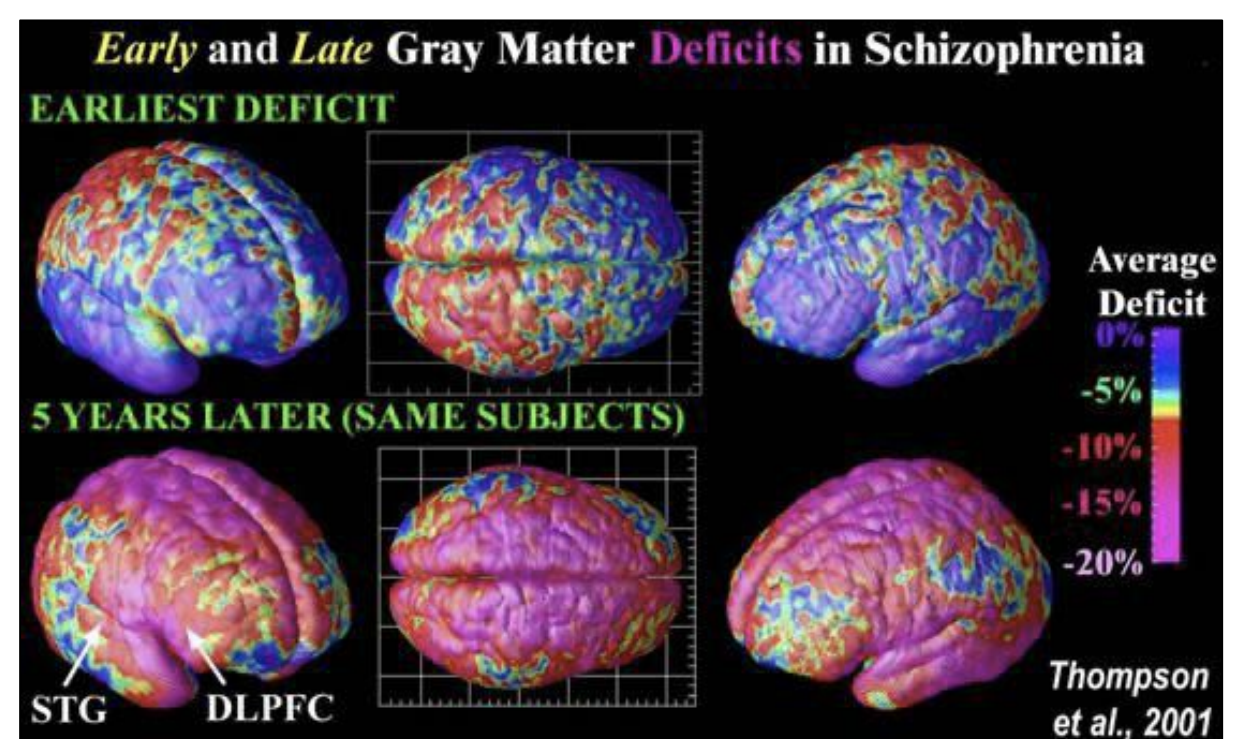
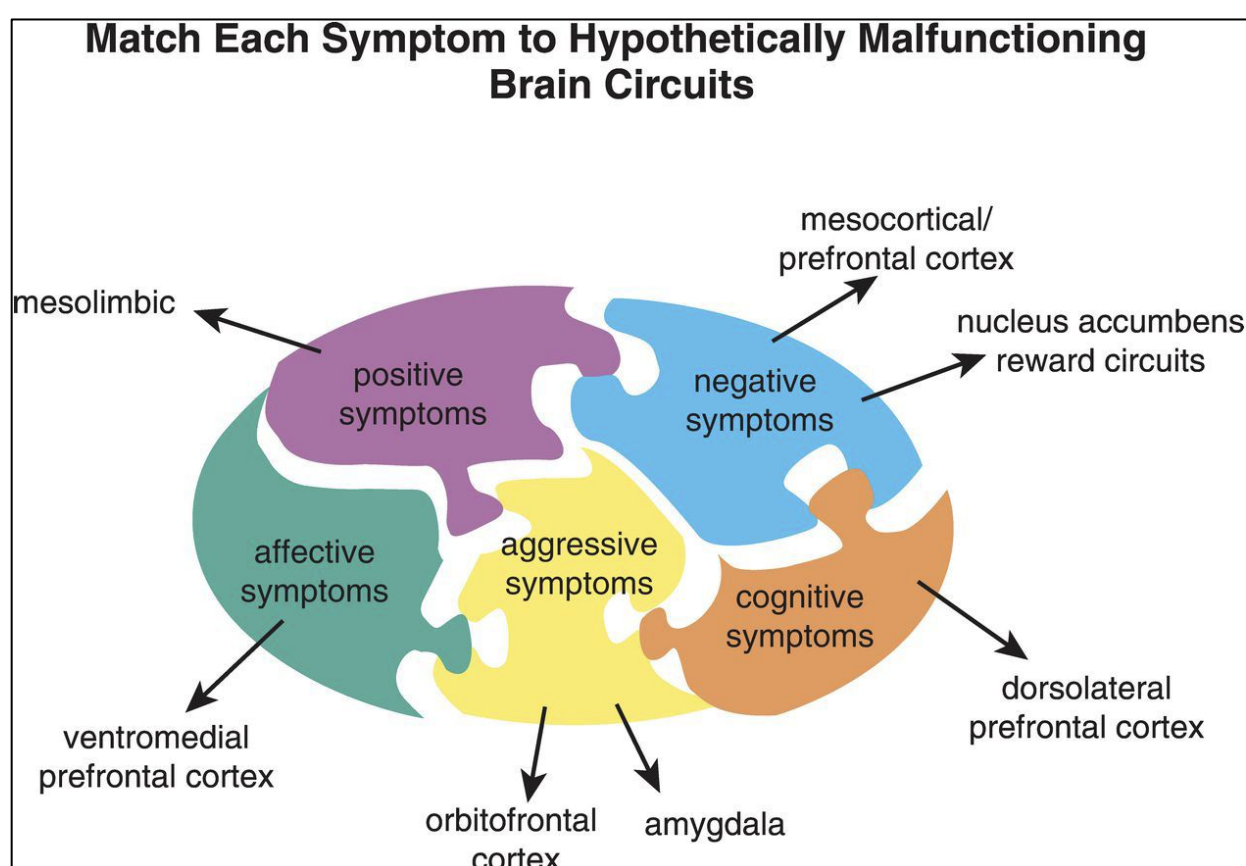
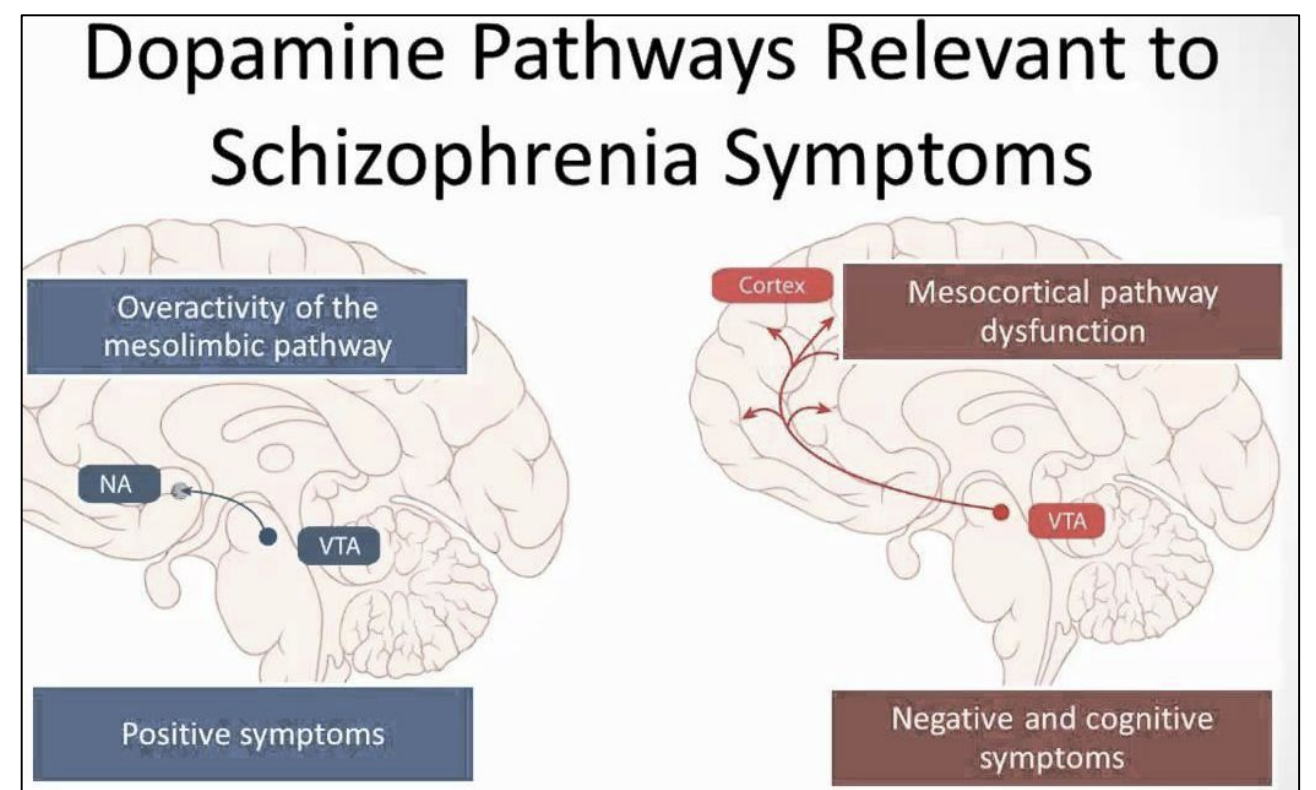
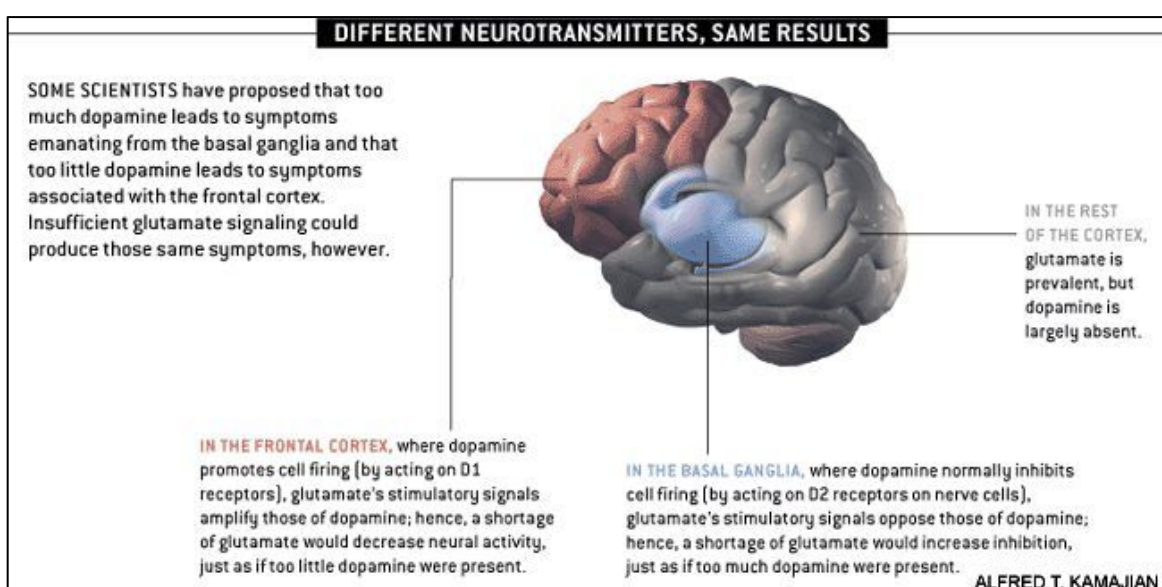
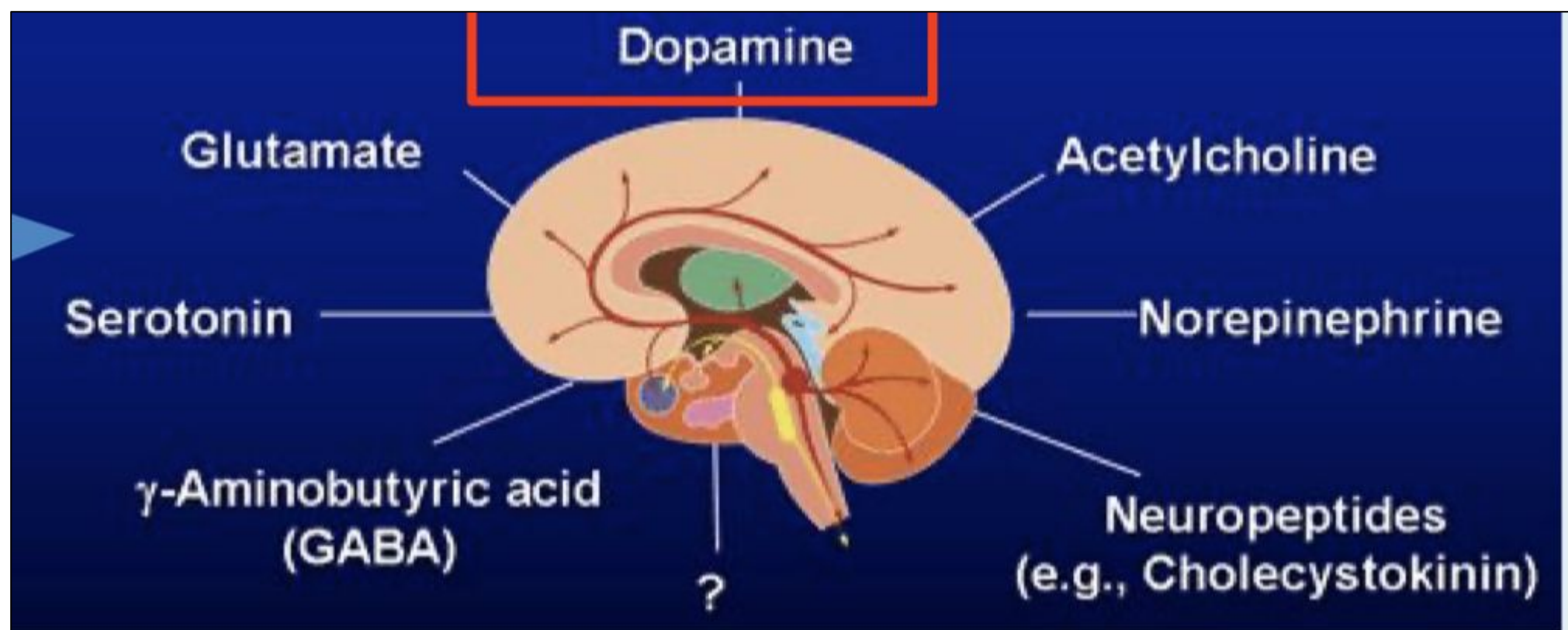
◀ Causes of Schizophrenia

- Etiology is **unknown**.
- Theories:
 - **Stress-diathesis model:**
 - Not a strong theory.
 - Symptoms : vulnerability due to many factors e.g. genetic and social.
 - Biological and psychosocial and environmental.
 - **Genetic factors:**
 - Family studies, twin studies, chromosome.
 - Genetic factors have no role in treatment.
 - Role is only in counseling and prevention and early detection.
 - Identical twins have the most common genetic risk followed by a child with both parents with schizophrenia.
 - **Neurobiology (dopamine hypothesis):**
 - Strongest theory, it is a neurotransmitter problem.
 - Schizophrenia appears to be partly related to increased dopamine activity in certain neuronal tracts.
 - Evidence to support this hypothesis is that most antipsychotics successful in treating schizophrenia are dopamine antagonists.
 - Treatment depends on this theory.
 - Cocaine and amphetamine increase dopamine activity and can cause schizophrenia-like symptoms.
 - Areas of the brain.
 - Theorized dopamine pathways affected in schizophrenia:
 - Prefrontal cortex → inadequate dopaminergic activity; responsible for negative symptoms.
 - Mesolimbic → excessive dopaminergic activity; responsible for positive symptoms.
 - Important dopamine pathways affected by antipsychotics:
 - Tuberoinfundibular → blocked by antipsychotics, causing hyperprolactinemia, which may lead to gynecomastia, galactorrhea, sexual dysfunction, and menstrual irregularities.
 - Nigrostriatal → blocked by antipsychotics, causing parkinsonism/extrapyramidal side effects such as tremor, rigidity, slurred speech, akathisia¹, dystonia², and other abnormal movements.
 - **Neuropathology:**
 - Not strong, it is changes in brain structure.
 - Structures or connections.
 - Limbic system.
 - Basal ganglia.
 - Cerebellum.



1. Feeling of restlessness.
2. A movement disorder in which your muscles contract involuntarily, causing repetitive or twisting movements.

Neurotransmitter Systems Implicated in Schizophrenia



- Positive symptoms → **mesolimbic pathway.**
- Negative symptoms → **mesocortical pathway/prefrontal cortex.**
- Affective symptoms → ventromedial prefrontal cortex.
- Aggressive symptoms → orbitofrontal cortex + amygdala.
- Cognitive symptoms → dorsolateral prefrontal cortex.

- Pink regions indicate deficit areas of the brain.
- As we can see with time the deficit in a schizophrenic patient's brain keep increasing (irreversible) so early treatment is key in preventing this.
- The deficit progresses for 5 years then plateaus, that's why early treatment is better, because once the cognitive function is lost, it is irreversible.

Multiple Mechanisms for Cognitive Dysfunction in Schizophrenia

- Dopamine.
- 5-HT.
- Acetylcholine.
- Neurodegenerative.
- Abnormal connectivity.

Cognitive Deficits Predict Functional Outcomes

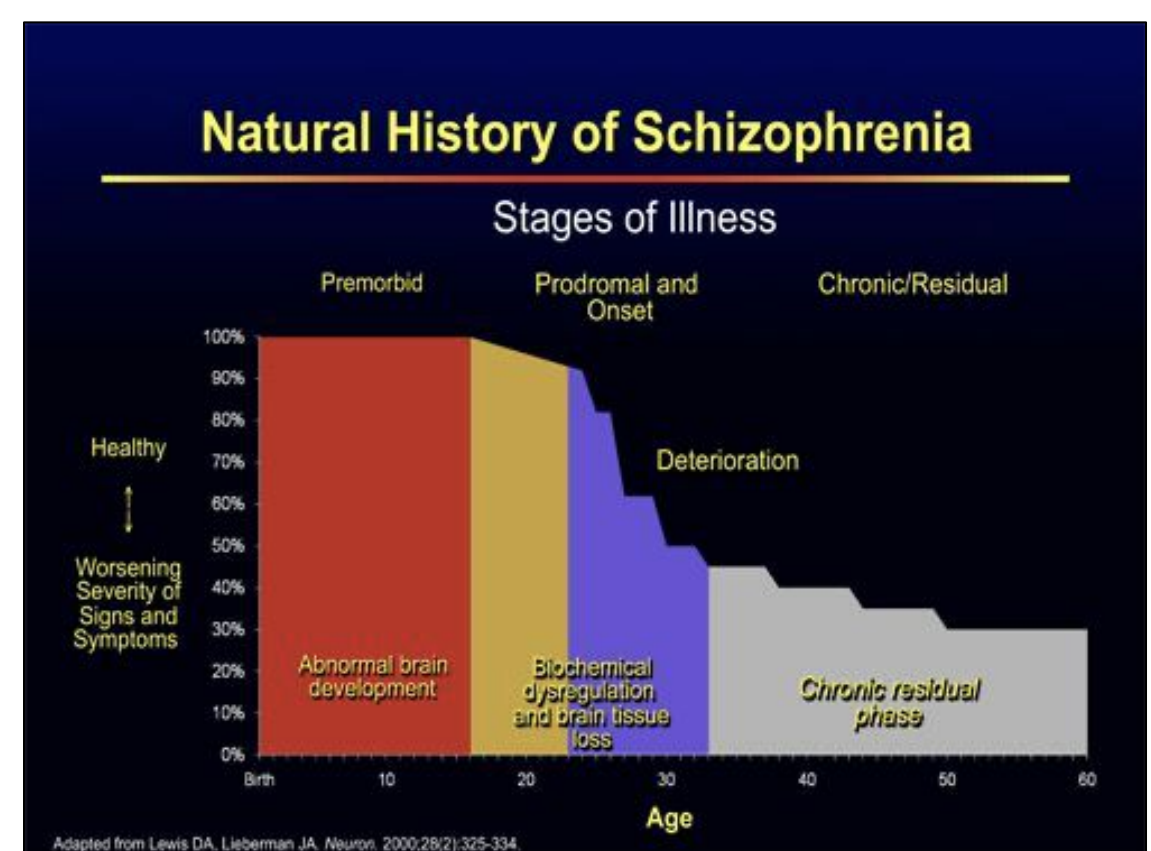
- Learning and memory → school and occupational.
- Executive function → social function.
- Attention → activities of daily living.

Mental State Examination in Schizophrenia

- Appearance and behavior (disheveled appearance).
- Mood, feelings and affect (flat affect).
- Perceptual disturbances (auditory hallucinations, paranoid delusions, ideas of reference).
- Thought process (disorganized thought process).
- Thought content.
- Cognitive function (intact procedural memory and orientation).
- Insight and judgement (poor, lack of insight into their disease).

Course of the Disease

- Acute exacerbations with increased residual impairment.
- Full recovery is very rare.
- Longitudinal course → downhill.



◀ Prognosis

- Even with meds, 40-60% of patients remain significantly impaired after their diagnosis.
- While only 20-30% function fairly well in society.
- About 20% of patients with schizophrenia attempt suicide and many more experience suicidal ideation.

Good Prognostic Factors	Poor Prognostic Factors
<ul style="list-style-type: none"> • Late age of onset. • Acute onset. • Obvious precipitating factors. • Presence of mood component. • Good response to treatment. • Good supportive system (social support). • Positive symptoms. • Female gender. • Few relapses. • Good premorbid functioning. 	<ul style="list-style-type: none"> • Young age of onset. • Insidious onset. • Lack of precipitating factors. • Multiple relapses. • Low IQ. • Poor premorbid personality. • Negative symptoms. • Positive family history (for psychosis or SCZ). • Poor social support. • Male gender. • Many relapses. • Comorbid substance use.

◀ Differential Diagnosis of Psychosis

- **Primary psychiatric disorders:**
 - Schizophreniform disorder.
 - Brief psychotic disorder.
 - Delusional disorder.
 - Schizoaffective disorder.
 - Mood disorders (bipolar presenting with manic episode, or major depression with psychotic features).
 - Delirium/major neurocognitive disorder (dementia).
 - 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.

◀ Treatment

- Pharmacologic treatment consists primarily of antipsychotic medications (given for life in schizophrenia).
- Behavioral therapy attempts to improve patients' ability to function in society.
- Depot⁵ forms of antipsychotics (e.g. risperidone consta) is indicated for poorly compliant patients.
- Electroconvulsive therapy (ECT) for catatonic or poorly responding patients to medications.
- **Insight oriented psychotherapy.**
- **Psychosocial therapies** (social skills training, family oriented therapies, group therapy, individual psychotherapy, assertive community treatment, vocational therapy).
- Pharmacotherapy mainly **antipsychotics** includes:

Gen.	First-gen (Typical) Antipsychotics	Second-gen (Atypical) Antipsychotics
Examples	<ul style="list-style-type: none"> ● Chlorpromazine¹. ● Fluphenazine. ● Haloperidol². ● Perphenazine. ● Thioridazine³. 	<ul style="list-style-type: none"> ● Aripiprazole. ● Asenapine. ● Clozapine⁴. ● Iloperidone. ● Lurasidone. ● Olanzapine. ● Quetiapine. ● Risperidone. ● Ziprasidone.
MOA	<ul style="list-style-type: none"> ● Primarily dopamine (mostly D2) antagonists. 	<ul style="list-style-type: none"> ● Antagonize serotonin receptors (5-HT₂) as well as dopamine (D₄>D₂) receptors.
Effect	<ul style="list-style-type: none"> ● Treat positive symptoms with minimal impact on negative symptoms. 	
ADRs	<ul style="list-style-type: none"> ● Extrapyrimalidal symptoms. ● Neuroleptic malignant syndrome. ● Tardive dyskinesia. <p>(all of them will be explained later on)</p>	<ul style="list-style-type: none"> ● Lower incidence of extrapyramidal symptoms (EPS), but higher risk of metabolic syndrome. ● Less side effects, but higher risk of metabolic syndrome.
Notes		<ul style="list-style-type: none"> ● Medications should be taken for at least 4 weeks before efficacy is determined. ● Clozapine is reserved for pts who have failed multiple antipsychotic trials due to its risk of agranulocytosis. ● Clozapine is used as a 3rd line due to its serious side effects (agranulocytosis, myocarditis, PE, seizures), so before starting it do CBC, EKG, CXR (no need for EEG).

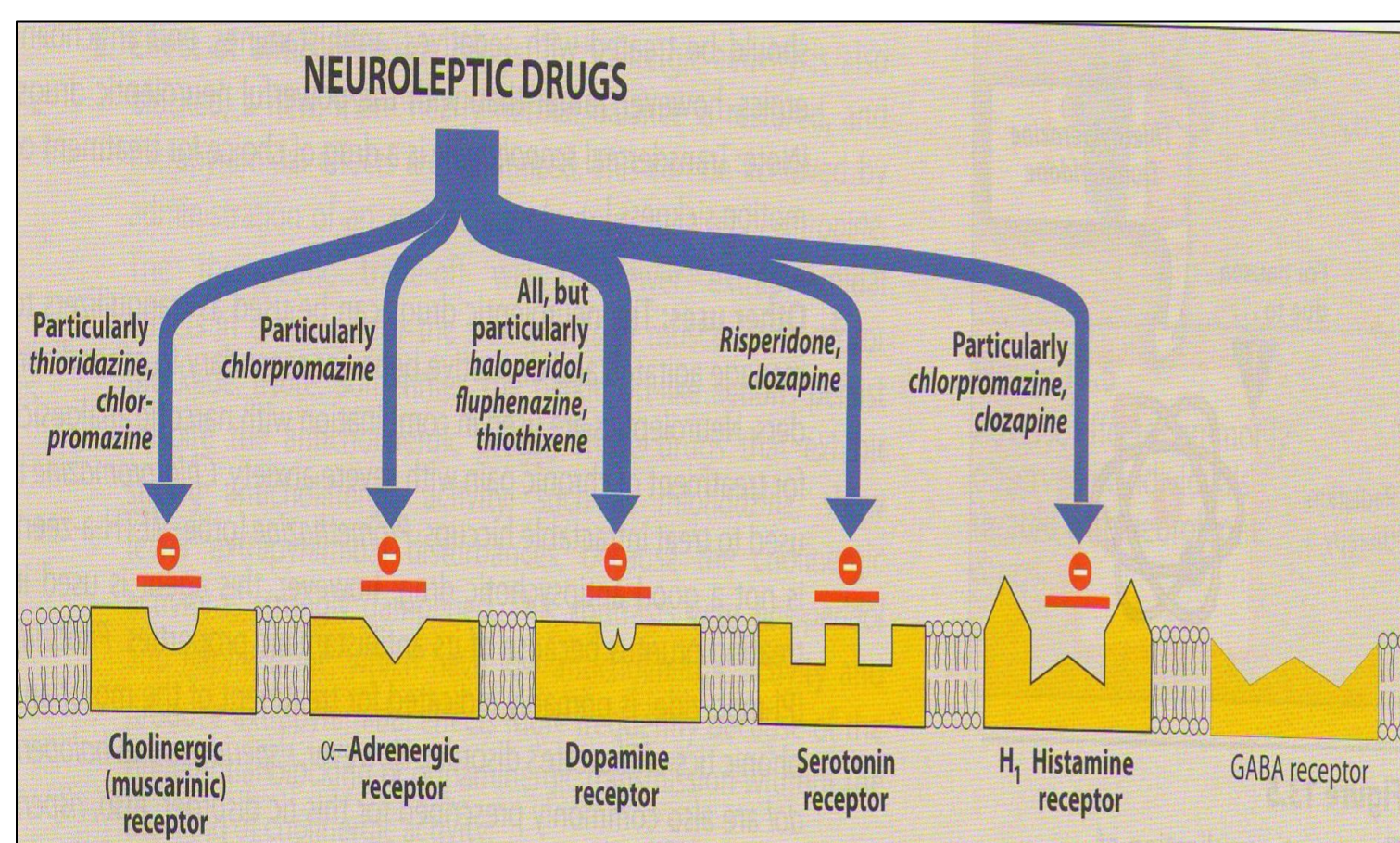
FOOTNOTES

1. Causes corneal deposits.
2. Worst agent for EPS (because of strong dopamine antagonism) → could cause neuroleptic malignant syndrome (NMS).
3. Causes retinal deposits and it is cardiotoxic (torsades de pointes 'quinidine-like').
4. The least one in causing EPS, but **has a risk for causing agranulocytosis (do weekly WBC counts)**. Also causes increased salivation 'wet pillow syndrome' due to 5-HT₂ receptor blockade.
5. Depot injection is a term for an injection formulation that releases slowly over time to permit less frequent administration of a medication.

Antipsychotics

◀ Pharmacologic Actions of Antipsychotics

- **Antipsychotic effect:**
 - Produce emotional quieting and psychomotor slowing.
 - Decrease hallucinations, delusions, and agitation.
 - Mechanism → blockade of dopamine receptors in the mesolimbic system
- **Endocrine effects:**
 - Galactorrhea, amenorrhea, gynecomastia, & impotence
 - Mechanism → prevent dopamine inhibition of prolactin release from pituitary leading to hyperprolactinemia
- **Metabolic changes:**
 - Changes in eating behavior (overeating) and weight gain.
 - Mechanism → blockade of dopamine receptors in the medullary-periventricular pathway
- **Anti-emetic effects:**
 - Mechanism → blockade of dopamine receptors in the chemoreceptor trigger zone (CTZ) of the medulla
- **Anti-cholinergic effects:**
 - Blurred vision
 - Dry mouth
 - Urinary retention
 - Constipation
 - Mechanism → blockade of muscarinic receptors
- **Anti-adrenergic effects:**
 - Postural hypotension (with reflex tachycardia)
 - Impotence
 - Failure of ejaculation
 - Mechanism → blockade of alpha-adrenergic receptors
- **Anti-histamine effects:**
 - Sedation due to H₁ receptor blockade



◀ Side Effects of Antipsychotics

First-gen (Typical) Antipsychotics

Extrapyramidal Effects:

- Dystonia.
- Pseudoparkinsonism.
- Akathisia.
- Tardive dyskinesia.

- Sedation.
- Hyperprolactinemia.
- Reduced seizure threshold.
- Postural hypotension.

Anticholinergic Effects:

- Blurred vision.
- Dry mouth.
- Urinary retention.

- Neuroleptic malignant syndrome.
- Weight gain.
- Sexual dysfunction.
- Cardiotoxicity (prolongation of QTc).

Second-gen (Atypical) Antipsychotics

Olanzapine:

- Weight gain.
- Sedation.
- Glucose intolerance.
- Frank diabetes mellitus.
- hypotension.

Risperidone:

- Hyperprolactinemia.
- Hypotension.
- EPS at high doses.
- Sexual dysfunction.

Amisulpride:

- hyperprolactinemia.
- Insomnia.
- Extrapyramidal effects.

Quetiapine:

- Hypotension.
- Dyspepsia.
- Drowsiness.

Clozapine (Atypical Antipsychotic)^{1,2,3}

Sedation	Glucose Intolerance and Diabetes Mellitus
Hypersalivation	Nocturnal Enuresis
Constipation	Reduced Seizure Threshold (dose-related)
Hypo and Hypertension	Tachycardia
Pyrexia	Weight Gain
Rare serious side effects (neutropenia 3%, agranulocytosis 0.8%, thromboembolism, cardiomyopathy, myocarditis, aspiration pneumonia)	<ul style="list-style-type: none"> ● Note → clozapine is the only drug that is called anti-schizophrenia, it has the highest efficacy but it is used as a last resort (resistant schizophrenia).

FOOTNOTES

1. Do weekly CBC, after 6 months do CBC every 2 weeks, then after 1 year do CBC every month.
2. Clozapine is the only antipsychotic that is in category B (pregnancy drug categories), other antipsychotics are in category C (still clozapine is last-line treatment in pregnant women).
3. Clozapine is used in resistant schizophrenia, meaning after failure of 2 trials of different meds (usually 1 typical and 1 atypical) where we start the medication, assess over 6-8 weeks and keep increasing the dose until symptoms are controlled or the maximum dose is reached, if the maximum dose is reached and the symptoms are still not controlled switch to a different medication, if this second medication also fails then it is labeled as resistant schizophrenia and clozapine can be used in this case.

◀ Extrapyramidal Symptoms

- Occur especially with the use of high-potency first-generation antipsychotics.
- They are the following:
 - Dystonia (spasms) of face, neck and tongue.
 - Parkinsonism (resting tremor, rigidity, bradykinesia).
 - Akathisia (feeling of restlessness).
- **Treatment:**
 - Anticholinergics (benztropine, diphenhydramine).
 - benzodiazepines/beta-blockers (specifically for akathisia).

◀ Anti-cholinergic Symptoms

- Occur especially with low-potency first-generation antipsychotics and atypical antipsychotics).
- They are the following:
 - Dry mouth.
 - Constipation.
 - Blurred vision.
 - Hyperthermia.
- **Treatment:**
 - As per symptom (eye drops, stool softeners etc).

◀ Metabolic Syndrome

- Occur with second generation antipsychotics.
- A constellation of conditions (high BP, high blood sugar levels, excess body fat around the waist, abnormal cholesterol levels), they occur together increasing the risk for cardiovascular disease, stroke and T2DM.
- **Treatment:**
 - Switch to a first-gen antipsychotic or a more 'weight-neutral' second-gen antipsychotic such as aripiprazole or ziprasidone.
 - Metformin.
 - Monitor lipids and blood glucose levels, refer to primary care, encourage appropriate diet, exercise, and smoking cessation.

◀ Tardive Dyskinesia

- More likely with first-gen antipsychotics.
- They may occur with atypical antipsychotics but it is less common.
- Tardive means 'late' - months to years after drug initiation.
- Chorea¹ movements, usually seen in the face, tongue and head (painless).
- **Treatment:**
 - Discontinue or reduce the medication & consider substituting an atypical antipsychotic.
 - VMAT-2 (vesicular monoamine transporter-2) inhibitors (valbenazine, tetrabenazine).

◀ Neuroleptic Malignant Syndrome (NMS)

- Uncommon but potentially fatal complication of antipsychotic.
- Typically occurs soon after an antipsychotic is started or dose is increased but may occur late.
- **Risk factors:**
 - Depot antipsychotics.
 - IM administration.
 - Rapid increase in dose of antipsychotic.
 - High dose of antipsychotic.
 - Dehydration, malnutrition, iron deficiency, underlying brain abnormalities and agitation.
- **Diagnostic triad:**
 - Fever $\geq 38^{\circ}\text{C}$ (100.4 $^{\circ}\text{F}$), Muscle rigidity, Mental status changes.
- Autonomic instability and hyperthermia are the major causes of morbidity and mortality.
- **Common lab abnormalities include:**
 - High CPK.
 - Myoglobinuria.
 - High WBC.
 - Metabolic acidosis.
- Ensure other medical causes have been excluded.
- **Management:**
 - Discontinue antipsychotics, lithium and dopamine blocking antiemetics.
 - Supportive care (most commonly in an ICU).
 - First step is to stop antipsychotics and treat hyperthermia aggressively.

Receptor Blockade & Antipsychotic Side Effects	
Receptor Type	Side Effects
D2 (dopamine)	EPS, prolactin elevation
M1 (muscarinic)	Cognitive deficits, dry mouth, constipation, increased heart rate, urinary retention, blurred vision
H1 (histamine)	Sedation, weight gain, dizziness
alpha-1	Orthostatic hypotension
5-HT2A	anti-EPS (extrapyramidal symptoms)
5-HT2C	Satiety blockade

Other Psychotic Disorders

◀ Brief Psychotic Disorder

- Meets diagnostic criteria A for schizophrenia but duration is less than 4 weeks (1 day to 1 month).
- **Diagnosis and DSM-5 criteria:**
 - Psychotic symptoms as in schizophrenia; however the symptoms last from 1 day to 1 month.
 - There must be eventual full return to premorbid level of functioning.
 - Symptoms must not be due to the effects of substance or another medical condition.
- **Prognosis:**
 - High rate of relapses, but almost all completely recover.
- **Treatment:**
 - Brief hospitalization (usually required for workup, safety, and stabilization).
 - Supportive therapy.
 - Course of antipsychotics (for 1 month) for psychosis and/or benzos for agitation.

◀ Schizophreniform Disorder

- Meets diagnostic criteria A for schizophrenia but duration is from 1 month to 6 months, it is rare.
- **Diagnosis and DSM-5 criteria:**
 - Same criteria as schizophrenia but symptoms have lasted b/w 1-6 months (in schizophrenia, symptoms must be present for > 6 months).
- **Prognosis:**
 - 1/3 of patients recover completely.
 - Two thirds progress to schizoaffective disorder or schizophrenia.
- **Treatment:**
 - Hospitalization (if necessary).
 - 6-month course of antipsychotics and supportive psychotherapy.

◀ Schizoaffective Disorder

- **Has to have all the following three:**
 - Psychosis for more than 6 months (which meets the diagnostic criteria for schizophrenia).
 - Has affective mood disorder (bipolar or depression) for at least 20-25% of psychosis duration.
 - Two weeks of pure psychosis (w/o mood symptoms).
- **Diagnosis and DSM-5 criteria:**
 - Meets criteria for either a major depressive or manic episode during which psychotic symptoms consistent with schizophrenia are also met.
 - Delusions or hallucinations for 2 weeks in the absence of mood disorder symptoms (this criterion is necessary to differentiate schizoaffective from a mood disorder with psychotic features).
 - Mood symptoms present for a majority of psychotic illness .
 - Symptoms not due to the effects of a substance or another medical condition.
- **Prognosis:**
 - Worse with premorbid adjustment, slow onset, early onset, predominance of psychotic symptoms, long course, and family history of schizophrenia.
- **Treatment:**
 - Hospitalization (if necessary) and supportive psychotherapy.
 - Medical therapy → antipsychotics, mood stabilizers, antidepressants, or ECT.

◀ Delusional Disorder

- Main component is delusion (+- mild hallucinations that are related to delusion topic).
- Impairment of function is only in the area related to the delusion (in other areas patients are functioning normally).
- **Diagnosis and DSM-5 criteria:**
 - One or more delusions for at least 1 month.
 - Does not meet criteria for schizophrenia.
 - Functioning in life is not significantly impaired, and behavior not obviously bizarre.
- **Prognosis:**
 - Better than schizophrenia with treatment.
 - >50% full recovery.
 - >20% symptoms.
 - <20% no change.
- **Treatment:**
 - Antipsychotics (recommended despite somewhat limited evidence).
 - Supportive therapy.

Schizophrenia	Delusional Disorder
<ul style="list-style-type: none"> ● Bizarre¹ or nonbizarre² delusions. ● Daily functioning significantly impaired. ● Must have 2 of the following: Delusions. Hallucinations. Disorganized speech. Disorganized behavior. Negative symptoms. 	<ul style="list-style-type: none"> ● Usually nonbizarre delusions. ● Daily functioning not significantly impaired. ● Does not meet the criteria for schizophrenia.

◀ DIP (Drug Induced Psychosis)

- **DSM-5:**
 - Which one started first (drugs or psychosis).
 - If the patient started drugs then developed psychosis → stop the drug then check in 1 month, if symptoms got better within 1 month then it is DIP (if it doesn't get better within 1 month, then the cause is something else).
- The worst drug for schizophrenia is hash (i.e. cannabis حشيش), because it is associated with an increased risk of developing schizophrenia (not only psychosis) (50 joints of hash have a 6 fold increase in the risk of schizophrenia).

◀ MIP (Medical Condition Induced Psychosis)

- A medical condition causing psychosis (for example, parkinson's, epilepsy, stroke, thyroid conditions etc).
- MIP has a longer duration unlike medical induced delirium which comes acutely.

1. A bizarre delusion is a false belief that is impossible to be true. Example: 'aliens are spying on me through a Wi-Fi connection in my brain.'
 2. A non-bizarre delusion is a false belief that is plausible but is not true. Example: 'the neighbors are spying on me by reading my email.'

◀ MDD With Psychotic Features

- MDD or bipolar (psychosis is more common with mania rather than depression).
- Which one started first? (mood symptoms or psychosis).
 - If mood symptoms started first then psychosis → mood disorder with psychotic features.
 - If psychosis started first then mood symptoms → then it is one of the previous diagnoses depending on duration (brief psychotic disorder, schizophreniform, schizophrenia, schizoaffective, DIP, MIP etc).

◀ Summary

- **Prognosis from best to worst:**
 - Mood disorder with psychotic features (best).
 - Schizoaffective disorder.
 - Schizophreniform disorder.
 - Schizophrenia (worst).
- **Time course:**
 - < 1 month → brief psychotic disorder.
 - 1-6 months → schizophreniform.
 - > 6 months → schizophrenia.
- **Note:**
 - Do not confuse these psychotic disorders with schizotypal and schizoid personality disorders. (similar names, but these are personality disorders not psychotic disorders).
 - **Schizotypal personality disorder** (will be discussed in personality disorders lecture):
 - Paranoid, odd or magical beliefs, eccentric, lack of friends, social anxiety.
 - Criteria for overt psychosis are not met.
 - **Schizoid personality disorder** (will be discussed in personality disorders lecture):
 - Solitary activities.
 - Lack of enjoyment from social interactions.
 - NO PSYCHOSIS.

Quiz

1. Male with schizophrenia on medications, was brought to the emergency department because of 2 days history of muteness, rigid limbs and clouding consciousness. What is the most important initial step to reach the diagnosis?
 - a. Brain MRI
 - b. Brain CT scan
 - c. Check CPK levels
 - d. Chest X-ray
2. Which of the following is a good prognostic factor of schizophrenia?
 - a. Absence of hallucinations
 - b. Insidious onset
 - c. Early age of onset
 - d. Presence of a precipitating factor
3. A patient comes to the emergency because he had low consciousness and muscle rigidity so what is the finding in neuroleptic malignant syndrome?
 - a. Low K⁺
 - b. Low Na⁺
 - c. High neutrophils
 - d. Low muscle enzymes
4. Which of following statements is applied on schizoaffective more than schizophrenia?
 - a. Presence of hallucinations
 - b. Presence of delusions
 - c. More responsive to antipsychotic medications
 - d. Poorer prognosis than schizophrenia
5. Patient on anti-psychotic medication cannot still on bed or chair and tell you I want to relax but I can't. what is the treatment?
 - a. Benzodiazepines
 - b. Procyclidine
 - c. Dopamine agonist
 - d. SSRI
6. A 40 years old man has a 7 years history of persistent firmly held belief that he has been followed by his boss at work through a hidden camera. But he doesn't have any hallucinations. What is the diagnosis?
 - a. Delusional disorder
 - b. Schizophrenia
 - c. Bipolar disorder
 - d. Schizoaffective disorder

Answer Key: 1) C, 2) D, 3) C, 4) C, 5) A, 6) A

Quiz

1. A 41-year-old woman has a history of continuous auditory hallucinations for 9 months of which she had intermittent episodes of disturbed mood, what is the most likely diagnosis
 - a. schizophrenia
 - b. Schizoaffective disorder
 - c. Schizophreniform disorder
 - d. Schizoid personality disorder
2. While evaluating a 26-year-old woman, she indicated that she feels as if she heard voices of her relatives inside her head without their presence. What is the psychopathology?
 - a. Pseudohallucination
 - b. de-realization
 - c. illusions
 - d. hallucinations
3. 33 years old woman had one major depressive episode and 2 manic episodes during the last 4 years. During the past 5 years, she was complaining from auditory hallucinations. What's the diagnosis?
 - a. Bipolar disorder
 - b. Delusional disorders
 - c. Schizoaffective disorder
 - d. Schizophreniform disorder
4. A 44-year-old man has intermittent muscle rigidity, muteness, immobility and unresponsiveness for 9 months. What is the most likely diagnosis?
 - a. Schizoaffective disorder
 - b. Delusional disorder
 - c. schizophrenia
 - d. Acute dystonia
5. A 67 years old patient being treated for his schizophrenia developed painful muscle spasms and tongue protrusion. What is the mechanism of action of the drug used to manage this case?
 - a. Dopaminergic
 - b. Anti-dopaminergic
 - c. GABA stimulation
 - d. Anticholinergic
6. Patient presented with a case of Resistant psychosis (not responsive to other 2nd gen antipsychotics), what is the treatment?
 - a. mirtazapine
 - b. fluvoxamine
 - c. clozapine
 - d. buspirone

Answer Key: 1) B, 2) A, 3) C, 4) C, 5) B, 6) C

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