Chapter 110 – Thought Disorders
Episode Overview

1. **List 10 medical disorders that may cause psychosis (Box)**
2. **List 10 pharmacologic agents that may cause acute psychosis (Box)**
3. **Describe the DSM V diagnostic criteria for schizophrenia (Box)**
4. **List 4 agents used for rapid tranquilization and their usual doses (Table)**
5. **List 6 factors that should alert to a medical cause of psychosis**
6. **List factors differentiating between organic and functional psychosis**
7. **Define brief psychotic disorder, schizophreniform disorder, mood disorder with psychotic features, schizoaffective disorder, Ganser's syndrome, delusional disorder**
8. **List 4 indications for hospitalization of psychotic patient**

Wisecracks:

1. **What is the difference between typical and atypical neuroleptics at the receptor level**
2. **List 8 adverse effects of neuroleptic drugs**

Rosens in Perspective

Today we're going through the thought disorders:

- This is also known as **Psychosis**
    - This can be precipitated by psychiatric, underlying medical, and toxicologic etiologies
    - A good history and physical are key to avoiding unnecessary diagnostic testing, rather than panels of routine tests. Check out EMC EP 85.
- Consider nonphysical intervention first when appropriate, but chemical sedation and physical restraint are immediately necessary for patients who demonstrate aggressive and dangerous behavior
- Appropriate disposition depends on the etiology of the underlying psychosis, response to treatment, and patient and community safety considerations and, more often than not, includes psychiatric consultation.

Welcome to the first of six psychiatry chapters!

> *"Patients with a history of mental illness have a higher rate of emergency department (ED) visits then the general population. Patients with at least one primary psychiatric visit to an ED were over four times more likely to become frequent ED users compared to patients with none.*
>
> *The emergency clinician's role is to first prevent and control violent and disruptive behavior and then determine if the underlying etiology of the thought disorder is functional (psychiatric) versus organic (medical) in nature. Functional causes include:*
>
> - *Schizophrenia and schizophrenia-like illness,*
> - *Mania or mood disorder-associated psychosis.*
>
> *Organic causes can mimic the psychotic behavior of functional psychosis. Medication effects, substance abuse, and certain medical disorders need to be excluded before psychosis can be attributed to an underlying psychiatric illness."* – Rosens 9th Edition, Thought Disorders

[1] List 10 medical disorders that may cause psychosis

BOX 100.1 Medical Disorders That May Cause Acute Psychosis

METABOLIC DISORDERS • Hypercalcemia • Hypercarbia • Hypoglycemia • Hyponatremia • Hypoxia	**INFLAMMATORY DISORDERS** • Sarcoidosis • Systemic lupus erythematosus • Temporal (giant cell) arteritis	**ORGAN FAILURE** • Hepatic encephalopathy • Uremia
NEUROLOGIC DISORDERS • Alzheimer's disease • Cerebrovascular disease • Encephalitis (including HIV infection) • Encephalopathies • Epilepsy • Huntington's disease • Multiple sclerosis • Neoplasms • Normal-pressure hydrocephalus • Parkinson's disease • Pick's disease • Wilson's disease	**ENDOCRINE DISORDERS** • Addison's disease • Cushing's disease • Panhypopituitarism • Parathyroid disease • Postpartum psychosis • Recurrent menstrual psychosis • Sydenham's chorea • Thyroid disease	**DEFICIENCY STATES** • Niacin • Thiamine • Vitamin B12 and folate

"Psychosis"

- **Postpartum**
- **Sarcoid**
- **thYroid**
- **Calcium and Carbon (high)**
- **HypoNa/02/Glycemia**
- **SLE**
- **Itis - encephalltis**
- **Substrate deficiency states**
    - **Niacin, thiamine, Vit b12.**

[2] List 10 pharmacologic agents that may cause acute psychosis (Box)

BOX 100.2 Pharmacologic Agents That May Cause Acute Psychosis

ANTIANXIETY AGENTS • Alprazolam • Chlordiazepoxide • Clonazepam • Clorazepate • Diazepam • Ethchlorvynol	**ANTIBIOTICS** • Isoniazid • Rifampin	**ANTICONVULSANTS** • Ethosuximide • Phenobarbital • Phenytoin • Primidone
ANTIDEPRESSANTS • Amitriptyline • Doxepin • Imipramine • Protriptyline • Trimipramine	**CARDIOVASCULAR DRUGS** • Captopril • Digitalis • Disopyramide • Methyldopa • Procainamide • Propranolol • Reserpine	**DRUGS OF ABUSE** • Alcohol • Amphetamines • Cannabis • Cocaine • Hallucinogens • Opioids • Phencyclidine • Sedative-hypnotics
MISCELLANEOUS DRUGS • Antihistamines • Antineoplastics • Bromides • Cimetidine • Corticosteroids • Disulfiram • Heavy metals		

Acute Psychosis:

- Antihistamines
- Cocaine, cannabis, corticosteroids
- Under the table hallucinogens
- Tranquilizers!!! (diazepam, clonazepam)
- ETOH

- Propranolol
- Sedatives
- phenYtoin
- Captopril
- Heavy metals
- Opioids
- SteroIdS

[3] Describe the DSM V diagnostic criteria for schizophrenia (Box)

"**Schizophrenia often manifests as a thought disorder or psychosis**…..Although the etiology of schizophrenia is multifactorial, it has a substantial **genetic component** with 80% of the variation in the trait of the disease attributed to genetic factors.

> ***Alterations in the dopaminergic, serotonergic, cholinergic, and glutamatergic dependent pathways have all been implicated in the pathophysiology of schizophrenia****…..Schizophrenia is also postulated to be related to* ***environmental factors*** *interacting with neurodevelopmental factors thereby increasing risk of the disease. Stress, perinatal hypoxia, poor nutrition, infections, vitamin D deficiency, and zinc deficiency have all been associated with the development of schizophrenia. Evidence supports the existence of a progressive continuum of psychotic illness, beginning with unipolar depression and progressing to bipolar disease, schizoaffective psychosis, and finally schizophrenia."* - Rosen's 9th Edition

Schizophrenia has some core psychopathological features:

- +ve symptoms
  - Hallucinations (AVOGS)
  - Delusions
    - fixed, false beliefs that persist in the face of overwhelming contradictory evidence.
    - can be bizarre and clearly implausible, or they can be reasonable and understandable yet untrue.
  - Disorganization
    - disorganization of behavior and thinking
    - tangentiality and circumstantiality
- -ve symptoms
  - Cognitive impairment
    - difficulties with attention, memory, reasoning, verbal comprehension, and decision-making
  - Negative symptoms
    - blunted affect, emotional withdrawal, social withdrawal, poor rapport with other people, difficulty with abstract thinking, loss of spontaneous conversation, and stereotyped thinking.

[4] List 4 agents used for rapid tranquilization and their usual doses

Benzodiazepines and antipsychotics are the two medications most commonly used for chemical restraint.

DRUG	USUAL ADULT DOSE	ADVERSE EVENTS
Midazolam	2.5 to 5 mg IM (rapid onset)	• Respiratory depression • Oversedation • Hypotension • Paradoxical excitation reaction in patients with organic brain disease
Lorazepam	1 to 2 mg PO or IM	

Diazepam	5 to 10 mg PO or IM (longer acting)	
Haloperidol	5 to 10 mg PO or IM	• Increased mortality risk in elderly dementia-related psychosis • Caution in prolonged QT or history of neutropenia •
Ziprasidone	10 to 20 mg PO or IM	
Olanzapine	10 mg PO or IM	

[5] List 6 factors that should alert to a medical cause of psychosis

1. New onset of symptoms
2. Acute change in mental status
3. Recent fluctuation in behavioural symptoms
4. Onset > 50 yrs old
5. Onset AFTER admission to medical care setting
6. Non-auditory hallucinations (visual)
7. Lethargy
8. Abnormal vital signs
9. Poor performance on cognitive function testing - not oriented to person, place, time.

[6] List factors differentiating between organic and functional psychosis

Organic	**Functional psychosis**
New onset of symptoms	**Hx of previous psychosis/mental illness**
Acute change in mental status	**Insidious onset**
Age > 50 of onset	**Late teens - 20s**
Recent fluctuation in behavioural symptoms; onset after medical admission	**Family history of psychosis**
Visual hallucinations	**Auditory hallucinations**
Poor performance on cog. Function tests - orientation to person, place, time	**Disorganized thought content, but oriented.** **No fluctuation of LOC** **Delusions**
Lethargy	**Erratic behaviour** **Pressured speech or guarded affect**
Abnormal vital signs*	**Normal vitals, normal glucose****

*Greater emphasis should be placed on identifying a clinical toxidrome and history of [drug] use when attempting to determine if drugs and medications are contributing to the symptoms of psychosis.

[7] Define brief psychotic disorder, schizophreniform disorder, mood disorder with psychotic features, schizoaffective disorder, Ganser's syndrome, delusional disorder

- **"Brief psychotic disorder"** involves the sudden onset of psychotic symptoms in response to major stress and lasts from several days up to 1 month.
    - ***Peripartum psychosis*** is included under the diagnosis of brief psychotic disorder.
    - Patients with personality disorders may occasionally develop brief psychotic episodes especially under stress. None of the aforementioned disturbances can be attributable to the effects of a substance or another medical condition.
- **Schizophreniform disorder** have similar symptoms to a brief psychotic disorder and last from longer than 1 month to less than 6 months. Up to one-third of patients with schizophreniform disorder can recover within 6 months; the other two-thirds develop clinical schizophrenia.
- Patients with **mood disorders may develop psychotic symptoms as part of their disease. If psychotic symptoms develop during periods of mood disturbances**, the diagnosis of mood disorder with psychotic features applies.
- If symptoms consistent with schizophrenia persist for more than 2 weeks in the absence of prominent mood episode, the diagnosis of schizoaffective disorder is made.
- Delusional disorder
    - One or more delusions that are present for longer than 1 month and the criteria for schizophrenia have not been met.
    - Patients may believe famous people are in love with them (erotomanic) or that they have extraordinary powers or possess a special relationship with a deity or famous person (grandiose type).
    - Other common delusions are of sexual partners being unfaithful (jealous type), that they are being malevolently treated (persecutory type), or that they have some physical defect or medical condition (somatic type).
    - Function is not typically severely impaired, and behavior may not be bizarre apart from the impact of the delusions. Individuals may appear and behave normally if not actively discussing delusions, but social, marital, work, and legal problems can result from delusional beliefs." - Rosen's
- **Ganser's syndrome:**
    - Is a Factitious Disorder, aka as prison psychosis, where a person behaves as though they have a psychotic disorder

[8] List 4 indications for hospitalization of psychotic patient

- Actively suicidal
- Dangerous to others
- Possess severe mental debilitation precluding self-care
- Patient with a first psychotic episode

"psychiatric consultation can help confirm safety for discharge, help facilitate inpatient admission, and aid in outpatient follow-up" – Rosen's 9th Edition, chapter on Thought Disorders

Wisecracks:

[1] What is the difference between typical and atypical neuroleptics at the receptor level

Typical:

- The mechanism of action of all first-generation antipsychotics (FGAs) appears to be **postsynaptic blockade of brain dopamine D2 receptors**. The nonspecific localization of FGA dopamine binding throughout the central nervous system is consistent with their risk of movement disorders and prolactinemia.

Atypical:

- These do block the postsynaptic D2 receptors as well…they correlate with reduced risk of EPS include "loose" D2 receptor binding with rapid dissociation rates and preferential binding of drugs to receptors in limbic and cortical brain regions rather than striatal areas. **None of these hypotheses has been fully confirmed**, and the most important message for the clinician is that the pharmacology of these drugs is complex and likely to result in some **variability of side effect risk and pharmacokinetics from patient to patient.**

Additional receptor activities with SGAs include blockade or partial agonist activity at muscarinic, alpha-adrenergic, and histaminic receptors, with resultant anticholinergic, hypotensive, sedative, and metabolic side effects." - from UpToDate

[2] List 8 adverse effects of neuroleptic drugs

These side effects are variable depending on the agent - some 2nd gen antipsychotics are just as bad, if not worse than 1st gen agents.

- QTc prolongation
- Extrapyramidal symptoms
- Tardive dyskinesia
- Anticholinergic side effects
- Neuroleptic malignant syndrome
- Orthostatic hypotension
- Sedation
- Prolactin elevation
- Hypercholesterolemia, weight gain, diabetes - metabolic syndrome

You should know about CLOZAPINE:

- Clozapine also causes granulocytopenia or agranulocytosis in approximately 1 percent of patients requiring regular blood cell count monitoring. Clozapine has been associated with excess risk of myocarditis and venous thromboembolic events including fatal pulmonary embolism. - *UpToDate*

Let's do a quick review….

What is the most common adverse effect seen with neuroleptic agents?
A. Akinesia
B. Dystonia
C. Orthostatic hypotension
D. Pseudoparkinsonism
E. Tardive dyskinesia

Answer: B. Dystonia occurs in 1% to 5% of this patient population. The reaction occurs because of a dopaminergic pathway disruption with a resulting cholinergic predominance. Anticholinergics should be administered parenterally (Benadryl 25 to 50 mg intravenous [IV] or Cogentin 1 or 2 mg IV), followed by 48 to 72 hours of oral follow-up treatment to prevent recurrence. Patients may experience tongue protrusion (buccolingual crisis), upward eye deviation (oculogyric crisis), back arching (opisthotonus), and, rarely, laryngospasm. Symptoms may lessen with voluntary muscle action and increase with stress." - from Rosen's 9th Edition, on Thought Disorders

Review part II…

A 27-year-old known schizophrenic is brought to the emergency department (ED) for altered mental status. His only known medication is clozapine, which he started 4 weeks ago with subsequent dose increases. He has no other past history. Physical examination is remarkable for a muscular black man who is somnolent and diaphoretic. He withdraws all extremities stiffly and grimaces to pain. Vital signs are temperature, 40.5° C; heart rate, 146 beats per minute; blood pressure, 205/125 mm Hg; and respiratory rate 28 breaths per minute. Rectal examination is guaiac positive. Foley placement shows brown urine. What should be the next diagnostic maneuver?

A. Creatine kinase level
B. Head computed tomography (CT) scan
C. Lumbar puncture
D. Thyroid hormone levels
E. Urine drug screen

Answer: A. Neuroleptic malignant syndrome is an idiopathic condition clinically similar to serotonin syndrome and malignant hyperthermia. Milder cases may be confused with serotonin syndrome. Severe cases, related to possible hypothalamic dysfunction, present with fever, rigidity, altered mental status, autonomic instability, and elevated creatine phosphokinase (CPK) and possibly rhabdomyolysis. It is seen with both typical and atypical antipsychotics and generally occurs in the first few weeks of treatment. Complications may include hepatic/renal failure, gastrointestinal (GI) hemorrhage, and respiratory failure. Severe cases may require intravenous dantrolene or dopamine agonists (eg, bromocriptine). - From Rosen's

---

Shout out: https://emergencymedicinecases.com/medical-clearance-psychiatric-patient/
Episode 85
"*Evaluation for medical stability*"