Overview and Aetiology of Psychotic Disorders

Prepared for University of Sydney Medical Students

Authors: Dr Nash, Dr Harris and Prof Boyce
Psychosis

Definition: A distortion or loss of contact with reality, without any clouding of consciousness.

- Psychosis is a general term marked by (not necessarily all):
  - Hallucinations & Delusions
  - Disorganisation (Formal thought disorder)
  - Loss of insight
  - Negative symptoms
  - Cognitive impairment
  - Excitement / Aggression
Range of diagnoses

- Schizophrenia spectrum
- Paranoid disorder
- Organic
  - Dementias
  - Substance induced
  - Other medical condition

- Mood disorders
  - Bipolar disorder
  - Major depression

- Other
  - Cultural forms
  - Folie a deux
EPIDEMIOLOGY

3% of population will experience a psychotic episode.

Lifetime risk of schizophrenia is about 1%.

Equal incidence in males and females.

Younger age of onset in males (usually 15-25 years).

Similar prevalence in all cultures.

Strong genetic influence.
Genetic Risk of Schizophrenia

- One sibling with schizophrenia 8.0%
- Parent with schizophrenia 12.0%
- Both parents with schizophrenia 40.0%
- First cousin with schizophrenia 2.4%
- Monozygotic twin with schizophrenia 47.0%
- Dizygotic twin with schizophrenia 12.0%
Australian Low Prevalence Study

• Between 4 and 7 persons per thousand urban residents (mean 4.7) are in contact with mental health services per month for psychotic symptoms
• Schizophrenia and schizoaffective disorder account for over 60% of the prevalence of psychotic disorders
• Majority of psychotic illnesses have their beginning in late adolescence or early adulthood
• At interview, on average 15 years after onset of illness, 43% had incomplete recovery between episodes,
  – 61% had current hallucinations and delusions;
  – 25% currently were depressed;
  – 18% had current suicidal thoughts
Australian Low Prevalence study continued

- D&A co-morbidity in 25%
- 18% victims of violence
- 17% attempted suicide or deliberate self harm in the past year
- Less than 20% had participated in rehabilitation activities in the past year
- 86% were taking medication for symptoms
- 84% of those had side effects
10 – 15% of people with schizophrenia will suicide. Risk factors for suicide in schizophrenia

- Male
- Single
- Depression
- Unemployed
- Past suicide attempts
- Paranoid subtype
- High intelligence
- Higher premorbid psychosocial functioning
- Insight
- Substance abuse
- Friend/associate who has recently suicided

Higher risk is associated with the early phase of the illness, and recovery from an episode
DSM IV categories of Schizophrenia Spectrum Disorders

**SCHIZOPHRENIA** is a disturbance that lasts for at least 6 months and includes at least 1 month of active-phase symptoms (ie two [or more] of the following: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behaviour, negative symptoms). Definitions for the schizophrenia subtypes (Paranoid, disorganised, catatonic, undifferentiated, and residual) are also included in this section.

**SCHIZOPHRENIFORM DISORDER** is characterized by a symptomatic presentation that is equivalent to schizophrenia except for its duration (ie the disturbance lasts from 1 to 6 months) and the absence of a requirement that there be a decline in functioning.

**SCHIZOAFFECTIVE DISORDER** is a disturbance in which a mood episode and the active-phase symptoms of schizophrenia occur together and were preceded or are followed by at least 2 weeks of delusions or hallucinations without prominent mood symptoms.

**DELUSIONAL DISORDER** is characterised by at least 1 month of non-bizarre delusions without active-phase symptoms of schizophrenia
BRIEF PSYCHOTIC DISORDER is a psychotic disturbance that lasts more than 1 day and remits by 1 month.

SHARED PSYCHOTIC DISORDER is a disturbance that develops in an individual who is influenced by someone else who has an established delusion with similar content.

PSYCHOTIC DISORDER DUE TO A GENERAL MEDICAL CONDITION, the psychotic symptoms are judged to be a direct psychological consequence of a general medical condition.

SUBSTANCE-INDUCED PSYCHOTIC DISORDER the psychotic symptoms are judged to be direct physiological consequence of a drug of abuse, a medication, or toxin exposure.

PSYCHOTIC DISORDER NOT OTHERWISE SPECIFICIED is included for classifying psychotic presentations that do not meet the criteria for any of the specific psychotic disorders defined in this section or psychotic symptomatology about which there is inadequate or contradictory information.
Schizophrenia

• Individuals may have problems with:
  – Hallucinations – auditory most common
  – Strange beliefs
  – Disturbances with thinking or concentration
  – Managing daily activities
  – Managing social interactions, work studies
  – Apathy, withdrawal
  – Families may have difficulties with behaviour
Positive symptoms of schizophrenia

- Delusions
  - A false unshakeable belief that is out of keeping with the person’s cultural and educational background

- Hallucinations
  - A perception in the absence of an external stimulus
  - Any sensory system can be involved
  - Activation of primary sensory cortex, limbic and paralimbic areas (cingulate, parahippocampus) occurs

- Disorder of thought form
- Disorganised behaviour
Negative symptoms of schizophrenia

- Blunted affect
- Lack of spontaneity
- Alogia: restrictions in fluency and productivity of speech
- Avolition: restrictions in the initiation of goal-directed behaviour
- Anhedonia
- Social withdrawal
- Amotivation
- Negative symptoms predict poor outcome, are difficult to treat clinically
- Associated with decreased blood flow, glucose metabolism and slowed EEG in frontal lobe.
Cognitive Impairment

Impaired verbal fluency (ability to produce spontaneous speech)

• Impaired working memory
• Impairment in executive functioning
• Marked cognitive dysfunction at presentation to services
• Stable over initial 5 years
Patterns of cognitive decline
Pattern of symptom overlap

- Symptom severity is no guide to diagnosis except for negative symptoms
- Diagnoses are determined by the longitudinal course of the illness
- Time course of mood symptoms
- Level of functional impairment

- "First Episode Psychosis", idea of a critical period in the first 5 years of illness (Birchwood) during which intensive treatment may minimise long term impairment.
  - Duration of untreated Psychosis
  - Prodrome
  - Early results and ethical dilemmas of interventions in the prodromal period
  - Low doses of antipsychotic medication required in first episode
  - More sensitive to side effects
  - Engagement issues, and risk of loss to follow up if adverse events
Course of Schizophrenia

- Onset varies but predicts later course, Age of onset M < F
- Stages of prodrome, acute and chronic illness
- Rare in childhood
- Outcome – “rule of thirds”
  - Highly variable
  - For individual stable after first 2 – 5 years
  - Significantly better in 3rd world
  - Predicted by sex, marital status, onset, premorbid function, DUP (?)
Aetiology of Schizophrenia: Review year 2 lectures

- Vulnerability – stress model.
- Psychosocial and environmental factors (seminar to follow)

**Biological Factors:**
- Dopamine excess theory
- Other neurotransmitters – 5HT, NA, GABA
- Neuropathological findings: limbic system size reduction and disorganised cells in hippocampus
- Basal Ganglia loss of cells and reduced cell volume in GP and SN
- Brain imaging: may have increased lat and 3rd ventricles; reduced cortical volume; reduced left side amygdala and hippocampus
- Functional Scans: hypoactivity in pre and frontal cortex, hyperactive BG
- Genetics: multigenetic inheritance
- Abnormal connectivity
MEDICAL CONDITIONS THAT MAY PRESENT WITH PSYCHOSIS

- Neurological conditions
- Metabolic or endocrine disturbances
- Vitamin deficiencies
- Auto immune disorders
- Drug use (prescribed and non-prescribed)
Differential Diagnosis of Psychosis:
NEUROLOGICAL CONDITIONS

• Epilepsy (especially temporal lobe)
• Tumours (especially frontal lobe or limbic)
• Degenerative disorders (such as Huntington's disease)
• Inflammatory disorders (such as SLE and sarcoidosis)
• Cerebrovascular disease
• Cerebral trauma
• Cerebral infections (HIV-related, herpes, neurosyphilis, abscesses)
DIFFERENTIAL DIAGNOSIS OF PSYCHOSIS - METABOLIC AND ENDOCRINE DISTURBANCES

- Electrolyte and fluid imbalances
- Hypoxia or hypercarbia
- Porphyria
- Hyper/hypo thyroidism
  - Hyper/hypoparathyroidism
- Hypoglycemia
- Adrenal dysfunction
- Hepatic or renal failure
Differential Diagnosis of Psychosis: Commonly prescribed drugs

• L-dopa
• Prednisone
• Thyroxine
• Anticholinergics
• Benzodiazepine withdrawal
Differential Diagnosis of Psychosis: Vitamin Deficiencies and Autoimmune Diseases

- B12 Deficiency
- Niacin Deficiency
- Thiamine deficiency (Wernicke-Korsakoff syndrome)

SLE
Differential Diagnosis of Psychosis:
Other drugs

• Alcohol withdrawal
• Hallucinogens
• Amphetamines
• Cannabis
• Cocaine
• Inhalants
• Opioids
Differential Diagnosis of Psychosis: Other Psychiatric Conditions

• Schizophrenia
  Schizophreniform disorder
• Schizoaffective disorder
• Brief reactive psychosis
• Mood disorder (unipolar or bipolar)
• Delusional disorder
Drug induced psychosis
Psychosis due to a medical condition
Baseline Laboratory Investigations

- **Test**                  To test for: -
  - FBC                     Nutritional deficiencies, infection, anaemia
  - UEC                     Renal function, electrolyte imbalance
  - Urine drug screen      Illicit drugs, infections
  - Liver function tests   Liver dysfunction, alcohol abuse
  - Thyroid function       Hypo/hyperthyroidism
  - HIV, Syphilis and Hepatitis serology if indicated
  - B12 and Folate deficiencies
  - Temperature            Fever
  - ECG                     Cardiac abnormalities, (antipsychotics prolong QT)
  - EEG                     Epileptic foci
  - Brain Imaging           Structural abnormalities, tumours
TECHNIQUES TO ENGAGE A PSYCHOTIC PATIENT

Be aware the patient may be nervous or wary.

Remember that psychosis may impair the ability to interact normally or to process information.

Employ 'de-arousing' techniques: sit side-by-side (not face-to-face), allow maximal personal space and access to the exit, avoid too much eye contact.

Listen carefully and acknowledge viewpoint without 'colluding' with the patient's delusional system.

Gradually gather information at the patient's own pace.

Be respectful and helpful.