Schizophrenia

Acute presentation characterised by acute psychosis with hallucinations and thought disorder.

Epidemiology
Tends to present in late adolescence or early adult life.
Equal incidence in males and females (lifetime risk 0.85%)
Onset 5 years earlier in males - peak 15-25 years
Prevalence - 3 /1000 population

One third of patients have a single episode, one third a relapsing illness with minimal residual damage and one third have progressive deterioration.

Thought to have a genetic predisposition, sometimes triggered by acute life events or drug use.

Poorer prognosis: premorbid factors
- FH schizophrenia
- Personal history of any psychiatric disorder
- Eccentric shy personality
- Poor social and psychosexual adjustment
- Single civil status
- Unstable work record
- Young age

Poor prognosis: clinical indicators
- Insidious onset
- Blunted affect
- Prolonged episode

Type 1 and type 2
Crow characterised the two ends of the spectrum as Type 1 and type 2. In type 2 the negative symptoms predominate and there is CT and MRI evidence of neuronal loss (appears as widening of cortical sulci and apparent enlargement of ventricles due to shrinkage of the brain).

Type 1
Acute onset
Positive symptoms
Normal ventricles
Good response to medication
Increased dopamine activity

Type 2
Insidious onset
Negative symptoms
Enlarged ventricles
Poor response to medication
Associated with reduced blood flow to frontal region (prefrontal cortex)
Positive symptoms
Hallucinations
Thought disorder
Agitation

Negative symptoms
Apathy
Social and occupational withdrawal
Poor memory and attention
Intellectual decline

Other classifications focus on main picture at presentation:
Undifferentiated or simple- with various degrees of thought disorder
Paranoid- with persecutory delusions or hallucinations
Hebephrenic (very disorganised thoughts and behaviour with agitation, grinning or grimacing)
Catatonic (with posturing rigidity etc- see below)

Delusions
• of reference (people or objects referring to patient with special meaning)
• of persecution (paranoid)
• of passivity (being influenced by others eg thoughts implanted)

Thought disorder
• Bizarre transition from one idea to another
  (derailment, loosening of associations, knight’s move thinking)
• New words / stock phrases
• Clang associations (by rhyme)
• Incoherence (word salad)

Hallucinations
• Usually auditory (“hearing voices”)
• Running commentary
• Third person
• Echo (of thoughts spoken aloud)

Positive Symptoms Of Schizophrenia
### Negative Symptoms of Schizophrenia

#### Behaviour
- Quiet
- Withdrawn
- Bizarre postures (waxy flexibility)
- Catatonia

#### Mood
- Cold
- Flat
- Unemotional
- Blunted
- Incongruous

#### Social / occupational
- Withdrawal from social contact
- Apathy, loss of drive
- Poor educational and work achievement
- Disintegration of personality

### Diagnosis
Acute presentation with hallucinations and thought disorder

#### First rank symptoms
These emphasise some specific types of hallucinations and delusions of passivity, but do not include the commoner and perhaps more central types of thought disorder. When present, the first rank symptoms are very suggestive of schizophrenia, though only 1 in 4 patients have them and 10% of those with psychotic depression may have them - so imperfect sensitivity and specificity.

There are: 3 hallucinations, 3 types of thought passivity, plus somatic passivity and delusional perception.

#### Auditory Hallucinations - often persecutory
Hallucinations have the substantiality of a normal perception and are experienced as emanating from outside the person
1) Thought spoken aloud (echo de la pensee)
2) Third person hallucinations eg 2 or more voices discussing patient ("He's a bastard, really evil," "Yes he's the devil")
3) Commentary ("now he's crossing his legs, now he's getting angry")

#### Passivity of thought
1) Insertion (Someone's putting thoughts into my head - they're not mine)
2) Withdrawal (Someone is taking thoughts out of my mind - they just disappear in the middle of my train of thought)
3) Broadcasting ("people know what I'm thinking")

#### Somatic passivity
"Someone is controlling my thoughts, feelings or actions"

#### Delusional perception
A real perception gives rise to a false meaning - eg seeing a red curtain and knowing that this is a sign that you are the messiah
Thought disorder
Perhaps commoner than the florid hallucinations and delusions described as first rank symptoms are various types of thought disorder. Cognitive processing is scrambled, with various degrees of disturbance. Some think this is central to acute schizophrenia, with loss of internal monitoring and impairment of the supervisory attentional system, which allocates attention to specific cognitive tasks.

For example:
Neologisms- new words eg cosmoblue in the quote below:
Interviewer: How do you feel today?
Patient: Yes, sir, it's a good day. Full of rainbow you know. They go along on their merry way without concern for impurities. Yes, sir, like unconcerned flappers of the cosmoblue.

Stock phrases (verbal stereotypy) with no relevance to circumstances
Clang associations: connections between thoughts are dictated by chance sounds of words rather than their meanings eg
"Oh you can have all the keys you want, they broke into the store and found peas, what's the use of keys, policeman, watchman, dogs, dog show, the spaniel was the best dog this year, he is Spanish you know, he drowned them all in the bay, gay, New York bay, Broadway"

Concrete thinking (unable to understand abstract concepts)
Derailment- changing from one subject to another
Knight's-move thinking- leaping rapidly from one subject to another with an oblique connection
Omission- coming to a sudden stop
Drivelling- jumbled, muddled speech in which the meaning is obscure (sometimes called word salad)
Over-inclusive thinking.

(Mnemonic: "The drivelling new knight omitted the concrete stock- resulting in derailment and a clang")

Affect
This is often flat or blunted or inappropriate- eg laughing at something sad.

Behaviour
Sometimes there is posturing, stereotypes behaviour or rigid posture with increased tone (waxy flexibility)- these are included under the term catatonic schizophrenia.

Differential diagnosis
Other forms of psychosis:
Brief psychotic reaction eg following stressful life event such as bereavement
Major depression with psychotic features (hallucinations more likely to be in 2nd person: "You're useless, a failure, a bastard")
Bipolar disorder with psychotic features
Schizoid personality disorder
Schizoaffective disorder
Drug induced psychosis (particularly amphetamines, LSD)
Organic syndromes eg temporal lobe epilepsy, dementia, frontal tumour
Questions to ask
In examinations, patients usually have a barn-door history of acute psychosis and you are mainly intended to show an appreciation of how to elicit the first rank symptoms.

- Have you had any unusual experiences?
- Have you heard voices talking about you or describing your thoughts aloud?
- What did the voice(s) say?
- Have you felt that someone else is controlling your thoughts, actions or feelings?
- Have you experienced any unusual bodily sensations?
- Have you seen or heard anything that has had a special meaning just for you?

Drug treatment
Most of the effective anti-psychotic drugs inhibit the post-synaptic dopamine 2 receptor (D2).

NICE guidelines recommend use of one of the oral atypical antipsychotic drugs as first line treatment because of the lower incidence of extrapyramidal symptoms (EPS). These drugs should be given in the lowest effective therapeutic dose and continued for a minimum of six weeks. Once the acute episode has settled, many would advise continued use for at least 2 years to prevent relapse. The atypical drugs include:

- Olanzapine
- Risperidone
- Quetiapine
- Amisulpiride

When at least one and preferably two of these have been used and found to be ineffective in controlling symptoms, treatment resistant schizophrenia (TRS) is suspected and clozapine may be used. This is probably the most effective anti-psychotic drug, but has the serious side effect of neutropenia in 4% of those who take it. Weekly blood tests are needed for 6 months, which complicates its use.

Rapid tranquillisation
The aim is to calm the patient reducing the risk of violence or self-harm rather than treating the underlying disorder. Behavioural methods of de-escalation should be used first wherever possible.
Risks of drug use include over-sedation or loss of consciousness.
Vital signs must be recorded before and after drug administration.
Use of either lorazepam or haloperidol (IM) is recommended.

Notes on the dopamine hypothesis
1) There is overactivity of dopamine within the mesolimbic system, which is responsible for the positive symptoms of schizophrenia
2) Drug effectiveness is well-correlated with affinity for D2 receptors
3) However, receptor blockade takes place within hours of drug administration but the antipsychotic effect may take a week to work
4) One possible explanation is that the effect is mediated by neuronal cell bodies in the brainstem, which synthesize enzymes, which are then transported along the long axons to the hippocampus
5) It is likely that other neurotransmitters are involved - the brain is a highly complex organ and it is hard to reduce behaviour to chemical reactions

Side-effects
Many of the anti-psychotics block other monoamines as well as D2, so a variety of side effects may be encountered.
Anti-dopaminergic
a) Parkinsonian (tremor, rigidity, bradykinesia)
b) Acute dystonic reactions (eg oculogyric crisis)
c) Akathisia- internal sensation of restlessness accompanied by rocking from foot to foot
d) Tardive (late onset) dyskinesia- with oro-bucco-facio-lingual features: involuntary facial movements, lip smacking etc

Anticholinergic
Dry mouth
Tachycardia
Blurred vision
Acute glaucoma
Poor urinary flow or retention
Constipation

Anti-adrenergic (adrenalin and noradrenalin)
Postural hypotension
Sedation

Anti-serotoninergic (5HT)
Anhedonia
Depression

Others
Weight gain
Seizures
Cholestatic jaundice (CPZ), Photosensitivity (CPZ)
Neutropenia (particularly clozapine- weekly blood tests for 6 months)
Neuroleptic malignant syndrome

Emergency admission under the Mental Health Act (MHA)

3 main criteria

1) Compulsory admission if the patient is suffering from a mental disorder (which includes mental illness but excludes alcohol and drug dependency)
2) Admission for the patient's health or safety; or for the safety of others
3) Voluntary admission and / or treatment has been refused

Section 2
Admission for assessment
Lasts for 28 days
The applicant is the approved social worker (ASW) or nearest relative (NR)
Two doctors make recommendations (one approved under Mental health Act and preferably the other should have previous knowledge of patient eg GP)

Section 4
Emergency assessment
Lasts 72 hours
Applicant as above (ASW or NR)
One doctor makes recommendation