**Schizophrenia**

is one of the most common severe mental illnesses and is reported to have a lifetime incidence of 1%. Schizophrenia is typically diagnosed before age 25 and is diagnosed equally in men and women.

When it is diagnosed after age 45, it is considered late onset. Schizophrenia is characterised by **delusions, hallucinations and lack of insight**.

Acute schizophrenia may also present with disturbed behaviour, disordered thinking, or with insidious social withdrawal and other so-called negative symptoms and less obvious delusions and hallucinations. Schizophrenia occurs worldwide in all ethnic groups. Children of an affected parent have an approximate 10% risk of developing the illness, but this rises to 50% if an identical twin is affected. The usual age of onset is the mid-twenties but can be older, particularly in women.

**Pathogenesis**

1. **genetic contribution.**
2. **Environmental risk factors** include a history of obstetric complications at the time of the patient’s birth and urban upbringing.
3. **Brain imaging techniques have identified subtle structural abnormalities in groups of people with schizophrenia**, including an overall decrease in brain size (by about 3% on average), with a relatively greater reduction in temporal lobe volume (5–10%).
4. **social stress and cannabis**, which increases dopamine turnover which lead to increase Episodes of acute schizophrenia.

Consequently, schizophrenia is now viewed as a neurodevelopmental disorder, caused by abnormalities of brain development associated with genetic predisposition and early environmental influences, but precipitated by later triggers.

**Clinical features**

Acute schizophrenia should be suspected in any individual with bizarre behaviour accompanied by delusions and hallucinations that are not due to organic brain disease or substance misuse.

Hallucinations are typically auditory but can occur in any sensory modality. They commonly involve voices from outside the head that talk to or about the person. Sometimes the voices repeat the person’s thoughts.

Patients may also describe ‘passivity of thought’, experienced as disturbances in the normal privacy of thinking, such as the delusional belief that their thoughts are being ‘withdrawn’ from them and perhaps ‘broadcast’ to others, and/or that alien thoughts are being ‘inserted’ into their mind.
Other characteristic symptoms are delusions of control: believing that one’s emotions, impulses or acts are controlled by others.
Another phenomenon is delusional perception, a delusion that arises suddenly alongside a normal perception, such as ‘I saw the moon and I immediately knew he was evil.’ Other, less common, symptoms may occur, including thought disorder, as manifest by incomprehensible speech, and abnormalities of movement, such as those in which the patient can become immobile or adopt awkward postures for prolonged periods (catatonia).

**symptoms of schizophrenia**

**First rank symptoms of acute schizophrenia**
- **A** = Auditory hallucinations – second- or third-person.
- **B** = Broadcasting, insertion/withdrawal of thoughts
- **C** = Controlled feelings, impulses or acts (‘passivity’ experiences/phenomena)
- **D** = Delusional perception (a particular experience is bizarrely interpreted)

**Symptoms of chronic schizophrenia (negative symptoms)**
- Flattened (blunted) affect
- Apathy and loss of drive (avolition)
- Social isolation/withdrawal (autism)
- Poverty of speech (alogia)
- Poor self-care

**Diagnosis**
The diagnosis is made primarily on clinical grounds but investigations may be required to rule out organic brain disease.
The main differential diagnosis of schizophrenia includes:
- **Other functional psychoses**, particularly psychotic depression and mania, in which delusions and hallucinations are congruent with a marked mood disturbance (negative in depression and grandiose in mania). Schizophrenia must also be differentiated from specific delusional disorders that are not associated with the other typical features of schizophrenia.
- **Organic psychoses**, including delirium, in which there is impairment of consciousness and loss of orientation (not found in schizophrenia), typically with visual hallucinations; drug misuse, particularly in young people; and temporal lobe epilepsy with psychotic symptoms, in which olfactory and gustatory hallucinations may occur.

Many of those who experience acute schizophrenia go on to develop a chronic state in which the acute, so-called positive symptoms resolve, or at least do not dominate the clinical picture, leaving so-called negative symptoms that include blunt affect, apathy, social isolation, poverty of speech and poor self-care.
Patients with chronic schizophrenia may also manifest positive symptoms, particularly when under stress, and it can be difficult for those who do not know the patient to judge whether or not these are signs of an acute relapse. Schizophrenia is diagnosed by the presence of at least two of the following five symptoms:

1. delusions.
2. hallucinations.
3. disorganized speech.
4. grossly disorganized or catatonic behavior.
5. negative symptoms.

At least one of the symptoms must be delusions, hallucinations, or grossly disorganized behavior.

**DDX of schizophrenia**

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**Investigations**

As in dementia, investigations are focused on excluding a treatable cause, such as

- slow-growing brain tumour.
- temporal lobe epilepsy.
- neurosyphilis.
- various autoimmune conditions.

These are required only in patients with neurological or other organic symptoms or signs.
Management

First-episode schizophrenia usually requires admission to hospital because patients lack the insight that they are ill and are unwilling to accept treatment. In some cases, they may be at risk of harming themselves or others. Subsequent acute relapses and chronic schizophrenia are now usually managed in the community.

Drug treatment

Antipsychotic agents are effective against the positive symptoms of schizophrenia in the majority of cases. They take 2–4 weeks to be maximally effective but have some beneficial effects shortly after administration. Treatment is then ideally continued to prevent relapse. In a patient with a first episode of schizophrenia this will usually be for 1 or 2 years, but in patients with multiple episodes treatment may be required for many years. The benefits of prolonged treatment must be weighed against the adverse effects, which include extrapyramidal side-effects (EPSE) like acute dystonic reactions (which may require treatment with parenteral anticholinergics), akathisia and parkinsonism. For long-term use, antipsychotic agents are often given by slow-release (depot) injections to improve adherence.

A number of antipsychotic agents are available. These may be divided into conventional (first-generation) drugs such as chlorpromazine and haloperidol, and novel or second generation drugs such as olanzapine and clozapine. All work by blocking D2 dopamine receptors in the brain. Patients who have not responded to conventional drugs may respond to newer agents, which are also less likely to produce unwanted EPSE but do tend to cause greater weight gain and metabolic disturbances, such as dyslipidaemia. Clozapine can be remarkably effective in those who do not respond to other antipsychotics but can cause agranulocytosis in about 1% of patients in the first few months. Prescription therefore requires regular monitoring of white blood cell count, initially on a weekly basis, then fortnightly and monthly thereafter. Clozapine should not be stopped suddenly because of the likelihood of relapse.

Two serious adverse effects deserve special mention.

Neuroleptic malignant syndrome

This is a rare but serious condition characterised by fever, tremor and rigidity, autonomic instability and delirium. Characteristic laboratory findings are an elevated creatinine phosphokinase and leucocytosis.
Antipsychotic medication must be stopped immediately and supportive therapy provided, often in an intensive care unit. Treatment includes ensuring hydration and reducing hyperthermia. Dantrolene sodium and bromocriptine may be helpful. Mortality is 20% untreated and 5% with treatment.

**Cardiac arrhythmias**
Antipsychotic medications cause prolongation of the QTc interval, which may be associated with ventricular tachycardia, torsades de pointes and sudden death. If this occurs, treatment should be stopped, with careful electrocardiographic monitoring and treatment of serious arrhythmias if necessary.

**Psychological treatment**
Psychological treatment, including general support for the patient and family, is now seen as an essential component of management. CBT may help patients to cope with symptoms. There is evidence that personal and/or family education, when given as part of an integrated treatment package, reduces the rate of relapse.

**Social treatment**
After an acute episode of schizophrenia has been controlled by drug therapy, social rehabilitation may be required. Recurrent illness is likely to cause disruption to patients’ relationships and their ability to manage their accommodation and occupation; consequently, patients with schizophrenia often need help to obtain housing and employment. A graded return to employment and sometimes a period of supported accommodation are required. Patients with chronic schizophrenia have particular difficulties and may need long-term, supervised accommodation. This now tends to be in supported accommodation in the community.

**Prognosis**
About one-third of those who develop an acute schizophrenic episode have a good outcome. One-third develop chronic, incapacitating schizophrenia, and the remainder largely recover after each episode but suffer relapses. Most affected patients cannot work or live independently. Schizophrenia is associated with suicide and up to 10% of patients take their own lives.