Schizophrenia

Schizophrenia is the most common form of psychosis. It is a lifelong condition, which can take on either a chronic form or a form with relapsing and remitting episodes of acute illness. It is a disorder which not only affects patients but also family and close friends.

Epidemiology

An English study reported an incidence of 15.2 per 100,000 person-years.\(^1\) A systematic review reported a prevalence of 7.2/1,000 persons.\(^2\) In children and adolescents between the ages of 5 and 18 the prevalence has been estimated to be 0.4%.\(^3\)

It can develop at any age but starts most commonly in adolescence and the early 20s. In young people aged 10-18 it accounts for 24.5% of all psychiatric admissions, with a marked rise after the age of 15.\(^3\) Peak age of onset is later in women. Men are also more likely to have negative symptoms and more serious forms of schizophrenia.\(^4\) Schizophrenia is also more common in migrants and this probably reflects a mixture of environmental and social factors.\(^5\)

Aetiology of schizophrenia

Multiple factors are involved in schizophrenia - eg, genetic, environmental and social.\(^6, 7\) Short-lived illnesses similar to paranoid schizophrenia are associated with cocaine, amphetamines and cannabis. Cannabis use especially has been noted to be a culprit in both established schizophrenia and in enhancing future risk of schizophrenia in those who have not yet developed psychotic symptoms.\(^8\)

Risk factors

- Family history - ongoing research is beginning to identify specific genetic variants and pathways that increase susceptibility to schizophrenia.\(^9\)
- Intrauterine and perinatal complications - eg, premature birth, low birth weight.
- Intrauterine infection, particularly viral.
- Abnormal early cognitive/neuromuscular development.
- Social isolation, migrants.\(^4\) The higher level of schizophrenia in migrants probably reflects a mixture of environmental and social factors.\(^5\)
- Abnormal family interactions - eg, hostile or overly critical parents.

Presentation

Acute symptoms

The hallmark symptoms of a psychotic illness are:

- Delusions
- Hallucinations
- Thought disorder
- Lack of insight\(^10\)

These 'first rank' or 'positive' symptoms of schizophrenia are rare in other psychotic illnesses (eg, mania or organic psychosis). The presence of only one of the following symptoms is strongly predictive of the diagnosis:

- Lack of insight.
- Auditory hallucinations, especially the echoing of thoughts, or a third person 'commentary' on one's actions - eg, 'Now he's putting on his coat.'
- Thought insertion, removal or interruption - delusions about external control of thought.
- Thought broadcasting - the delusion that others can hear one's thoughts.
- Delusional perceptions (ie abnormal significance for a normal event) - eg, 'The rainbow came out and I realised I was the son of God.'
- External control of emotions.
- Somatic passivity - thoughts, sensations and actions are under external control.

Hallucinations in other sensory modalities (visual, olfactory) also occur but much less commonly. Organic causes of psychosis should be actively sought when these hallucinations are reported. Delusions tend to be grandiose or persecutory but these symptoms are also seen in other psychotic illnesses.

Chronic symptoms (also called ‘negative’ symptoms)

- Underactivity - which also affects speech.
- Low motivation.
- Social withdrawal.
- Emotional flattening.
• Self-neglect.

One study found that over a recent period of 25 years in South West Scotland, the prevalence of negative symptoms decreased and the prevalence of positive symptoms increased.[11]

In children and adolescents, there may be a 12-month prodromal period in which family and friends may notice subtle changes in behaviour and personality. Transient or attenuated first rank symptoms may occur but these are not pathognomonic. Many young people with such symptoms do not go on to develop schizophrenia but there is a higher risk of it developing in the presence of such a condition within ten years of initial presentation.[3]

Patients may manifest symptoms of other psychiatric diseases (eg, depression, anxiety, obsessions and compulsions). There is significant comorbidity with alcohol and substance misuse.[12]

**Signs**
Conduct a full physical examination to exclude/support possibility of organic psychosis.

In the mental state examination, be alert for:

• Appearance and behaviour - withdrawal, suspicion, or (rarely) stereotypical behaviours (repetition of purposeless movements) and mannerisms (eg, saluting).
• Speech - interruptions to the flow of thought (thought blocking), loosening of associations/loss of normal thought structure (knight’s move thinking).
• Mood/affect - flattened, incongruous or 'odd'.
• Abnormal beliefs - delusional percepts, delusions concerning thought control or broadcasting, passivity experiences.
• Abnormal experiences - hallucinations, especially auditory.
• Cognition - attention, concentration, orientation and memory should be assessed (significant impairment suggests delirium or severe dementia).

See also the separate Psychosis - Diagnosis and Management article.

**Differential diagnosis**[13]

**Organic disorders**
• Drug-induced psychosis - amphetamine, LSD, cannabis.
• Temporal lobe epilepsy.
• Encephalitis.
• Alcoholic hallucinosis.
• Dementia.
• Delirium due to infection, metabolic or toxic disturbance, neurological disease, endocrine cause, etc.
• Cerebral syphilis (still rare, although worldwide incidence of syphilis has been increasing).

**Psychiatric conditions**
• Mania.
• Psychotic depression.
• Some personality disorders.
• Panic disorders.
• Dissociative identity disorder.

**Associated conditions**[14]
• Depression.
• Anxiety.
• Post-traumatic stress disorder.
• Personality disorder.
• Substance misuse.
• Obesity.
• Diabetes mellitus (usually type II, associated with clozapine and olanzapine).[15]
• Infections.
• Cardiovascular disease.
• Continuing disability.

**Investigations**[14]
When a patient presents with their first episode consider the need for the following investigations:

• LFTs and FBC. Abnormal LFTs and macrocytosis on FBC are highly suggestive of alcohol abuse.
• Serological tests for syphilis should not be forgotten. Screening for AIDS should be preceded by counselling.
• Urine screen for drugs of abuse. Light recreational use of cannabis can produce a positive test for the subsequent fortnight. Heavy and chronic use can produce a positive result for months after the last use.
Also consider the following in new patients and already established patients presenting with psychosis or deterioration:

- Intoxication - alcohol, cannabis, amphetamines.
- Drug overdose - suicidal, or accidental.

Management\(^5\)

Initial management

- National Institute for Health and Care Excellence (NICE) guidelines emphasise the importance of early assessment and engagement in a therapeutic relationship, including assessment of social circumstances and involvement of family where possible.\(^14\)
- Early intervention is particularly important in the case of young people, including the involvement of Child and Adolescent Mental Health Services (CAMHS).\(^5\)
- For initial assessment and management see the separate Psychosis - Diagnosis and Management article.
- NICE recommends that GPs should only prescribe antipsychotics if they are on familiar territory. Protocols should be established with local mental health services/early intervention teams/psychiatrists depending on local arrangements. An atypical antipsychotic is the drug of choice. NICE has not found any difference between the various types. The drug’s Summary of Product Characteristics (SPC) and the British National Formulary (BNF) should be used to calculate dosages.

Multidisciplinary support\(^14\)

- The care of a patient who has schizophrenia is a joint effort between secondary care and primary care. The latter is important, being likely to see patients more often and for other physical diseases. Multidisciplinary support is essential to ensure support and early recognition of problems.
- A combination of inpatient and outpatient care, hospital consultant, community psychiatric nurses, GPs, crisis support, daycare, home treatment teams, social workers, voluntary organisations and involvement of carers is essential.
- Rates of associated physical diseases are high.
- Use of antipsychotic drugs may cause additional problems - eg, weight gain and increased incidence of type II diabetes mellitus.\(^15\)
- Awareness of health promotion such as diet, smoking cessation and screening for other diseases is important in general practice.
- Compliance is improved with regular monitoring and attention to side-effects. Useful resources here are the Glasgow Antipsychotic Side-effect Scale (GASS) and the Liverpool University Neuroleptic Side Effect Rating Scale (LUNSERS).\(^16\)

Social factors\(^14\)

- Rates of homelessness, poverty and economic deprivation are increased.
- Most patients live at home (55%) with or without a carer, 16% live in sheltered accommodation, whereas 16% are inpatients.
- Social support for help with housing, vocational support, social isolation, employment and financial aid is important.
- Use of the Recovery Action Plan should also be promoted. This has foundations of recovery which include hope, responsibility for self and education.

Psychological support\(^3, 14\)

- Information and education.
- Voluntary organisations and support groups.
- Information and support for carers are also essential.
- Specialist ‘family interventions in psychosis’ teams provide important support to both the patient and family and should be part of initial management.
- Furthermore, family therapy has been shown to reduce relapse and admission rates.\(^4\)
- Cognitive behavioural therapy is helpful.
- NICE recommends art therapy (eg, music, dancing, drama) for the alleviation of negative symptoms in young people.

Drugs\(^3, 14\)

- First-line treatment in newly diagnosed schizophrenia now involves the use of the newer atypical antipsychotics - eg, risperidone or olanzapine.
- The Scottish Intercollegiate Guidelines Network (SIGN) recommends amisulpride, olanzapine or risperidone for acute exacerbation or recurrence, with chlorpromazine and other low-potency first-generation antipsychotics providing suitable alternatives.
- Depot formulations should be considered if the patient prefers this after an acute episode or if there is non-compliance with medication.
- Benzodiazepines have little role other than in rapid tranquilisation. This may be required if the patient is violent or aggressive and refuses admission.
- In children and adolescents the evidence base for the use of antipsychotics is less well developed than in adults. NICE recommends that antipsychotics should only be offered once a definitive diagnosis of schizophrenia has been made. It should not be used where the condition is only suspected or to prevent it from developing. In such cases psychological therapies are often an appropriate first-line option.
- The choice of antipsychotic should be made by the patient and those with parental responsibility in conjunction with the doctor after a full discussion about the risks and benefits. Several medications in this area are not licensed for use in children but are nevertheless extensively prescribed and have a good evidence base. In such cases, the usual considerations regarding the prescribing of unlicensed medicines should apply. For more information on this, see the separate Prescribing for Children article.
• Aripiprazole is now recommended for patients aged 15 to 17 years who are intolerant of risperidone, where risperidone is contra-indicated, or where risperidone has not proved effective in controlling the schizophrenia.
• SIGN also recommends aripiprazole where sedation is a problem with other drugs. Haloperidol is another option for this purpose.
• NICE recommends clozapine for children and young people whose schizophrenia has not responded to adequate doses of at least two different antipsychotics used sequentially for 6-8 weeks. If clozapine fails, a multidisciplinary review followed by a combination of clozapine and a second antipsychotic can be tried for 8-10 weeks.

**Side-effects**

Extrapyramidal symptoms are less troublesome with the atypical antipsychotics than with older more conventional therapies. The main problem with atypical antipsychotics is weight gain. Rarely they can also cause bone marrow depression. For further details regarding adverse effects see individual drug monographs.

**Electroconvulsive therapy (ECT)**

SIGN recommends that this may be appropriate in patients resistant to pharmacological therapy, particularly if rapid reduction in symptoms is required. It may have an adjunctive effect with antipsychotics.[5]

**The GP's role**

• Rapid tranquilisation may be required at any stage in the patient's illness if their behaviour is so disturbed that they become a danger to themselves or to others. See separate Rapid Tranquilisation article.
• Always bear in mind Mental Health and Mental Capacity legislation and keep a record of any advance directives or statements. Within the framework, liaise with carers and relatives as much as possible.
• Contact with secondary care should be made as soon as possible and close lines of communication should be maintained throughout the patient's illness. This is particularly important for children and adolescents. Transient or attenuated symptoms should be referred to CAMHS (up to age 17) or early intervention in psychosis services (14 years or over) depending on availability.[3]
• Patients who are stable may be managed through a shared care approach or almost entirely within primary care. The 'rules of engagement' for such care should be laid down in a Care Programme Approach (CPA) document.
• NICE guidance advises the use of mental health registers and regular health check-ups in primary practice.[4]
• The Quality and Outcomes Framework (QOF) highlights that primary care practices should have a register of patients with schizophrenia, participate with community mental health services, review patients in the last 12 months with provision of health promotion and disease prevention.[17]
• Regular assessments should include establishing the presence of diabetes mellitus, cardiovascular disease and risk factors, medication-related adverse events and endocrine disorders.[4] NICE recommends a yearly cardiovascular risk assessment including measurement of lipids.
• Also a low threshold for re-referral to secondary care if necessary - eg, failure to respond to current therapy.
• If the patient's circumstances and/or psychosis do not permit safe and effective management in the community then inpatient assessment and/or care will be needed. If the patient refuses admission and you feel he or she is a danger to themselves or to others, they may be 'sectioned' under the Mental Health Act and undergo compulsory hospitalisation. Most local services now include a crisis intervention team.

**The role of secondary care**[4]

Because it is a specialised field it is expected that secondary care will assess the patient on a regular basis.

• Doses of antipsychotics may need to be adjusted according to patient response.
• At approximately eight weeks, treatment should be reviewed and if there has been an inadequate response, the drug should be changed either to another atypical or typical antipsychotic.
• Drug adherence can be a cause of failure of efficacy - depot preparations may need to be considered.
• Clozapine, initiated under the psychiatrist, is used in one third of patients who are resistant to more conventional forms of treatment (risk of agranulocytosis).
• Treatment should continue for 1-2 years after the initial event and with close specialist supervision.
• If patients are well after 1-2 years of treatment then gradually reduce the dose with a plan to stop - but very close monitoring for relapses is needed.
Prognosis and recovery

It is increasingly recognised that recovery is not simply a reduction or abatement of symptoms. The Scottish Recovery Network defines recovery as “being able to live a meaningful and satisfying life, as defined by each person, in the presence or absence of symptoms”.

Generally rates of 80% for recovery after a first episode of psychosis have been reported. Early intervention and more effective treatment mean that the outlook is not as bleak as it once was. NICE cites several studies which reported a moderately good long-term global outcome in over half of people with schizophrenia, with a smaller proportion having extended periods of remission of symptoms without further relapses. Some people who never experience complete recovery manage to sustain an acceptable quality of life.

Good prognostic factors include:

- Absence of family history.
- Good premorbid function - stable personality, stable relationships.
- Clear precipitant.
- Acute onset.
- Mood disturbance.
- Prompt treatment.
- Maintenance of initiative, motivation.

Nevertheless, it should be remembered that schizophrenia continues to have a poor prognosis in some patients.

- Slow, insidious onset and prominent negative symptoms are associated with a worse outcome.
- Mortality is almost twice that of the general population.
- Shorter life expectancy is linked to cardiovascular disease, respiratory disease and cancer.
- Suicide risk is almost nine times higher than the general population.
- Death from violent incidents is twice as high.
- Almost half of patients have a substance misuse problem. There are high rates of cigarette smoking.

In general terms, the prognosis is poorer when schizophrenia develops in childhood or adolescence. About one fifth of children have only mild impairment; one third of children are severely affected and require intensive social and psychiatric support. The condition can have a major adverse effect on social, educational and occupational prospects.

Further reading & references

- *Psychosis and schizophrenia in adults; NICE Quality Standard, February 2015*
- *Transition between inpatient mental health settings and community or care home settings; NICE Guidance (August 2016)*
- 3. *Psychosis and schizophrenia in children and young people; NICE Clinical Guideline (January 2013, updated Oct 2016)*
- 5. *Management of schizophrenia - a national clinical guideline; Scottish Intercollegiate Guidelines Network - SIGN (Mar 2013)*
- 14. *Psychosis and schizophrenia in adults: treatment and management; NICE Clinical Guideline (Feb 2014)


17. QOF Guidance; British Medical Association (BMA)


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