Schizophrenia

The GP's crucial management role

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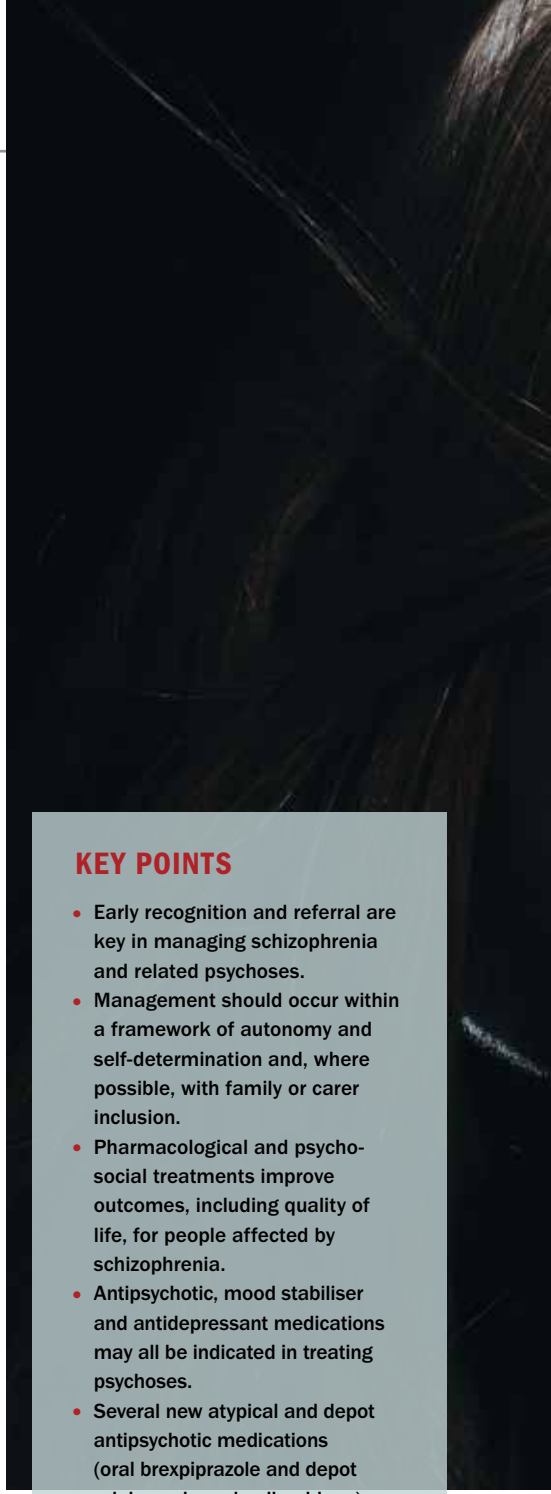
Schizophrenia and related psychoses are conservatively estimated to affect more than 100,000 Australians, as well as their families, friends and colleagues. People with schizophrenia are more likely to experience health morbidity and to die prematurely, by up to 25 years, from suicide or physical illness. GPs are in an ideal position to detect and treat schizophrenia and related psychoses and to monitor and manage the physical health of patients with psychotic illnesses.

Schizophrenia is a chronic mental health disorder that is conservatively estimated to affect more than 100,000 Australians, or 0.5% of the Australian population, in their lifetime and is often managed in general practice.[1] It is characterised by the persistent or intermittent presence of a pattern of psychotic experiences, such as delusional ideas, perceptual abnormalities and thought disorder, as well as dysregulation of mood and cognition.[2] Schizophrenia is thought to be a heterogeneous group of disorders with complex and incompletely elucidated underlying mechanisms.[3] It is therefore best considered in association with its related spectrum of illnesses, including schizoaffective disorder and other affective psychoses.[4] For practical purposes, this article encompasses schizophrenia, schizoaffective disorder and related psychoses and refers to schizophrenia and psychoses interchangeably.

The prognosis of schizophrenia is variable but is usually established during the first five years of illness. Although antipsychotic medication has improved outcomes considerably, 50 to 60% of patients continue to experience relapsing and chronic psychotic symptoms, whereas about 30% have persistent social and occupational functional deficits, particularly because onset often occurs during the formative adolescent and early adult years.[5] Complications are common in those with psychotic disorders, with lifetime prevalences of 35% for suicide attempts, 74% for substance misuse, 5% for homelessness and 49 to 68% for commission of violent acts.[4]



KEY POINTS

- Early recognition and referral are key in managing schizophrenia and related psychoses.
- Management should occur within a framework of autonomy and self-determination and, where possible, with family or carer inclusion.
- Pharmacological and psychosocial treatments improve outcomes, including quality of life, for people affected by schizophrenia.
- Antipsychotic, mood stabiliser and antidepressant medications may all be indicated in treating psychoses.
- Several new atypical and depot antipsychotic medications (oral brexpiprazole and depot aripiprazole and paliperidone) are available on the PBS.
- When risk is high or escalating, safety is paramount and urgent referral should be considered.
- Monitoring and managing the long-term physical health of people with schizophrenia is crucial to reducing morbidity and mortality.
- GPs have a key role in recognising substance misuse and supporting behavioural change.

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Physical health disorders are often comorbid, and the life expectancy of people with schizophrenia is as much as 25 years lower than that of the general population.[6] About 80% of this excess mortality is attributable to physical illness.[7]

GPs are often the first point of contact for people with psychoses, as well as providing care for their physical health (Box 1 and Tables 1 and 2). Where people are not able or willing to access specialist psychiatric services, many GPs provide specialist-level care. This is particularly true in rural and remote areas, as well as for people with poor insight into their illness and a reluctance to receive treatment. The episodic care practised by stretched mental health services may also increasingly see patients discharged to GP care; hopefully, but not always, when a stable phase of illness has been reached. In Australia, the role of the GP in relation to early detection, engagement in treatment, physical health monitoring and long-term follow up remains crucial for people with schizophrenia. GPs may also play a primary role in the care of itinerant or elderly people with psychosis in hostels or aged care facilities.

Recognition of psychoses

The onset of schizophrenia may be preceded by a protracted prodrome. The prodrome is characterised by months to years of apathy, social withdrawal and deterioration of function, which may be difficult to recognise.

In contrast, acute psychosis (whether the first episode or a psychotic relapse) is often more recognisably manifest by auditory hallucinations, persecutory ideation, referential delusions and passivity phenomena, as well as anxiety and major mood abnormalities. Other abnormalities of perception, possession and thought can occur. Thought disorder and abnormalities of affect modulation are also frequent and may range in severity. In some patients, acute psychosis may be associated with negative syndrome manifestations and cognitive deficits, which tend to be chronic and persistent. Questions to ask the patient to assist with diagnosis are listed in Table 3.[8]

Concerned family members may be the first to detect mental state disturbances and report these to the GP. The patient's family is also a rich source of collateral history. Neither the family nor the patient may recognise the problem as psychosis, especially if more well-known symptoms, such as hallucinatory voices, are not present. Although health literacy regarding mental health disorders is increasing, recognition and understanding of appropriate treatment of psychosis remain poor in the community, highlighting the need for detection and psychoeducation in healthcare settings.[9,10]

Once psychosis is detected, drug-induced psychosis or the presence of a physical illness (e.g. neurological, endocrine, infective) as the cause must be excluded. Physical causes may emerge through direct or collateral history, but more often investigations are needed (Table 1). A physical examination should be performed if possible.

1. MANAGEMENT OF A YOUNG MAN WITH SCHIZOPHRENIA

Michael is a 20-year-old single man studying for an undergraduate degree in commerce and living at home with his parents. His mother is concerned about him. He has been gradually withdrawing since year 11 at school and has struggled academically since entering university. Lately, he has seemed increasingly preoccupied and has begun mumbling to himself. He has stopped attending lectures, as he believes other people are talking about him. He will not eat home-cooked meals and will not say why. His mother does not think he uses illicit drugs.

Michael sees his GP with his mother. The GP asks about his experiences and establishes that he is hearing disembodied voices talking to him. Michael says he has a 'feeling' that things are wrong, which is why he is worried about contamination of food. He feels that people are poking fun at him. He is not sure why. He is also having trouble sleeping.

The GP establishes that the voices are not telling him to harm himself or others and that he does not intend to hurt himself or anyone else. Michael appears quite relieved to disclose his worries and wants to get some help.

The GP orders investigations (Table 1) and prescribes olanzapine, an antipsychotic with sedative properties to help Michael sleep. She provides Michael and his mother with the SANE website details (www.sane.org), so that they can understand more about psychosis, and arranges to see them again the next day to arrange careful follow up with specialist services.

Michael sees a consultant psychiatrist, who reviews the investigations and management. Michael has had good resolution of the psychosis after four weeks, although he has already begun to put on weight (Table 2). The psychiatrist changes the medication to lurasidone, being mindful of the potential for weight gain and sexual side effects in a young man. Michael returns to his university studies after a break.

Michael sees his GP regularly and watches his weight. He is referred to a dietitian to help reduce his weight gain. He is also referred to a psychologist, as Michael wants to examine how he deals with stress so that he can stay as well as possible. Michael's parents intermittently attend both the GP and the psychiatrist with him, as they also want to know how best to help him. The GP carefully monitors Michael's weight, waist circumference, hip-to-waist ratio, blood pressure, fasting blood glucose level and cholesterol and lipid levels every three months in the first year of treatment.

TABLE 1. INVESTIGATION OF INITIAL PRESENTATION OF PSYCHOSIS*

Investigation	Comments
Urinary drug screening	Exclude drug-induced psychosis
Full blood examination	Exclude infection
Thyroid function test	Exclude thyroid-induced mood disorder
C-reactive protein, erythrocyte sedimentation rate	Exclude inflammatory and autoimmune disorders
Vitamin B_{12}, folate	Exclude nutritional disorders
Screening for hepatitis, HIV, sexually transmitted diseases	If indicated
Urea and electrolytes, liver function test, prolactin, fasting glucose, cholesterol and triglycerides	Establish baseline levels; may be affected by medication
ECG	Establish baseline
Anti-NMDA, anti-VGKC, anti-GAD antibodies	Especially if rapid onset or neurological features are present May need neurologist to interpret findings
CT brain scan and electroencephalogram	Only if neurological indications or focal neurological signs are present

* Adapted from Galletly C, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders. Aust N Z J Psychiatry 2016; 50: 410-472.[3]

Abbreviations: GAD = glutamic acid decarboxylase; NMDA = N-methyl-D-aspartate; VGKC = voltage-gated potassium channel.

Treatment

The overarching principles of treatment are outlined in Box 2. Treatment is aimed at ensuring safety, symptom reduction and return of function and quality of life. This should occur within a framework of shared decision-making and respect for autonomy, unless risk escalates unacceptably.

When psychosis is detected, the next step is to identify the patient's illness phase: initial presentation, acute, recovering, remitted, relapsed, chronically active or chronically negative. This will determine the treatment plan needed by the patient (Table 4).

In the patient's initial presentation of psychosis, there is an emphasis on detection, engagement, initiation of treatment and psychoeducation. Initial presentations of psychosis often involve acute symptoms that have a less predictable risk profile and may require inpatient treatment for risk containment. This is followed by a recovery phase, in which the patient may still be experiencing attenuated symptoms, as well as adjusting to medication side effects and the social impact of the illness. For patients who experience complete remission, the emphasis is on maintaining

TABLE 2. SIDE EFFECTS AND TOXICITY OF ANTIPSYCHOTIC MEDICATIONS AVAILABLE IN AUSTRALIA*

Antipsychotic	Usual oral dose	Depot dose	Common side effects	Risks
Atypical antipsychotics				
Amisulpride	200 to 800 mg daily	N/A	Dystonia, sexual and menstrual disturbances, hyperprolactinaemia	Antipsychotic with highest risk of causing QTc interval prolongation
Aripiprazole	10 to 30 mg in the morning	300 to 400 mg every 4 weeks	Akathisia, initial activation	
Asenapine	5 to 20 mg at night	N/A	Oral hypoaesthesia, sedation	
Brexpiprazole	2 to 4 mg in the morning	N/A	Akathisia, initial activation	
Clozapine	300 to 900 mg at night	N/A	Weight gain, sedation, hypersalivation, dizziness, constipation	Neutropenia, myocarditis, cardiomyopathy, seizures
Lurasidone	40 to 80 mg twice daily (with food)	N/A	Nausea, akathisia	
Olanzapine	10 to 20 mg at night	Complex initiation (see PI) Every 2 weeks: 150 mg (= 10 mg oral) 210 mg (= 15 mg oral) 300 mg (= 20 mg oral) Every 4 weeks: 300 mg (= 10 mg oral) 405 mg (= 15 mg oral)	Weight gain (can be marked), sedation, dry mouth	Highest risk of causing metabolic syndrome
Paliperidone	6 to 12 mg in the morning	Rapid loaded (see PI) 25 to 150 mg every 4 weeks 175 to 525 mg every 12 weeks	Weight gain, menstrual and sexual disturbances, marked hyperprolactinaemia	
Quetiapine	300 to 750 mg at night	N/A	Sedation, dizziness, weight gain, anticholinergic effects	Dose-dependent postural hypotension
Risperidone	6 to 12 mg at night	25 to 50 mg every 2 weeks	Weight gain, menstrual and sexual disturbances, marked hyperprolactinaemia	Initial postural hypotension (similar to prazosin)
Ziprasidone	40 to 80 mg twice daily (with food)	Short-acting only: 10 mg every 2 hours or 20 mg every 4 hours IM, max 40 mg daily†	EPSE, initial activation	Antipsychotic with second-highest risk of causing QTc interval prolongation
Typical antipsychotics				
Chlorpromazine	200 to 600 mg at night	N/A	Sedation, hypotension, photosensitivity, hyperprolactinaemia	Dose-dependent postural hypotension
Flupentixol	N/A	20 to 40 mg every two weeks	EPSE, activation, weight gain, hyperprolactinaemia	
Haloperidol	1 to 5 mg at night	50 to 200 mg every four weeks	EPSE, hyperprolactinaemia	
Periciazine	10 to 20 mg at night	N/A	EPSE, sedation, hyperprolactinaemia	
Zuclopenthixol	10 to 20 mg at night	Zuclopenthixol decanoate: 200 to 400 mg every 4 weeks Short-acting zuclopenthixol acetate: 50 to 150 mg IM every 2 to 3 days, max 400 mg in 2 weeks‡	EPSE, sedation, weight gain, hyperprolactinaemia	

* Fluphenazine and trifluoperazine are not included as they are no longer supported in Australia by manufacturers. † This is used for acute behavioural management and never in general practice. ‡ Never used in community or general practice settings.

Abbreviations: EPSE = extrapyramidal side effects; IM = intramuscularly; N/A = not applicable.

TABLE 3. ELICITING CLUSTERS OF SYMPTOMS AND SIGNS IN SCHIZOPHRENIA*

Symptom cluster	Examples	Questions or observations that may elicit symptoms
Perceptual disturbance	Auditory hallucinations	Do you hear voices of people talking to you even when there is no one nearby?
	Visual hallucinations	Do you see things that others don't seem to see?
	Gustatory hallucinations	Can you taste odd things?
	Olfactory hallucinations	Can you smell strange things?
	Somatic or tactile hallucinations	Have you felt odd sensations on or in your body?
Delusional content	Persecutory delusions	Do you feel that you are being watched or followed? Is there anyone working against you?
	Referential delusions	Do you feel like things around you have special meaning just for you? Do people on the radio or TV communicate with you?
	Grandiose delusions	Do you feel that you have any special talents or powers?
	Religiose delusions	Do you have a special relationship with God?
	Erotomanic delusions	Is there someone who has a special interest in you?
Passivity phenomena	Thought insertion, thought withdrawal, thought broadcasting	Do you feel like anyone can interfere with your thoughts directly, telepathically? Can anyone else hear your thoughts?
Anxiety	–	Have you been feeling unusually anxious? What seems to be causing this?
Thought disorder	Loosened associations	By observation
Mood symptoms	Depression	Have you been sadder or down in the dumps recently? Has it been more difficult to enjoy things lately?
	Mania	Have you been feeling especially good lately, more cheerful and energetic?
Negative syndrome	Flat affect, poverty of speech, anhedonia, apathy, asociality	Do you have a sense of pleasure in things? Do you feel motivated? Do you seek out social opportunities?
Cognitive deficits	Reduced abstraction, reasoning, sequencing	Executive function testing, such as calculation, proverbs, Luria three-step test and trail-making B test

* Adapted from Blashki G, et al. Managing schizophrenia in general practice. Aust Fam Physician 2004; 33: 221-227.[8]

remission, reducing side effects, returning to social function and determining length of treatment. Some patients will develop a chronically psychotic state; for these patients, the emphasis is on providing optimised pharmacological treatment (with clozapine, if possible) and psychosocial rehabilitation.

The types of management options in schizophrenia are also dependent on the symptoms and subsyndromes present, such as prominent anxiety, mood symptoms or negative syndromes. Such syndromes may affect the choice of antipsychotic medication, other medications such as antidepressants, or psychological interventions such as supportive or cognitive behavioural therapy.[3]

Medication prescribing

All antipsychotic medications block dopamine D2 receptors in the mesolimbic tract of the brain, and dysregulation of brain dopamine mechanisms is probably the common pathological factor in schizophrenia and related psychoses.[4] Conventional, or typical, antipsychotic medications cause extrapyramidal side effects when given at doses that are effective for treatment of psychosis through

2. PRINCIPLES OF MANAGEMENT IN PSYCHOSES

- Early detection
- Risk assessment and management
- Investigations and exclusion of other conditions
- Establishment of therapeutic alliance
- Provision of psychoeducation
- Maintenance of autonomy and shared decision-making
- Symptom reduction
- Return of function
- Support for families and carers

TABLE 4. PHASE OF ILLNESS AND TREATMENT GOALS

Phase	Goals of treatment
Initial presentation	Detection, engagement, initiation of treatment, psychoeducation and risk management
Recovery	Tolerability of treatment, adherence, psychoeducation, adjustment and social recovery
Remission	Relapse prevention, monitoring for emergent side effects, consolidating social function and determining length of treatment
Acute/relapse	Engagement, review of treatment efficacy and side effects
Chronic active or chronic negative	Optimising medication (with clozapine, if possible) and psychosocial rehabilitation

nonselective dopamine blockade.

Second-generation, or atypical, antipsychotic drugs are associated with a substantially lower risk of extrapyramidal side effects (including tardive dyskinesia) when given at clinically effective doses. Most atypical antipsychotics also block serotonin receptors, and the combination of serotonin and dopamine antagonism may be responsible for the lower frequency of movement disorders with these drugs. More recently, partial dopamine agonists, such as aripiprazole and brexpiprazole, have been introduced.[11]

Antipsychotics and their common side effects and risks are listed in Table 2. All antipsychotic medications can cause neuroleptic malignant syndrome, lowering of seizure threshold and cardiac arrhythmias.

Medication choices are best based on side-effect profile, acceptability of side effects to the patient and likelihood of efficacy. Patient education regarding the comparative severity of side effects is important in making informed choices about medication. The comparative severity of several common side effects (weight gain, sedation and QTc interval prolongation) of the atypical antipsychotic medications is shown in Table 5.[12]

Although there are risks associated with antipsychotic medications, epidemiological studies uniformly show that absence of antipsychotic treatment is associated with the highest mortality, and mortality is reduced with the use of effective antipsychotic medication.[6] All causes of premature death, including suicide and cardiac disease, are reduced by treatment with antipsychotic medication. Of note, mortality is lowest with use of long-acting injectable treatments and clozapine. Prescribing of high-dose antipsychotic medication is associated with higher mortality.[13]

Adherence to medication is key in determining the efficacy of treatment and preventing relapse. Absorption of some oral medications, particularly lurasidone and ziprasidone, may be affected by food. Depot antipsychotic treatment is associated with lower rates of relapse than treatment with atypical antipsychotics, even in patients who adhere to oral treatment.[14]

Switching medications is necessary when there has been a lack of efficacy or problematic side effects. Care should be taken to prevent relapse of illness when changing medication (Table 6). Cross-tapering strategies can be helpful in higher-risk situations. Combining antipsychotic medications is generally a specialist practice and requires extra monitoring of QTc interval length and other side effects.

The simultaneous use of more than one psychotropic medication is common in Australia, but it should have a clear rationale and demonstrated efficacy.[15] Patients with mood symptoms may benefit from the addition of a mood stabiliser or antidepressant (Table 7). Antidepressant monotherapy should be used with caution, as it may exacerbate psychosis. Care should be taken to avoid pharmacokinetic interactions, such as those of selective serotonin reuptake inhibitors (particularly paroxetine, fluoxetine and fluvoxamine) and anticonvulsants (e.g. carbamazepine).

Patients with severe negative symptoms are likely to be taking clozapine and may benefit from the addition of low-dose amisulpride or a partial dopamine antagonist, such as aripiprazole.[16] Benztropine may be prescribed for Parkinsonian side effects of antipsychotic medication, with caution regarding anticholinergic side effects, such as dry mouth and constipation.

Medication use in pregnancy

Women with schizophrenia who may become pregnant should be aware of the importance of contraception and the risks associated with medication. Women of childbearing age should be warned to avoid becoming pregnant while taking sodium valproate, which is associated with fetal neural tube, cardiac and facial malformation, as well as neurobehavioural effects.[17]

Antipsychotic medications do not appear to have a clear signal for teratogenicity, when corrected for confounders such as smoking and obesity.[18] There is a higher rate of perinatal complications when antipsychotic medication is prescribed, but the benefits of treatment usually outweigh the potential complications.[19] Women who become pregnant while taking antipsychotic medication can be referred to the National Registry of Antipsychotic Medication in Pregnancy (www.maprc.org.au/nramp).

Stopping antipsychotic medication

Advice about whether and how to cease medication is a frequent conundrum in clinical practice. For patients with

TABLE 5. RELATIVE SEVERITY OF COMMON SIDE EFFECTS OF ATYPICAL ANTIPSYCHOTIC MEDICATIONS, LISTED FROM HIGHEST TO LOWEST RISK*

Weight gain	Sedation	QTc interval prolongation
Olanzapine	Quetiapine	Amisulpride
Clozapine	Clozapine	Ziprasidone
Quetiapine	Olanzapine	Asenapine
Risperidone/paliperidone	Risperidone	Risperidone
Asenapine	Asenapine	Olanzapine
Lurasidone†	Lurasidone‡	Quetiapine
Aripiprazole/brexpiprazole†	Ziprasidone‡	Paliperidone
Amisulpride†	Aripiprazole‡	Aripiprazole†
Ziprasidone†	Amisulpride‡	Lurasidone†

* Adapted from Leucht S, et al. Comparative efficacy and tolerability of 15 antipsychotic drugs in schizophrenia: a multiple-treatments meta-analysis. Lancet 2013; 382: 951-962.[12]
† Low risk.
‡ Low risk, may have an activating effect and impair sleep.

TABLE 6. CONCERNS ASSOCIATED WITH CEASING OR SWITCHING ORAL ATYPICAL ANTIPSYCHOTICS

Medication	Effects of ceasing	Concerns when switching
Amisulpride	Increased fertility	Monitor QTc interval length in cross-tapering
Olanzapine	Cholinergic rebound	Monitor for serotonin effects in cross-tapering with quetiapine or clozapine
Clozapine	Cholinergic rebound Insomnia	Monitor closely for relapse Monitor for serotonin effects in cross-tapering with quetiapine or olanzapine
Risperidone/ paliperidone	Increased fertility	No specific concerns
Quetiapine	Cholinergic rebound Insomnia	Monitor for serotonin effects in cross-tapering with olanzapine or clozapine
Ziprasidone	Unlikely	Monitor QTc interval length in cross-tapering
Aripiprazole/ brexpiprazole	Unlikely	Long half-life, so cross-tapering not required
Lurasidone	Unlikely	No specific concerns
Asenapine	Unlikely	No specific concerns

recurrent or chronic psychosis, cessation of medication is likely to result in relapse.[20] The situation in those with first-episode psychosis is less clear. For the past 10 years, the advice in the Royal Australian and New Zealand College of Psychiatrists (RANZCP) guidelines has been to continue medication for 12 months.[21] However, new data suggest that patients who cease antipsychotic medication after a first episode have a greater than 90% risk of relapse over two to three years.[22] It is likely that a recommendation to continue antipsychotic medication for significantly longer will at some point supersede the current RANZCP recommendation for first-episode patients who have fully recovered.

When a decision to cease has been made, care should be taken to slowly wean the medication and to have a relapse safety plan in place (Table 8). Safety planning can reduce risk and uncertainty for patients and their families and can improve transition into care when needed.

Psychosocial treatment

A major component of schizophrenia treatment is psychosocial.[3] GPs can engage in psychosocial treatment through the provision of psychoeducation and referral. Referral to psychology services may assist patients with symptom management and resilience to stress.

Patients or their GPs can refer to non-government psychosocial services in many states. Aspects of psychosocial rehabilitation are being funded under the National Disability Insurance Scheme (NDIS) for people aged under 65 years. GPs may be required to provide supporting documentation for NDIS applications.

Recovery model

Reflecting a changing paradigm in both public and private psychiatric services, the 'recovery model' is associated with changes in the Mental Health Acts of several states that foster increased autonomy. 'Recovery' aims to place the person's values at the centre of treatment, to reduce stigma and promote hope. It is centred on the idea that recovery is not the presence or absence of symptoms but rather a set of personal and social goals determined by the individual.[23] Although occasionally regarded as anti-psychiatric, the recovery model is consistent with best-practice comprehensive psychiatric treatment.[24]

Physical health monitoring

Physical health status and access to physical healthcare services remain poorer

for people with psychosis.[25] Monitoring of physical health is therefore a major role of Australian GPs in providing care for patients with schizophrenia and related psychoses.

GPs have historically focused on QTc interval monitoring, movement disorders and smoking cessation. Newer challenges have included monitoring and managing metabolic problems, which are more likely to occur with some of the newer antipsychotic agents.[26] Antipsychotic medications can elevate prolactin levels, and the consequences of this, such as amenorrhoea, also need to be understood. Recommended monitoring of physical health for patients with schizophrenia is shown in Table 9.[26]

Drug and alcohol issues

Misuse of drugs and alcohol is commonly associated with psychoses and substantially worsens outcomes.[27] Psychosis is exacerbated by substances that increase dopamine centrally, with amphetamines, methamphetamines and high-concentration tetrahydrocannabinol cannabis the most frequent examples. Synthetic cannabis can be particularly problematic and undetectable on urinary drug screening.

Misuse of anticholinergic drugs can occur, as this may induce euphoria, whereas misuse of other substances, including alcohol, may reflect self-medication of psychotic symptoms or psychosocial distress associated with schizophrenia. Recognition of comorbidity and motivational interviewing remain the keys to reducing substance misuse in the general practice setting.[28] Effective treatment of psychosis (particularly with clozapine) also reduces substance misuse. Structured treatment programs, if available and acceptable to the patient, are helpful.

Smoking is highly comorbid with psychiatric disorder generally, and up to two-thirds of people with psychosis are current smokers.[25] In those who are able to quit smoking, the blood concentration of some medications (e.g. clozapine, olanzapine) may be increased suddenly, causing increased side effects and toxicity.

TABLE 7. OTHER NONANTIPSYCHOTIC MEDICATIONS USED IN SCHIZOPHRENIA

Class	Medications	Indications
Antidepressants	SSRIs, SNRIs, tricyclic antidepressants, mirtazapine, reboxetine, mianserin, vortioxetine, agomelatine, bupropion	Anxiety, depression
Mood stabilisers	Lithium, sodium valproate, lamotrigine, carbamazepine	Bipolar mood features
Anticholinergics	Benztropine	Extrapyramidal side effects
Benzodiazepines	Diazepam, oxazepam	Acute agitation

Abbreviations: SNRI = serotonin and noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor.

TABLE 8. EXAMPLES OF COLLABORATIVE SAFETY PLANNING

State	Signs or symptoms	Action
No symptoms	• Feeling well • No concerns from key supports	• Continue current plan
Early warning signs	• Poor sleep • Impaired concentration • Time off work • Minor concerns from support person	• Increase medication to previous dose • Seek review with physician
Relapse symptoms	• Auditory hallucinations • Persecutory thinking • Clear concerns from support person	• Increase medication to previous dose • Immediate medical review
Red flag symptoms	• Risk to self or others	• Go to the emergency department • Seek admission

Diversion of medication for street sale may occur with psychotropic drugs. Quetiapine is known to have a prison and street value.[29,30]

Referral to other services

Where possible, assessment by a consultant psychiatrist, who can then assist with the formulation of a longer-term management plan, should be undertaken. Patients with schizophrenia and related psychoses who are primarily managed in general practice should have periodic reviews with a consultant psychiatrist. Such initial consultations and reviews are facilitated through the Medicare item 291 scheme.

Some general practice clinics have access to a mental health nurse. In urban and relatively affluent areas, it is easier to access private psychiatry referral and advice, especially regarding medication, whereas telepsychiatry has made access to specialist private psychiatry services more available to rural and remote populations.[3] Psychological intervention may be accessed privately; up to 10 sessions can be subsidised through Medicare in the Better Access scheme.

Many patients will derive benefit from dietitian and dental services. Exercise programs are also valuable in optimising physical health. Psychosocial support services, as well as occupational therapy options, can be accessed directly or through NDIS applications. Ideally, for patients with severe and unremitting psychotic illness,

TABLE 9. RECOMMENDED LONG-TERM GENERAL PRACTICE MONITORING OF PHYSICAL HEALTH IN PATIENTS WITH SCHIZOPHRENIA*

Area	Risk of antipsychotic treatment	Monitoring	Frequency	Interventions
Metabolic	• Increased weight • Increased risk of type 2 diabetes • Increased risk of hypercholesterolaemia • Increased risk of hypertension	• BMI • Waist circumference • Hip-to-waist ratio • Fasting blood glucose level • Fasting cholesterol level • BP	• Baseline • Three-monthly in first year • Six-monthly thereafter	• Refer to dietitian • Recommend regular exercise • Consider prescribing metformin for patients with weight gain • Perform glucose tolerance test if blood glucose level >5.6 mmol/L • Prescribe statin if triglycerides >1.7 mmol/L or HDL-cholesterol <1.03 mmol/L (men), <1.29 mmol/L (women) • Prescribe antihypertensive if systolic BP >130 mmHg or diastolic BP >85 mmHg • Refer to obesity clinic if BMI >25 kg/m^2 or waist circumference >94 cm (men), >80 cm (women)
Respiratory	• Sleep apnoea related to weight gain	• Assessment for obstructive sleep apnoea	• Annually	• Refer for sleep study
Smoking	• Not associated with medication	• Check smoking status	• Every review	• Perform motivational interviewing at every opportunity to quit
Cardiac conduction abnormality	• Prolonged QTc interval	• ECG	• Annually	• Review by cardiologist if QTc interval >440 ms (men), 460 ms (women)
Prolactin monitoring	• Elevated prolactin level	• Prolactin level	• Annually	• Consider antipsychotic dose, possible switch to an antipsychotic less likely to elevate prolactin
Movement disorder	• EPSE • Dystonia • Akathisia • Tardive dyskinesia	• Check for cogwheeling and gait disturbance • Check for orofacial dyskinesia	• Annually	• Consider prescribing benztropine, dose adjustment or change of medication
Hepatic	• Transaminitis and fatty liver with weight gain	• Liver function test	• Annually	• Refer to gastroenterologist for abnormality
Ophthalmic	• Cataracts with quetiapine or chlorpromazine	• Eye check	• Annually	• Refer to ophthalmologist for abnormality
Fertility	• Risks in pregnancy • Reduced fertility with raised prolactin level • Risk of failure of OCP with AEDs	• Discuss with women of childbearing age	• As needed	• Offer contraception to women of childbearing age • Consider alternatives to OCP when taking an AED that may interfere with its efficacy
Bone density	• Osteoporosis	• Bone density screening for at-risk individuals	• As needed	• Refer to endocrinologist for abnormality
Routine health care	• Not associated with medication	• Routine screening	• As needed	• Encourage routine screening (e.g. breast screening, faecal occult blood testing) in older patients

* Adapted from Stanley S, Laugharne J. Clinical guidelines for the physical care of mental health consumers. Perth: University of Western Australia; 2010.[26]
Abbreviations: AED = antiepileptic drug; BMI = body mass index; BP = blood pressure; EPSE = extrapyramidal side effects; OCP = oral contraceptive pill.

comprehensive treatment for schizophrenia is best delivered with input from a multidisciplinary team.

Referral to specialist public or private psychiatric services should always be made when significant risk is emergent, including risk related to psychosocial or functional decline in younger people. Referral should also be considered when the diagnosis is unclear, when the patient does not have competence to consent and is refusing treatment, and when treatment is ineffective or intolerable.

Families and carers

GPs are a crucial source of support for the families and carers of people with schizophrenia, in providing information and psychoeducation for families and psychological and physical health support for carers. Information about other support services, including peer support, can be accessed on the internet, such as through SANE Australia.[31]

Conclusion

GPs continue to play a major role in the management of schizophrenia, from initial presentation through to long-term remitted and chronic presentations. Effective management is enhanced by an understanding of the nature of the disorder, as well as treatment principles and practices. A good grasp of medication options and physical health management makes the GP an invaluable resource for patients and their families. MT

References

A list of references is included in the online version of this article (www.medicinetoday.com.au).

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