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We are confident that this CPD Section of the Irish Journal of Psychological Medicine will prove to be a valuable resource for consultant psychiatrists, psychiatric trainees and all journal readers. We welcome feedback from readers and, especially, any suggestions for topics to be covered in future CPD modules. Suggestions should be emailed to: [psychological@medmedia.ie](mailto:psychological@medmedia.ie)

## Current approaches to the management of schizophrenia

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Schizophrenia is the 'bread and butter' of the adult mental health services. While the incidence rate is low, chronicity of the illness in one third of patients means the prevalence is high (1.1%),<sup>1,2</sup> resulting in many patients attending services over all stages of the illness for a long time. While there are patterns to the illness, the course of schizophrenia is unique to that individual. Management strategies of schizophrenia need to take into account the varied course of illness the individual experiences. This CPD module discusses current approaches to the management of schizophrenia in general adult psychiatry under biopsychosocial sections at all stages of the illness (*Table 1*).

### Pharmacological management of schizophrenia

The mainstay of treatment for schizophrenia remains medication. The primary pharmacological action of antipsychotic drugs is their antagonistic effect on D2 receptors. Antipsychotic medication includes the older first generation "typical" antipsychotics (FGA) including chlorpromazine, haloperidol, trifluoperazine etc; and the newer second generation antipsychotic medication "atypical" antipsychotics (SGA), including clozapine, olanzapine, quetiapine etc. First generation antipsychotics are traditionally those that give rise to extra pyramidal side effects (EPSE),

hyperprolactinaemia and tardive dyskinesia (TD). While second generation antipsychotics are increasingly used, they have marked metabolic side-effects, are more costly, and trials looking at efficacy and cost found that non-clozapine atypicals were no more effective than first generation antipsychotics and considerably more expensive.<sup>3,4</sup>

In practice, FGAs are used in lower doses than previously, and it is suggested that the therapeutic and adverse effects of typical drugs can be separated by careful dosing.<sup>5</sup> In addition, some atypicals show dose-related EPSEs, some induce hyperprolactinaemia and some may give rise to TD. The essential difference between the FGA and SGA is the therapeutic index in relation to acute EPSEs. Where previous clinical guidelines recommended SGAs as first line treatment primarily to reduce the risk of EPSEs,<sup>6,7</sup> updated systematic reviews on effectiveness and side effects, particularly with regard to adverse metabolic sequelae (*see Table 2*) now recommend that choice of antipsychotic should be made with individuals based on other parameters such as symptom and side effect profile, and cost.<sup>3,4,7-10</sup>

### Approaches to treatment resistance

Treatment resistance is a common problem in one third to one fifth of patients.<sup>11-13</sup> The essence of treatment resistance is the presence of either poor community or psychosocial functioning, or enduring positive psychotic symptoms despite trials of medication that have been adequate in terms of dose, duration and adherence. Other factors that contribute to poor functioning

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**Table 1: Management of schizophrenia**

Biological	Pharmacological –antipsychotics, other medications; Management of physical health and adverse events
Psychological	CBT, cognitive remediation, psychotherapies, family intervention, art therapies, psychoeducation
Rehabilitative / Psychosocial	Vocational rehabilitation; social skills training

include persisting negative symptoms, cognitive deficits, and affective symptoms, disturbances of behaviour or troubling medication side effects.

### Clozapine

Where there is little evidence for superiority of any one FGA or SGA over another in terms of efficacy, clozapine is shown to be superior to FGA in terms of reducing symptoms and risk of relapse.<sup>14,15</sup> In comparison with SGA the evidence is less conclusive, with only 30-60% of treatment resistant schizophrenia showing a satisfactory response despite adequate dosage and duration of treatment with clozapine.<sup>14,16-17</sup> While clinical guidelines recommend the combination of clozapine with a second antipsychotic, such as sulpiride, amisulpiride or haloperidol for refractory psychotic symptoms, and mood stabilisers such as lamotrigine and/or antidepressants where mood disturbance is thought to contribute, evidence for the various combinations of medications used remains uncertain.<sup>6</sup> The most recent Cochrane review published in 2009 examined three small randomised controlled trials looking at combination strategies (risperidone, sulpiride, ziprasidone and quetiapine) found that none was superior to the others, concluding that properly conducted, larger, independent randomised controlled trials are needed to give a more reliable estimate of effect.<sup>17</sup> Clozapine is licensed for use in treatment refractory schizophrenia only at the moment due to life threatening side effects such as agranulocytosis (0.7%). However, clozapine substantially reduces mortality in schizophrenia, primarily due to a reduction in the rate of suicide.<sup>18-20</sup> A recent Finnish study concluded that restrictions on the use of clozapine should be reassessed as it was associated with a lower mortality at 11 years than any other antipsychotic.<sup>21</sup>

### High dose antipsychotics

The use of high doses of antipsychotic medication, eg. a single antipsychotic prescribed above the recommended doses in the BNF or a combination of two antipsychotics resulting in a cumulative dose of >100%, is common. A quarter of hospitalised patients are prescribed high dose antipsychotics, and there is little evidence to support any benefit to such a strategy.<sup>22</sup>

### Monotherapy v combination therapy

A surprising number of people are on two or more combination antipsychotics, American studies report rates of 33-43% use two antipsychotic medications, with almost 10% receiving three;<sup>23,24</sup> European studies report a rate of almost 20% for combination therapy.<sup>25</sup> There is limited evidence available for this despite the widespread nature of the practice. In reality, combination is tried too early in acute treatment before adequate dose and duration of the initial antipsychotic. Better evidence for the various strategies used is desirable, particularly as combining leads to increased side effects. There is very little biological rationale as to why combination should be superior to monotherapy, as

most antipsychotics work by blockade of D2/D3 receptors, and combinations of antipsychotics with high affinity for D2/D3 blocking seem pointless, particularly when considering that clozapine is the most effective antipsychotic and yet blocks only 30-50% of D2/D3 receptors.

### Other medications

There is some evidence that the use of antidepressants, mood stabilisers and second generation antipsychotics can be neuro-protective<sup>26</sup> and research is underway looking at other agents such as fish oils and erythropoietin. There is limited evidence showing addition of omega-3-EFA can reduce the amount of antipsychotics required, though the most recent Cochrane systematic review states that though fish oils may be of benefit the evidence remains inconclusive.<sup>27</sup> Antidepressants increase BDNF<sup>26</sup> and use in addition to antipsychotics may reduce negative symptoms, with the combination showing symptom reduction and reduced severity, however the review concluded that the amount of data available still remains limited.<sup>28</sup>

### Physical health and schizophrenia

There is a high preponderance of poor physical health in people with schizophrenia. The leading cause of premature excess mortality in people with schizophrenia is cardiovascular disease caused mainly by their adverse risk factor profile.<sup>29</sup> Antipsychotic medication increases the risk for metabolic syndrome, a recognised cluster of features (truncal obesity, dyslipidaemia, hypertension, glucose intolerance/insulin resistance), that increase the risk of cardiovascular disease, type 2 diabetes and mortality.<sup>30-32</sup> Guidelines recommend that these conditions are managed in primary care settings.<sup>7,34</sup> This strategy presupposes that all patients with schizophrenia attend their GP, where studies show this is often not the case. Editorials recommend that where a person does not attend primary care, secondary care should monitor their physical health.<sup>35</sup> The NICE guidelines recommend that people with schizophrenia should have their physical health monitored at least once a year. Focus should be on the cardiovascular risk factors, BMI, abdominal waist circumference, blood pressure, fasting lipids and glucose. Specific medications will require specific monitoring, for example people on certain types of antipsychotic medication require an ECG before commencing medication, and those prescribed atypical antipsychotics should have fasting lipids, fasting glucose and BMI performed. Clozapine has a well described monitoring protocol monitoring for neutropenia and sepsis. Typical and certain atypical antipsychotics at high doses should have yearly assessment for EPSE. Patients on depot medication should have regular monitoring of EPSEs.

### Psychological management approaches

Although pharmacological therapy has been the mainstay of treatment of psychosis since the 1950s, recent decades have

seen the emergence of psychological and psychosocial therapies as adjunctive treatment. Treatment, be it pharmacological or psychological, aims to reduce the severity of the psychotic episode, reduce the likelihood of relapse, and treat problems associated with residual symptoms. In addition, psychological interventions aim to improve specific psychological or social aspects of functioning and improve long-term outcomes. There are specific challenges inherent in involving a person with schizophrenia in psychological therapy that need to be considered. These include effective engagement of the person, a shared view of the illness, negative symptoms such as withdrawal and lack of motivation and cognitive and information processing problems.

### **Cognitive behavioural therapy (CBT)**

CBT approaches were first applied to reduce distressing psychotic symptoms, and later broadened to include working with emotional problems and functioning. A specific CBT approach directed at compliance is called adherence therapy. Research has shown that CBT is effective in the treatment of schizophrenia.<sup>38</sup> In the UK, the NHS follows the NICE guidelines which recommend offering CBT to all people with schizophrenia. In contrast, in the US, the NIMH recommends CBT as an adjunctive treatment that may benefit people with schizophrenia. The majority of research has been carried out in the UK, and UK clinicians are more likely to practice CBT, rate CBT effectiveness more highly and are more optimistic about chances of recovery.<sup>39</sup>

The NICE guideline recommends that CBT be delivered on a 1:1 basis over at least 16 planned sessions, following a treatment manual, including at least one of the following components – monitoring of own thoughts, feelings and behaviours with respect to their symptoms, promoting alternative ways of coping with the target symptoms, reducing distress and improving functioning. CBT can be offered in the acute phase or to promote recovery and remission. Updated NICE guidelines published in 2009 found that CBT, when compared with standard care, showed reduced admission rates 18 months after finishing CBT, reduced the duration of admission, reduced BPRS and PANSS scores though had less effect on actual positive symptoms, and improved social outcome at one year.<sup>7</sup> Use of CBT for schizophrenia in Ireland is limited to certain clinical settings, usually in the context of research, due to resource restrictions. One such setting is CBT for first episode psychosis within early intervention, where CBT is provided as a phase-specific group based intervention.

### **Cognitive remediation**

Cognitive impairment in schizophrenia is well described. It ranges from 50-80% depending on the severity of the illness,<sup>40</sup> occurs near the onset of the illness and appears to be a trait rather than a state.<sup>41</sup> Deficits are described in the areas of executive function including problem solving, attention, verbal memory and working memory. Evidence shows that cognitive impairment is strongly related to functioning in areas such as work, social relationships and independent living,<sup>42</sup> and predicts response to rehabilitation, particularly outcomes such as work, social skills and self care.<sup>43</sup>

As the neural pathways which govern these processes are still little understood, pharmacological management has had little success in improving the cognitive deficits associated with psychotic illness, and there have been great efforts to develop

cognitive rehabilitation approaches and programmes to address these deficits. Cognitive remediation was originally developed to address brain injury, and adaptations for schizophrenia include addressing crucial areas such as motivation and social skills.

Models of cognitive remediation described include NEAR (neuropsychological educational approach to remediation), done in a group setting twice a week; IPT (integrated psychological therapy), done in a group setting three times a week; CRT ((cognitive remediation therapy), done individually for one hour daily over 40 days; CET (Cognitive Enhancement Therapy), done in a group setting; and TSWP (Thinking Skills for Work Program) done either individually or in a group.<sup>44</sup>

A meta-analysis of 26 randomised controlled showed moderate improvements in cognitive outcomes across a variety of programme types, duration and settings; the type of programme used does not seem to be as important as the attempt. However, sustained improvements in vocational and psychosocial outcomes are more likely when cognitive remediation is offered in addition to vocational rehabilitation and /or supported employment services.<sup>45</sup>

Those who received cognitive remediation also improved functional outcomes, such as obtaining and working in competitive jobs, quality and satisfaction in personal relationships, and the ability to solve interpersonal problems, when combined with psychiatric rehabilitation. These are important outcomes as the ultimate goal of cognitive remediation is to improve psychosocial functioning.<sup>45</sup>

### **Adherence therapy**

Fifty percent of persons with schizophrenia are non-compliant with medication.<sup>46</sup> Non-adherence is reported to result in higher relapse rates, higher rates of admission and longer duration of hospitalisation.<sup>47</sup> Adherence therapy is designed as a brief, pragmatic intervention, typically four to eight sessions long, and borrows from motivational interviewing, psychoeducation and cognitive therapy.<sup>48</sup> The evidence for adherence therapy is mixed, with some trials offering good outcomes and cost-effectiveness in comparison to supportive psychotherapy, and later larger trials not replicating this result.<sup>7</sup>

### **Psychoeducation**

Psychoeducation has evolved over and above the provision of information. Psychoeducation can take place individually or in groups and runs into management strategies, coping techniques and role-play. As a format, psychoeducation can overlap with family intervention, particularly when families or carers and the individual are both involved. Desired stated outcomes include improved insight, treatment adherence, symptom management, reduction in relapse, and increased knowledge and understanding.<sup>49</sup> Given the overlap between good standard service provided information and psychoeducation, and between family education and psychoeducation, it is difficult to assess the evidence for discrete psychoeducation programmes.<sup>7</sup>

### **Other psychological approaches**

Supportive psychotherapy or counselling is routinely used as a comparator when evaluating other forms of psychotherapy, rather than evaluated on its own merits. There is no convincing evidence that supportive psychotherapy improves outcomes in people with schizophrenia, however in many locales where resources limit access to therapies such as CBT or family education,

supportive psychotherapy in the form of individual or group work, may be helpful in alleviating distress and in facilitating engagement.<sup>7</sup> Psychoanalytic or psychodynamic psychotherapy have no demonstrable efficacy when compared to other forms of psychotherapy for psychosis; however practices used in this form of therapy can be useful in gaining understanding of the patient's experience.<sup>7</sup> Arts therapies including drama, art and music therapy have a growing evidence base, specifically in the reduction of negative symptoms; however they are limited by resources and the availability of qualified therapists.<sup>7</sup>

### Family education

Carer or family education enables families to learn about schizophrenia, assists with minimising the chances of relapse and, in the acute setting, to be aware of the services and treatment strategies available to the patient after hospitalisation.

The stress and burden of caring for people with schizophrenia can hamper recovery and lead to relapse.<sup>50</sup> Interventions to assist families address this stress take the form of family-systems therapy, cognitive-behavioural therapy and psychoeducational approaches. There is robust evidence from 32 randomised controlled trials that family intervention programmes reduce relapse and re-hospitalisation, and they offer evidence that there is improved symptomatic recovery and enhanced psychosocial and family outcomes.<sup>7,49,51,52</sup>

The NICE guideline recommends offering family intervention to all families of people with schizophrenia who live with, or are in close contact with, the service user. The guideline recommends that family intervention should include the person if practical, that it be carried out for between three months and a year, that it include at least 10 planned sessions, and that it takes into account the family's preference for either single or multi family intervention, though this may be constrained by service resources and practice. The intervention should take into account the relationship between the main carer and the person with SCZ, and that it should have a specific supportive, educational or treatment function and include negotiated problem solving or crisis management work.<sup>7</sup>

### Rehabilitation and psychosocial management

Rehabilitation is the systematic effort to improve the psychosocial functioning of people with severe mental illness.

#### Social skills training

Social skills training is a treatment derived from behavioural and social learning traditions. It was developed to help people with schizophrenia regain their social skills, confidence, ability to cope in social situations, improve quality of life and in addition to aid symptom reduction and relapse prevention.<sup>53</sup> Social skill training commences with a detailed individual assessment, followed by individual or group interventions using positive reinforcement, modelling and goal setting. Tasks such as responding to non-verbal cues are built up to more complex social skills. A recent meta-analysis evaluating the impact of 22 social skills training programmes found a small mean effect size on relapse, but larger mean effect sizes for social skills knowledge, social and daily living skills performance-based assessments.<sup>54</sup>

#### Vocational rehabilitation

Paid employment is a key outcome in the recovery of those with severe and enduring mental illness. Work provides a means

of supporting oneself, allows individuals to participate in society, become independent, and improves self-esteem and quality of life. Despite this, rates of unemployment in schizophrenia are high, up to 80% in various international reviews.<sup>55</sup> Many different types of vocational rehabilitation program have been developed. These have been classified as hospital-based programs, sheltered work, assertive case management, psychosocial rehabilitation including prevocational training (a period of training before entering competitive employment), transitional employment and volunteer placements, counselling and education. Supported employment is placement in competitive employment while offering on the job support.<sup>56</sup>

Outcomes targeted by these interventions are vocational and therapeutic. Vocational outcomes include competitive employment, acquisition of job-related skills, acquisition of any job (paid or volunteer), percentage of time in paid employment (full-time or part-time, competitive or sheltered), total job earnings, level of job (unskilled, skilled, etc.), job satisfaction, and job performance. Therapeutic outcomes include treatment compliance and symptom reduction, functional status in other areas (activities of daily living, maintenance of living situation), self-esteem and subjective quality of life.

In a review of outcomes of vocational rehabilitation during a period in the US when deinstitutionalisation was occurring, Lehman concluded that supported employment showed more promise than transitional or sheltered employment approaches, also improving other therapeutic outcomes such as compliance, symptom reduction and relapse.<sup>57</sup> A systematic review by Crowther *et al* in 2001 concluded that supported employment was more effective than prevocational training in helping people with severe and enduring illness to obtain and keep competitive employment.<sup>55</sup>

### Stages of the illness

#### Prodrome

The prodrome is a period prior to the development of frank psychosis, where the individual displays altered social and occupational functioning and may have some attenuated psychotic symptoms. This period is described as an 'at-risk mental state'. In studies of genetically high-risk individuals (ie. siblings) the risk of developing psychosis is 10-20%. The risk of conversion to psychosis from the prodrome, as studied in specialist centres such as the Personal Assistance and Crisis Intervention (PACE) Clinic in Melbourne, rises to 40-60% in ultra-high risk groups using specific criteria.<sup>58</sup> Recently Cannon *et al* identified five features assessed at baseline which contributed uniquely to the prediction of psychosis: a genetic risk for schizophrenia with recent deterioration in functioning, higher levels of unusual thought content, higher levels of suspicion/paranoia, greater social impairment, and a history of substance abuse. Prediction algorithms combining two or three of these variables resulted in dramatic increases in positive predictive power (ie. 68-80%) compared with the prodromal criteria alone.<sup>59</sup>

#### Management of the prodrome

Ruhrman reviewed pharmacological interventions in the prodrome, and found risperidone, olanzapine and amisulpiride potentially beneficial on positive symptoms but numbers were small and more research indicated.<sup>60</sup> The general consensus is that antipsychotic treatment should be restricted to clinical trials and specialist centres.<sup>59,60</sup>

Table 2: Management of adverse events

Side effect	Cause	Monitoring	Treatment
EPSE	Blockade of dopamine receptors – dose dependent	EPSE scales – Simpson-Angus, Barnes-Akathisia scale, AIMS, history taking	Titrate dose down, switch to alternate antipsychotic; anticholinergic medication; clonazepam, propranolol, 5HT2 antagonists may help
TD	Blockade of Dopamine receptors – not dose or duration dependent	EPSE scales, history and physical exam	Discontinue antipsychotic – may be irreversible; clozapine best alternative
Dyslipidaemia	Increased risk factors for CVS disease overall / Increase predominantly in triglycerides	Screen at baseline, monitor 3/12ly during year one then annually	Switch to alternate antipsychotic, dietary & exercise advice, treat with statins; consult with GP
Impaired glucose tolerance	Factors inherent to illness – insulin resistance; antipsychotic induced	Screen at baseline – OGTT the gold standard, fasting glucose, urinary glucose or HBA1C at baseline & annually (more frequent for olanzapine & clozapine)	Switch to alternate antipsychotic; diet and exercise; consult with GP
Hyperprolactinaemia	Dopamine antagonism, dose related	History & physical exam, serum prolactin levels, bone mineral density	Switch to alternate antipsychotic; consider combination therapy with aripiprazole; dopamine agonists if switch not feasible; consult with endocrinology
Autonomic / Postural Hypotension / Hypertension	Alpha1 adrenergic antagonism; presynaptic Alpha2 antagonism	BP at baseline & after dose change	Reduce dose, slow rate of increase, Switch to alternate antipsychotic; caution with concomitant SSRI
Cardiotoxicity / QT prolongation	CVS risks present, certain medication cardiotoxic	ECG at baseline; ECG after dose change	Risk reduction; choose antipsychotic based on risk profile; avoid polypharmacy of other QT prolonging meds & hepatic enzyme inhibitors; consult with cardiologist
Sedation	H1 receptors	History	Change dosing schedule to smaller dose in the am; Switch antipsychotic
Sexual dysfunction	Hyperprolactinaemia, & anticholinergic effects	History (under-reported as not enquired about)	Titrate dose down, switch to alternate antipsychotic
Weight gain / obesity	5HT2c antagonism, H1 antagonism, raised prolactin, raised serum leptin; factors associated with the illness	Weight, abdominal circumference & BMI at baseline & 6 monthly	Switch antipsychotic, institute behavioural programme, pharmacological options last resort, consult with GP / dietician
Suicide	Multifactorial	History taking, risk assessment	Management of risk factors, clozapine, reality oriented psychotherapy, psychosocial programmes,
Neuroleptic malignant syndrome	Dopamine antagonism, sympathetic overactivity, genetic predisposition	History & physical examination, elevated plasma CK	Withdraw antipsychotic, re-hydrate, dantrolene, bromocriptine, sedation with BDZ, ECT if intractable

Adapted from Maudsley Guidelines,<sup>6</sup> Nice updated guidelines 2009,<sup>7</sup> Pompili 2007,<sup>36</sup> Consensus Summary 2005.<sup>37</sup>

Antidepressants have been used to some effect, where it makes sense to alleviate the distress around symptoms. Two recent studies found that antidepressants reduced conversion to psychosis in high-risk groups, however the studies were naturalistic and confounding factors include non-adherence to antipsychotics in those prescribed them, and that those prescribed antipsychotics from the start may have had a more severe illness.<sup>61,62</sup>

Clinical trials have examined cognitive behaviour therapy and antipsychotic medication in the prodrome. EPPIC in the PACE study found that CBT and antipsychotic medication reduced the transition to psychosis but could not isolate which element.<sup>63</sup> The PRIME study in America examined antipsychotic medication alone and found no statistically significant difference in conversion to psychosis and though the antipsychotics ameliorated symptoms, they increased weight.<sup>64</sup>

At present management of the prodromal period should consist of psychosocial interventions such as family education/

intervention, management of symptoms such as depression and anxiety, treatment of co-morbid substance abuse and training in social and self-management skills.

### First episode of psychosis/acute episodes

The early stages of schizophrenia are characterised by exacerbations of positive symptoms such as hallucinations, delusions and disturbed behaviour. Treatment of schizophrenia traditionally begins during the first episode. A longer duration of untreated psychosis is associated with worse clinical outcomes and worse responses to medication.<sup>65-67</sup> The risk-benefit ratio supports treatment with anti-psychotic medication as soon as psychosis is present. Antipsychotic medication ameliorates symptoms but has a limited effect on the associated social and cognitive disability.

Drug-naive patients respond to doses at the lower end of the range.<sup>5,68-71</sup> The maximum dose for drug naive patients experiencing the first episode is recommended to be 500mg CPZ equivalents per day.<sup>72</sup> Higher doses are sometimes used for

'chemical restraint'; however the true antipsychotic effect does not require high doses. Optimal oral antipsychotic dose in patients who are not drug naive experiencing an acute episode is 300-1000mg CPZ equivalents per day.<sup>7</sup> It can take between two to four weeks to show an initial response and six months or longer to show an optimal response. Recommendations include giving each medication a sufficient trial before moving to another and avoiding the use of multiple anti-psychotics in quick succession or in combination. The decision on which antipsychotic to choose is now based very much on the symptom and side-effect profile of the individual.

### Relapse prevention

Around 20% of individuals will experience only a single episode.<sup>73</sup> Eighty-two percent will relapse over a five year period, a figure partially explained by discontinuing medication. Reduction in the risk of relapse can be diminished with maintenance antipsychotic therapy,<sup>74</sup> though a proportion will relapse despite maintenance treatment.<sup>75</sup> Long term 20-40 year outcome studies show a moderately good outcome in over half of people with schizophrenia, with a smaller proportion having complete remission or remission punctuated by further acute episodes with extended complete remission between.<sup>76-78</sup>

Given the lack of reliable predictors of prognosis or response to treatment, recommendations suggest that pharmacological relapse prevention treatment is considered for every patient diagnosed with schizophrenia, with the possible exception of those with very brief psychotic episodes without negative psychosocial sequelae.<sup>7</sup>

There is evidence that early involvement in a progressive, stage-specific therapeutic programme, incorporating social and psychological interventions as well as medication is an important factor in improving long term outcomes.<sup>77, 79</sup>

### Conclusion

As schizophrenia occurs at a time of life when the individual is making the transition to independence, the illness can stunt a person's cognitive, functional, social and occupational potential. Recently efforts have focused on early detection and intervention to reduce the duration of untreated psychosis. It has long been evident that the person's environment impacts upon both the illness and the recovery, and management strategies that include the carer or family are vital. Management strategies directed at recovery and aiding the transition to returning to a full and contributing member of society are increasingly important.

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### Multiple Choice Questions

#### 1. Pharmacological management of schizophrenia:

- Galactorrhoea is due to elevation of prolactin by antipsychotic medication T F
- The optimal dose in drug naive people is 1000mg CPZ equivalents T F
- Tardive dyskinesia is treated by stopping the antipsychotic T F
- SGAs require no monitoring T F
- Dyslipidaemia is mainly due to elevated HDL cholesterol T F

#### 2. Psychological management of schizophrenia:

- Cognitive remediation improves outcomes when offered in addition to vocational rehabilitation T F
- Psychoanalytical psychotherapy is proven to be useful in psychosis T F
- Carer education improves outcomes T F
- Social skills therapy is useful for improving activities of daily living T F
- CBT has no effect on hospitalisation T F

#### 3. The following agents are recognised first line treatment options for first episode psychosis:

- Haloperidol T F
- Olanzapine T F
- Clozapine T F
- Chlorpromazine T F
- Amisulpiride T F

#### 4. The prodrome:

- The prodrome can be suspected when a teenager starts to stay in his room and displays unusual thoughts T F
- A history of violence at baseline increases the positive predictive power of predicting conversion to psychosis T F
- Use of SGAs is recommended if the prodrome is suspected T F
- Management of the prodrome is purely pharmacological T F
- Genetic risk with a recent fall in functioning can indicate a risk of conversion to psychosis T F

#### 5. Clozapine:

- Is more effective when combined with another antipsychotic T F
- Is an effective treatment for suicidality T F
- Is associated with thrombocytopenia T F
- Is used only after a trial with two or more antipsychotics one of which is a SGA T F
- Has no effect on mortality T F

Answers: see [www.ijpm.org](http://www.ijpm.org)