module 226

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WELCOME to the two hundred and twenty sixth module in the *Pharmacy Magazine* Continuing Professional Development Programme, which looks at current thinking on the management of schizophrenia.

Continuing professional development (CPD) is a statutory requirement for pharmacists. Journal-based educational programmes are an important means of keeping up to date with clinical and professional developments and can form a significant element of your CPD. Completion of this module will contribute to the nine pieces of CPD that must be recorded a year, as stipulated by the GPhC.

Before reading this module, test your existing understanding of the topic by completing the pre-test at **www.pharmacymag.co.uk**. Then, after studying the module in the magazine, work through the six learning scenarios and post-test on the website.

Record your learning and how you applied it in your practice using the CPD report form available online and on pviii of this module.

Self-assess your learning needs:

- What are the causes of schizophrenia?
- What are the key differences between first and second generation antipsychotics?
- Are you familiar with the updated 2014 NICE guidance on the management of schizophrenia?

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GOAL:
To provide an overview of medicines optimisation and the management of patients with schizophrenia.

OBJECTIVES:
After completing this module you should be able to:

- List the positive and negative symptoms of schizophrenia
- Describe current treatment options
- Promote adherence to treatment
- Understand the key issues to be covered in a MUR with a patient on medication for schizophrenia.

First in professional development pharmacy magazine

the continuing professional development programme

CPD

This module is suitable for use by pharmacists as part of their continuing professional development. After reading this module, complete the learning scenarios and post-test at **www.pharmacymag.co.uk** and include in your CPD portfolio. Previous modules in the Pharmacy Magazine CPD Programme are available to download from the website.

Current thinking on schizophrenia

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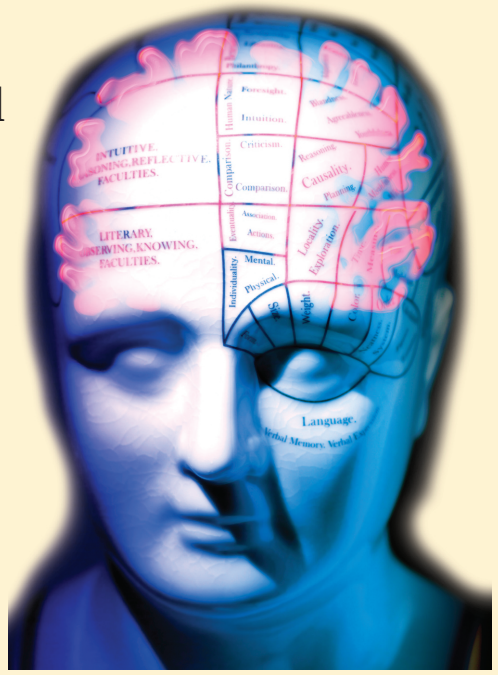

Introduction

Schizophrenia is a complex condition involving disturbance of thinking, perception and social behaviour, which can be frightening for both the individual and those around them. Over a lifetime one in every 100 people will suffer from psychosis and schizophrenia.

In the UK, as many as four in 1,000 people may have a diagnosis of schizophrenia, requiring care and treatment to the tune of £2bn each year.

Causes and risk factors

Imaging has shown that structural changes, including reduced brain size and volume, changes in ventricle and temporal lobe size, and differences in synaptic connections, occur in the brains of individuals with schizophrenia. However there is still much to learn about the exact aetiology of the condition.

The causes of schizophrenia in an individual are often the result of pre-existing risk factors culminating over time, often combined with a short-term trigger factor.

Studies have shown there is an increased risk of first-degree relatives of schizophrenics developing the condition but no single 'schizophrenia gene' has yet been identified.

Many studies have reported an association between obstetric complications that involve foetal hypoxic brain damage and a subsequent increase in risk for schizophrenia. Such complications include viral infection during pregnancy, first-trimester maternal starvation, rhesus

incompatibility and maternal pre-eclampsia, anaemia and diabetes.

Drug and/or alcohol misuse among individuals with schizophrenia is well recognised, but also controversial. For example, smokers of cannabis are more likely to develop psychosis and schizophrenia; however those with a predisposition to developing schizophrenia are also more likely to use cannabis. Social factors in schizophrenia are complex, with many issues such as migration and understanding of culture to consider.

Schizophrenia is commoner in the lower social classes. Identified risk factors include single marital status, being raised in an urban/inner city environment, environmental and cultural stressors, and advanced paternal age.

Within the UK there are higher rates of schizophrenia among the Afro-Caribbean community, and it is thought this may extend to other ethnic minority groups. Individuals with learning disabilities and epilepsy have higher rates of schizophrenia diagnosed than the general population.

Neurochemical changes

Unlike many conditions where the patho-physiology is resolute and treatments are developed based on this knowledge, drug treatments for schizophrenia were identified before their mechanism of action was (and is) fully understood. Observation that dopaminergic drugs such as high-dose amphetamine imitate the presentation of an individual with acute psychosis, and that antipsychotics were dopamine antagonists with an affinity for D2 receptors, resulted in the dopamine hypothesis theory being proposed. This theory continued to be the focus of research and treatment for many decades but we now know that other neurotransmitters, such as glutamate and serotonin, play a key role in schizophrenia, even though their exact mechanisms are still unclear.

Symptom presentation

The symptoms of schizophrenia can be divided into two categories:

- Positive symptoms displaying an enhancement or distortion of normal function
- Negative symptoms that show a depletion or loss of function.

Positive and negative symptoms

Positive symptoms include:

Hallucinations: commonest are auditory hallucinations, but visual, tactile, olfactory and gustatory hallucinations may also occur. Hallucinations occur without the presence of an external stimulus

Delusions: commonest is paranoia or persecutory beliefs. Delusions may also include ideas of grandiosity and self-importance, with or without religious context, and somatic delusions relating to beliefs of poor physical health

Thought disorders: the presence of disorganised speech and behaviour due to chaotic thoughts, the belief that thoughts are being 'broadcast' aloud, inserted or withdrawn from the individual, and thought 'block', where no or very few thoughts occur

Ideas of reference: the belief that reports on TV, radio, in the press or on the internet are about the individual or a direct line of communication with the individual.

Negative symptoms include:

- Social withdrawal and lack of engagement (e.g. minimal conversation) with others
- Poor motivation and initiative
- Lack of self-care
- Blunting/lack of emotion
- Slow movement.

Negative symptoms can easily be mistaken for depression and, indeed, depression may often co-exist in individuals with schizophrenia. This highlights the importance of an accurate history and diagnosis to ensure effective treatment can be offered. In all cases, lack of insight or awareness of their condition is very common in patients with schizophrenia.

The first psychotic episode may be abrupt or insidious in its onset, often preceding a short prodromal phase. This 'acute' phase is marked by characteristic positive symptoms of hallucinations, delusions and behavioural disturbances, such as agitation and distress. Following resolution of the acute phase, usually because of treatment, positive symptoms may be reduced or disappear, leaving a number of negative symptoms for many patients.

Reflection exercise 1

Identify a patient with schizophrenia who comes to your pharmacy and check his/her patient medication record for a continued supply of medication. If there is a gap in the supply of medication, how would you approach this? Consider any reasons that could explain why there may be a break in the request for a prescription.

After an initial episode, up to a third of individuals may make a full recovery. For the majority of patients, periods of stability may be interrupted by acute exacerbations or 'relapses', which may need additional interventions. It is unlikely that a diagnosis of schizophrenia would be made after a single psychotic episode.

For men, the peak incidence of onset of schizophrenia is between 15 and 25 years; for women it is between 25 and 35 years. Women display a second peak of onset after 40-45 years, just before the menopause. Men appear to experience more negative symptoms and women more affective (mood-related) symptoms.

Prognosis

Historically, many healthcare professionals have taken a pessimistic view of the prognosis for schizophrenia, regarding it as a severe, intractable and often deteriorating lifelong illness. Such a negative view has not been confirmed by any long-term follow-up studies.

While it is estimated that around two-thirds of people with schizophrenia will experience recurrent relapse and some continued disability, the findings of follow-up studies over periods of 20 to 40 years suggest that there is in fact 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 any further relapses.

Some people who never experience complete recovery from their experiences nonetheless manage to sustain an acceptable quality of life if given adequate support and help.

The impact of schizophrenia

Mortality among people with schizophrenia is approximately 50 per cent higher than that of the general population, partly as a result of an increased incidence of suicide (the leading cause of premature death in schizophrenia) and violent death, and partly as a result of an increased risk of a wide range of physical health problems including those illnesses associated with cigarette smoking, obesity and diabetes.

The extent to which this excess mortality and high rates of disability are, at least in part, a result of some of the medications given for schizophrenia is still not clear.

Social stigma is an ongoing challenge for all individuals with a mental health diagnosis, not just those with a diagnosis of schizophrenia. There are many presumptions made about the impact of schizophrenia on an individual's cognitive ability and skills. Such impairments may be present during an acute episode or relapse, particularly when a hospital admission is required, but not present for the majority of time between such episodes.

Post-mortem studies have failed to show any evidence of neurodegeneration in the brains of individuals with schizophrenia. The impact of social stigma and of communication difficulties (either due to symptoms of the condition or side-effects of medication) can prevent individuals with schizophrenia seeking and receiving appropriate care, support and treatment in the community.

Treatment of schizophrenia

Schizophrenia is a chronic illness that influences virtually all aspects of an affected individual's life, so management of the condition has three key goals. They are to:

- Reduce or eliminate symptoms
- Maximise quality of life and adaptive functioning
- Promote and maintain recovery from the debilitating effects of illness to the maximum extent possible.

There are two national clinical guidelines in the UK relating to the treatment of schizophrenia:

- NICE Clinical Guideline 178: Psychosis and schizophrenia in adults: treatment and management
- The British Association of Psychopharmacology (BAP) Consensus Guideline: Evidence-based guidelines for the pharmacological treatment of schizophrenia.

While the BAP guidance gives more of a narrative for clinical decision-making and covers speciality areas not considered by NICE, the updated 2014 NICE guidance lists a number of recommendations for treating and managing psychosis and schizophrenia. The key aims relating to medication and physical health are:

- Oral antipsychotic medication should be offered in conjunction with psychological interventions
- The choice of antipsychotic should be made by the individual and health professional together
- The physical health of individuals with psychosis or schizophrenia should be monitored before starting an antipsychotic, when care is transferred to a community setting, and then at least annually
- A combined healthy eating/physical activity programme and stop smoking support should be offered. If there is rapid or excessive weight gain, abnormal lipid levels or problems with blood glucose management, make interventions in line with other NICE guidance.

Antipsychotics are the main pharmacological treatment for psychosis and schizophrenia, although mood stabilisers, antidepressants and benzodiazepines may also be considered depending on individual circumstances.

Antipsychotic agents

Antipsychotics are broadly divided into two categories (see Table 1):

- First generation antipsychotics (FGAs) – also known as typical antipsychotics – have a predominantly antagonist effect on dopamine receptors, specifically the D2 subtype
- Second generation antipsychotics (SGAs) or atypical antipsychotics, in addition to being dopamine antagonists, also exert effects on the serotonin system.

As a general principle, FGAs are more likely to result in extrapyramidal side-effects, while SGAs are more likely to cause metabolic side-effects; however the individual side-effect profile should be reviewed for each drug when initiating and reviewing treatment. Some argue that with the launch of aripiprazole, a partial dopamine antagonist, there is now a third generation of antipsychotics available.

Clozapine has demonstrated greater efficacy for managing the symptoms of schizophrenia than the other antipsychotics. However, due to the risk of blood dyscrasias and cardiac risks, it should only be offered when there has been an inadequate response to at least two other antipsychotics, with at least one being a second-generation drug.

Anyone taking clozapine, the prescriber and dispensing pharmacy must all be registered with the relevant drug company for the brand of clozapine being given (Clozaril, Denzapine or Zaponex). There are tight controls about the frequency of both dispensing clozapine and the blood tests required. Not taking clozapine for a period of more than 48 hours requires re-titration of the dose to reduce the risks of cardiac complications.

Treatment considerations

With the exception of clozapine, there is no distinct difference in efficacy between the different antipsychotics that are available, although some may be more effective for managing specific symptoms. The choice of medication for each individual should take into account the side-effect profiles of the different antipsychotics, co-morbidities, such as epilepsy and diabetes, and cardiovascular risk. Symptoms of conditions such as Parkinson's disease, glaucoma and sleep apnoea can also be worsened by antipsychotics.

Table 1: Classification of common antipsychotics

First generation (typical)	Second generation (atypical)
Chlorpromazine	Amisulpride
Flupentixol	Aripiprazole (sometimes classed as third generation)
Fluphenazine	Clozapine
Haloperidol	Olanzapine
Prochlorperazine	Quetiapine
Sulpiride	Risperidone
Trifluoperazine	
Zuclopenthixol	
Depot formulations	
Flupentixol decanoate	Aripiprazole
Fluphenazine decanoate	Olanzapine pamoate
Haloperidol decanoate	Paliperidone palmitate
Pipotiazine palmitate	Risperidone microspheres
Zuclopenthixol decanoate	

'Schizophrenia is a chronic illness that influences virtually all aspects of an affected individual's life'

The decision regarding which antipsychotic to prescribe should be made by the patient and healthcare professional together, taking into account the views of the carer if the patient agrees. The risk and benefits of the choice of treatment can only be reviewed when information about the individual's risk history can be obtained. In the case of someone who is at high risk of suicide, the risk from treatment may outweigh the risk of possible harm to the individual, particularly if he/she has failed to respond to lower risk antipsychotics.

Side-effects of antipsychotics

The antagonist effect of antipsychotics at the D2 receptors in the mesolimbic pathway provides the beneficial effect of treating the symptoms of schizophrenia. However, the same effect within other neural pathways gives rise to side-effects.

D2 blockade within the nigrostriatal pathway gives rise to extrapyramidal side-effects and within the tuberoinfundibular pathway can cause hyperprolactinaemia. The different antipsychotic drugs can also affect cholinergic, alpha-adrenergic, histaminergic and serotonergic receptors, causing blurred vision and dry mouth, sedation and postural hypotension, sedation, and weight gain respectively.

It can be difficult for an individual to review his/her side-effects objectively, particularly as many side-effects of antipsychotics can mimic the symptoms of the condition itself. The use of rating scales, such as the Liverpool University Side-Effect Rating Scale (LUNSERS) or the Glasgow Antipsychotic Side-effect Scale (GASS) can minimise subjective feelings to demonstrate both the presence and worsening or improvement of side-effects over time.

Other interventions

Psychological therapies and psychosocial interventions can improve the course of schizophrenia when integrated with pharmacological treatments. These interventions can provide additional benefits for patients in such areas as relapse prevention, improved coping skills, better social and vocational functioning, and also the ability to function more independently.

While pharmacotherapy focuses on symptom diminution, psychosocial interventions may provide emotional support and address particular deficits associated with schizophrenia. The choice of psychosocial intervention depends on the particular needs of the patient at various phases of his or her life and illness.

The different types of psychotherapy used in treating and managing schizophrenia include cognitive behavioural therapy (CBT) and family interventions. NICE recommends that CBT is offered to all patients diagnosed with schizophrenia and family interventions to people who live with, or are close to, the patient. Art therapy is also in the NICE guideline with the recommendation that it is considered for all sufferers to address negative symptoms.

Reflection exercise 2

How aware are you of support services, including psychological therapies, for patients with schizophrenia in your locality? Are they included in your 'signposting' list? Check the recommended patient/professional websites listed at the end of this module and create a list of helpful reference sources and local self-help groups.

Table 2: Management of key side-effects of antipsychotics

Side-effect	Impact on the individual	Management options
Pseudo-parkinsonism (e.g. tremor or rigidity)	Occurs within days or weeks after starting or increasing an antipsychotic Can impair movement such as walking or drinking from an open cup	Dose reduction Consider switching to an atypical antipsychotic
Weight gain	Low self-image and self-esteem Increased morbidity and mortality	Behavioural methods, including diet and exercise programmes Consider switching to an alternative antipsychotic that is a lower risk for weight gain (aripiprazole) Consider dose reduction and augmentation with aripiprazole
Sedation	Decreased ability to carry out daily activities May lead to poor engagement with services due to missing appointments	Often a transient side-effect so allow up to two weeks for sedation to subside. May require slower dose titration Consider taking dose before bed Consider switching to an alternative antipsychotic that is a lower risk for sedation (amisulpride, sulpiride, aripiprazole)
Hypotension	Increased risk of falls	Often a transient side-effect that may require slower dose titration Consider switching to an alternative antipsychotic that is a lower risk for hypotension (amisulpride, sulpiride, aripiprazole)
Raised prolactin	Disruption to menstrual cycle Breast growth and galactorrhoea Decreased bone density leading to increased risk of osteoporosis Possible increased risk of breast cancer	Monitor for signs and symptoms, and assess risk of long-term complications Continue current treatment and monitor prolactin if asymptomatic and low risk of long-term complications Consider switching to an alternative antipsychotic that is a lower risk for raised prolactin (aripiprazole, quetiapine) Consider augmentation with low-dose aripiprazole

Adherence to antipsychotics

Up to half of individuals with schizophrenia may not take their medication at all, and a further 30 to 50 per cent will adjust the dose.

The stigma of mental health causes people with schizophrenia to be more reluctant to seek help and support. This can lead to a more difficult and slower recovery and has an impact on their physical health. The 'Time to Change' campaign provides resources for both people with mental illness and members of the public to improve communication about mental health and reduce the barriers to accessing support that the stigma can cause. The key messages from this campaign can be adapted to the community pharmacy setting:

- **Talk, but listen too:** simply being there will mean a lot
- **Don't just talk about mental health:** chat about everyday things as well
- **Remind them you care:** small things can make a big difference
- **Be patient:** ups and downs can happen.

There are many often complex and time-consuming methods for discussing an individual's ideas about taking medication. Motivational interviewing (MI) techniques can be useful when discussing adherence to medication as well as in other areas such as smoking cessation or sleep hygiene. MI focuses on exploring and facilitating an individual's internal motivation and drive for change, rather than imposing change from an external source.

Exploring resistance can help the person with schizophrenia to identify their own solutions to barriers preventing adherence. This can be a challenge for healthcare professionals such as pharmacists, whose counselling sessions historically focus on imparting a set of instructions on how to take a medication.

The **OARS** pneumonic is a brief way to remember the basic approach used in MI:

- Ask **O**pen-ended questions to allow issues to be elaborated and explore reasons for change or resistance to change. For example: "Can you tell me how that impacts on your job/partner/children?" or "Why is this important to you?"
- Genuine **A**ffirmations can be used to build a rapport and help an individual to see themselves or a situation in a more positive light. For example: "I understand that you find this issue challenging and it is great you have been able to start to address this."
- **R**eflections support an individual to resolve ambivalence through a focus on the negative aspects of not making change and the positive actions of changing, e.g. "Without medication you feel the voices are a distraction and would prevent you from applying for a job, but medication may ease the intensity of voices to allow you to concentrate during a job interview."
- **S**ummaries demonstrate an understanding of a conversation and can be used as a way of moving the conversation along. For example: "We have discussed the stiffness the medication has caused and how you are unhappy about being on even more medication to treat this side-effect; I'd now like to know what benefits the medication has brought."

Poor adherence to antipyschotic medication is a very common problem

Reflection exercise 3

- How do you provide information about antipsychotics to your patients?
- Do you explain what the positive effect is and how long this effect may take to be seen?
- Do you explain how long an antipsychotic should be taken for and what the risks are of stopping medication?

Side-effects are often cited by patients as the main reason for not taking their medication, so addressing these is an intervention that can promote adherence.

When a side-effect has been highlighted by an individual, it can be easy to assume that the person wants a change to his/her medication – so it is important to find out what impact the side-effect is having and to ask what outcome the individual would like.

The reassurance that a side-effect is transient, advising how to minimise a side-effect, or simply acknowledging the side-effect may be due to medication, can be enough to support the individual in continuing to take his/her medication, especially if that person has found it to be of benefit.

It may be necessary to recommend an alternative antipsychotic or a decrease in dose – options that risk causing the person with schizophrenia to relapse and have breakthrough symptoms. Because of this, it is important that any recommendations are discussed with the prescriber or a care co-ordinator with background knowledge of the individual (this may not necessarily be the GP).

Physical health

Individuals with schizophrenia have poorer physical health than those who do not have the condition and have an average life expectancy 10-20 years below the general population. It is unclear if this is due to lifestyle choices, adverse effects of medication, the condition itself, or a combination of these factors.

NICE recommends that people with schizophrenia should be offered an annual physical health check to help monitor any adverse effects of medication. Support and promotion of a healthy lifestyle should also be encouraged at these reviews. An annual physical health check should include assessment of:

- Weight and waist circumference
- Fasting blood glucose and HbA1c
- Fasting lipids
- Smoking status
- Alcohol and substance misuse
- Side-effects
- ECG if indicated.

Reassurance is important when talking to patients about their medication

Role of community pharmacists

There is a demand from all people with mental health problems for greater access to information about their treatment – community pharmacists are ideally placed to help provide this. It is important that information is both appropriate and accessible.

For example, advice about the efficacy of antipsychotic medication for schizophrenia may be different to that when an antipsychotic is being used in personality disorder. The accessibility of information could range from having large print PILs available, to having access to simplified and standardised information leaflets, such as those available via the 'Choice and medication' website (see 'Useful websites').

Establishing a rapport with any customer improves the chances of repeat business and this is the case for people with schizophrenia requesting repeat prescriptions. Building a trusting relationship is not just dependent on the pharmacist but on all team members within the pharmacy.

Ensuring an individual receives a greeting from the moment he/she enters the pharmacy can have a significant impact on forming a trusting relationship. Being able to chat to a patient in a relaxed manner in the pharmacy is essential in building a rapport and making that person feel at ease.

Asking someone with schizophrenia if they would like you to explain about their medication, and offering alternative sources of information or the option of speaking on the telephone, encourages a stronger long-term rapport, with the individual more likely to seek support in the future.

The time spent waiting for medication is often under-utilised and offers an opportunity for improving awareness about medication and particular conditions. Some useful ideas for utilising the waiting time include:

- Having a well-maintained leaflet stand with information on topics such as smoking cessation, following a healthy diet and local exercise groups
- Information terminals for people to print leaflets about conditions and medications
- Handing out prompt cards listing example questions they can ask about their medication

Reflection exercise 4

Identify two patients with schizophrenia whom you could invite for a MUR. Write a short template of issues that you might cover in the MUR.

and their condition before they leave the pharmacy.

Conducting a MUR

Conducting a MUR with a person with schizophrenia can be challenging due to their fear of being stigmatised and subsequent reluctance to give honest information. The symptoms of schizophrenia can be a barrier to reviews, while the distraction of hallucinations and poor concentration can limit the time and discussion within a MUR. Reassurance can be essential to promoting adherence to medication regimens.

The following issues are relevant to conducting a MUR within a wide range of long-term conditions, but the discussion points relate specifically to the treatment of schizophrenia. It is important that beliefs about medication-taking are explored before moving on to challenge or clarify information.

What are the expectations of medication?

For many people, their first contact with medication is simple analgesia being given for a superficial injury as a child, with a single dose

resulting in 'immediate' pain relief. Understanding this starting point can help to explain why many people with long-term conditions feel dissatisfied with their medication – they expect an effective and quick resolution of their symptoms.

In the same way that schizophrenia does not suddenly start, antipsychotics do not work immediately and may not result in complete resolution of all symptoms. Antipsychotics may start to relieve symptoms in the first two weeks, and should be given for an initial trial of four to six weeks at optimal dosage before assessing their full effect.

A MUR may highlight issues around unintentional non-adherence and could lead to an assessment for a compliance aid or further support with taking medicine, which may range from encouraging a carer or relative to remind the individual to take his/her medication, to simplifying medication regimens or supplying medication in a multi-dose compliance aid.

Some antipsychotics are available as long-acting intramuscular depot injections. These can be particularly useful treatment options for people with a history of not taking oral medication.

What is their experience with the medication so far?

Enquiring about previous experiences with medication can help to identify barriers to taking medicine and allow these to be addressed before non-adherence becomes problematic. During an acute episode, people with schizophrenia may have poor insight or not recall their symptoms, so it can be beneficial to have a relative or carer present to remind them of the difference the medication has made so far.

Reflection exercise 5

Which pharmacy (or pharmacies) supply clozapine in your local area? What questions would you ask if a patient presented saying he/she was on holiday and had run out of clozapine? Who could you contact for advice?

Will they continue to take their medication?

Whether the answer concerning 'continuing to take medication' is positive or negative, it is important the reasoning is understood. Knowing why a person wants to continue to take medication may help to promote adherence in the future and may also give further insight into their expectations. Conversely, understanding why someone does not want to continue their medication can facilitate discussions about alternative treatment options.

Are they experiencing any side-effects?

Side-effects of antipsychotics are often transient, although there are some complications that can develop long after starting the medication. Considering the time of onset of side-effects can help to identify true side-effects from symptoms of schizophrenia.

Sexual dysfunction, including loss of libido, is a known side-effect of antipsychotics but negative symptoms of schizophrenia, such as social withdrawal and poor motivation, may also lead to loss of libido.

If there are side-effects, the preference of the individual should be sought before recommending a dose or drug change. If the antipsychotic is effective, the person with schizophrenia may decide to tolerate the side-effect rather than risk a trial of an alternative antipsychotic that may not be as effective.

Lifestyle review

People with schizophrenia have poorer physical health than the general population so should be encouraged to make healthy lifestyle choices at every opportunity. The use of MI techniques for exploring opinions to changes in lifestyle – rather than dictating what a healthy lifestyle should include – is likely to be more beneficial in the longer term.

Stopping smoking may have the single biggest impact on improving the health of people with schizophrenia but there are risks to people stopping smoking who take olanzapine or clozapine. Hydrocarbons in cigarette smoke increase the metabolism of both these antipsychotics, so stopping smoking increases drug plasma levels, which in turn increases the risk of toxicity.

Specialist advice from a mental health pharmacist or smoking cessation adviser may therefore be required to manage the risks of stopping smoking for those taking clozapine.

Summary

The severity of the symptoms and long-lasting, chronic pattern of schizophrenia often cause a high degree of disability. Even when treatment is effective, persisting consequences of the illness, lost opportunities, stigma, residual symptoms and medication side-effects may be very troubling.

The first signs of schizophrenia often appear as confusing or even shocking changes in behaviour. Coping with the symptoms of schizophrenia can be especially difficult for family members who remember how involved or vivacious a person was before the onset of symptoms.

Pharmacists have an extremely important role to play in providing information about medication for treating schizophrenia, managing side-effects, promoting adherence to medication and supporting healthy lifestyle choices. It is important to include other healthcare professionals involved with the patient's care when discussing changes to medication and to be proactive in offering health promoting advice, particularly for patients who smoke.

Useful websites

- **MIND: www.mind.org.uk**
- **Rethink: www.rethink.org**
- **Time to Change: www.time-to-change.org.uk**
- **Choice and Medication: www.choiceandmedication.org/cms/?lang=en**
- **Hearing Voices Network: www.hearing-voices.org**

CURRENT THINKING ON SCHIZOPHRENIA

assessment questions

1. Which of the following statements about the epidemiology of schizophrenia is TRUE?
a. The onset of schizophrenia occurs between 25 and 45 years of age
b. Schizophrenia is commoner in females than in males
c. In the UK one in every 200 people will suffer from psychosis and schizophrenia
d. Schizophrenia is a treatable disorder

2. Which condition is considered a differential diagnosis for schizophrenia?
a. Hyperthyroidism
b. Hyperprolactinaemia
c. Frontal lobe epilepsy
d. None of the above

3. Which statement about the signs and symptoms of schizophrenia is TRUE?
a. Aggression and violence are symptoms of schizophrenia
b. Delusions, hallucinations, paranoia, withdrawal and poor self-care are all positive symptoms of schizophrenia
c. Negative symptoms of schizophrenia are more likely to occur during an acute episode
d. Lack of insight is common during an acute episode

4. Which drug does NOT induce psychosis?
a. Trimethoprim
b. Levodopa
c. Cannabis
d. Isoniazid

5. What treatment option is recommended by NICE for the treatment of acute episodes of psychosis or schizophrenia?
a. Psychological intervention alone
b. Oral antipsychotic medication alone
c. Oral antipsychotic medication in conjunction with counselling or supportive psychotherapy
d. Oral antipsychotic medication in conjunction with art therapy, family intervention or individual CBT

6. Which antipsychotic should be recommended first-line for treatment of schizophrenia?
a. A first-generation (typical) antipsychotic (e.g. zuclopenthixol)
b. A second-generation (atypical) antipsychotic (e.g. olanzapine)
c. Clozapine
d. Either a first generation (typical) or second-generation (atypical) antipsychotic

7. What pre-existing condition will NOT influence the choice of antipsychotic?
a. Asthma
b. Diabetes
c. Epilepsy
d. Glaucoma

8. Which antipsychotic is least likely to cause sedation?
a. Aripiprazole
b. Chlorpromazine
c. Risperidone
d. Zuclopenthixol

Pharmacy Magazine CPD record

CPD August 2014

Use this form to record your learning and action points from this module on Current thinking on schizophrenia and include it in your CPD portfolio and record online at www.uptodate.org.uk

Activity completed. (Describe what you did to increase your learning. Be specific)
(ACT)

Date: Time taken to complete activity:

What did I learn that was new in terms of developing my skills, knowledge and behaviours? Have my learning objectives been met?*
(EVALUATE)

How have I put this into practice? (Give an example of how you applied your learning) Why did it benefit my practice? (How did your learning affect outcomes?)
(EVALUATE)

Do I need to learn anything else in this area? (List your learning action points. How do you intend to meet these action points?)
(REFLECT & PLAN)

*** If as a result of completing your evaluation you have identified another new learning objective, start a new cycle. This will enable you to start at Reflect and then go on to Plan, Act and Evaluate. This form can be photocopied to avoid having to cut this page out of the module. Complete the learning scenarios at www.pharmacymag.co.uk**

ENTER YOUR ANSWERS HERE Please mark your answers on the sheet below by placing a cross in the box next to the correct answer. Only mark one box for each question. Once you have completed the answer sheet in ink, return it to the address below together with your payment of £3.75. Clear photocopies are acceptable. **You may need to consult other information sources to answer the questions.**

1.	2.	3.	4.	5.	6.	7.	8.
a. ☐	a. ☐	a. ☐	a. ☐	a. ☐	a. ☐	a. ☐	a. ☐
b. ☐	b. ☐	b. ☐	b. ☐	b. ☐	b. ☐	b. ☐	b. ☐
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Name (Mr, Mrs, Ms) _____

Business/home address _____

Town _____ Postcode _____ Tel _____ GPhC/PSNI Reg no. ☐☐☐☐☐☐☐☐

I confirm the form submitted is my own work (signature) _____

Please charge my card the sum of £3.75 Name on card _____ ☐ Visa ☐ Mastercard ☐ Switch/Maestro

Card No. _____ Start date _____ Expiry date _____

Date _____ Switch/Maestro Issue Number _____

Processing of answers
Completed answer sheets should be sent to Precision Marketing Group, Precision House, Bury Road, Beyton, Bury St Edmunds IP30 9PP (tel: 01284 718912; fax: 01284 718920; email: cpd@precisionmarketing group.co.uk), together with credit/debit card/cheque details to cover administration costs. This assessment will be marked and you will be notified of your result and sent a copy of the correct answers. The assessors' decision is final and **no correspondence** will be entered into.

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