Chapter 1

# The inpatient with schizophrenia

When specific diagnoses are mentioned, we are referring to diagnoses and criteria as listed in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition, text revision (DSM-IV-TR) unless otherwise specified.

## Why might a patient with schizophrenia be admitted to a psychiatric unit?

Patients with schizophrenia who meet the criteria for admission to an inpatient unit are generally quite ill. The so-called "positive symptoms" of schizophrenia, which can result in threatening behavior and loss of control, are the usual triggers for admission. Some admitted patients will be experiencing a "first break," while others are hospitalized with an exacerbation of pre-existing schizophrenia. Most obvious symptoms are generally related to psychosis, a loss of reality testing and impaired mental functioning [1]. Psychosis usually presents with hallucinations, delusions, thought disorder, and/or bizarre or disruptive behavior (Table 1.1). The onset of illness or worsening of psychotic symptoms may be noticed by a family member, friend, teacher, co-worker, employer, or caregiver who sees the patient behaving bizarrely and deteriorating in their ability to function. A given patient may be so disruptive in the community that he or she is brought to the emergency department by police. A patient might even be hospitalized involuntarily for a time, depending on the laws and criteria in their state [2].

The negative symptoms of schizophrenia, such as social withdrawal and apathy, are very often also present in inpatients and contribute largely to the overall morbidity of the illness. However, these symptoms alone do not generally precipitate a stay on the inpatient unit unless they are so severe that patients are unable to adequately care for themselves outside of the hospital.

## How does the inpatient clinician approach an interaction with an acutely psychotic patient?

Though it is important to establish a treatment alliance with a patient early in their stay, psychosis is often accompanied by lack of insight and

**Table 1.1** Symptoms of psychosis

| Symptom | Definition | Example |
|---|---|---|
| Hallucination | false sensory perception in the absence of actual input | auditory hallucination: for example hearing a man's voice commenting on one's actions |
| Delusion | false belief based on incorrect inference about external reality | paranoid delusion: for example belief that one's psychiatrist is attempting administer deadly poison |
| Thought disorder | disturbance of thinking that affects language and communication | loose associations: expressing unrelated ideas in succession without logical transitions or connections |

neurocognitive deficits that hamper this process. Clinicians also need to be mindful of their own safety, which, with certain very agitated patients or patients with a known history of violence, might entail having one or more staff members or security officers either observe the interview or be on "standby" just outside. Also, a 2 mg dose of lorazepam is a wonderful adjunct to even the most soothing bedside manner! Early efforts are directed toward calming the patient sufficiently for the interview to proceed. When the patient is ready to participate, the interviewer's manner should be reassuring, calm, and non-judgmental. Patients can become more agitated if the interviewer appears incredulous or challenging when confronted with the patient's frankly delusional ideas (Table 1.2).

The following vignette illustrates the kind of flexibility that is necessary to engage these often distrustful individuals:

> A young indigent woman, in her first episode of illness, presented to the psychiatric emergency department with a recent history of eating from dumpsters, as she feared she would be poisoned by the various church meals offered in the area. Once hospitalized, she would not take oral medication for the same reason, and thus required a court order for injectable medication. The treatment team eventually discovered that she was very worried about her inability to pay her student loans. When team members demonstrated their willingness to help her with this issue, assisting with loan deferral forms and a disability application, she was able to be more engaged in treatment and was then willing to try oral medication for psychotic symptoms.

**Table 1.2** *In our experience. . .* Hints for approaching a fearful or agitated patient

| |
|---|
| Always pay attention to your safety. Look for signs that the patient is escalating: profanity, clenched fists, threatening posture or movements toward you. |
| Make sure the patient does not feel trapped or cornered in the interview space. |
| Include a staff member who knows or already has rapport with the patient. |
| Offer the patient something tangible (e.g., food or a blanket). |
| Start with, or use exclusively, simple, concrete questions. |
| Leading questions/statements are often helpful, e.g., "Many patients tell me they feel uncomfortable talking to a doctor about these experiences." |
| Keep your own affect display to a minimum. |
| Do not try to be overly friendly or familiar, even if you know the patient. |
| If necessary, keep the initial interview brief and return to complete your assessment later. |
| Don't focus solely on medications; they are often a source of contention, fear, or distrust. |
| **Remember: No matter how nervous or frightened you are, the patient is much more so.** |

## What historical information is important with a first-break patient?

Particular attention should be paid to time course and intensity of psychotic symptoms. However, early on, especially if time is limited, fully flushing out intricate details of complex delusional symptoms can be delayed to a later meeting. A detailed inquiry into use of illicit substances and alcohol is key, since not only is there a high co-morbidity of substance use with schizophrenia, but because substance intoxication and withdrawal are often causes of or contributors to psychosis [3]. The clinician should also carefully determine whether there are, or have been, any mood symptoms, since they are the deciding factor at a major fork in the diagnostic road.

A complete social history, which in most instances is best obtained from family, is a high priority. This will help to outline the longitudinal course of illness. One should find out when family members first noticed changes in their loved-ones' social, educational, or occupational functioning. Also, especially important here, is a complete developmental history. Schizophrenic patients are often "odd" kids or demonstrate prodromal symptoms during their teenage years. There is a much better prognosis in a patient who was fully functional six weeks before the admission compared to a patient who "never had any friends" and has experienced a slow deterioration over a period of years.

**Table 1.3** *In our experience. . .* Hints for recognizing psychoses other than schizophrenia

| |
|---|
| **Delusional disorder** – can be high functioning with very circumscribed and believable false ideas. Staff on unit will sometimes debate if the patient is truly psychotic. |
| **Shared delusional disorder** – the "non-dominant" deluded partner may have some Axis II vulnerability or be in a very dependant relationship with the "true" psychotic partner |
| **Brief psychotic disorder** – look for a significant stressor in a vulnerable individual. Can be time-limited and remit without medications once in the structure of the hospital |
| **Schizoaffective disorder** – look for separation of the affective and psychotic components of illness. Tend to function better than pure schizophrenic patients. |
| **Psychotic disorder due to medical illness** – the physical examination, medical history, and labaratory tests can be crucial. More likely to have cognitive dysfunction or other signs of delirium. |
| **Substance-induced psychotic disorder** – look for other stigmata of drug or alcohol use and pay attention to the drug screen and markers for alcohol use. |
| **Post-partum psychosis** – look for confusion and disorganization in addition to delusions/hallucinations. Many have bipolar personal or family history. Also look for delusions/obsessions about the baby. |
| **Remember: Not all people who are delusional have schizophrenia. Look for the nuances that rule the other possibilities in or out.** |

In the early stage of illness, such as with a "first break," it is important to try to pin down the most specific diagnosis possible. This has implications for prognosis, treatment, and the institution of social supports. That said, many experienced inpatient psychiatrists often discharge a patient with a considerable hedging on the final diagnosis, e.g., "Psychotic Disorder NOS, rule-out Schizophrenia." After all, an inpatient admission and the events leading up to it are only a small cross-section of a patient's life. Follow-up studies have demonstrated that experienced psychiatrists' provisional diagnosis of schizophrenia from an index admission "stays true" only one-half to two-thirds of the time. Psychiatrists should all become familiar with the other DSM illnesses classified under Schizophrenia and Other Psychotic Illnesses as they have differing courses, prognoses, and recommended treatments (Table 1.3).

## What is the initial work-up of a psychotic patient?

A complete work-up for medical causes of psychosis ferrets out cases where a physical illness, possibly a curable one, presents with symptoms similar to schizophrenia. This work-up should include a urine drug screen, a

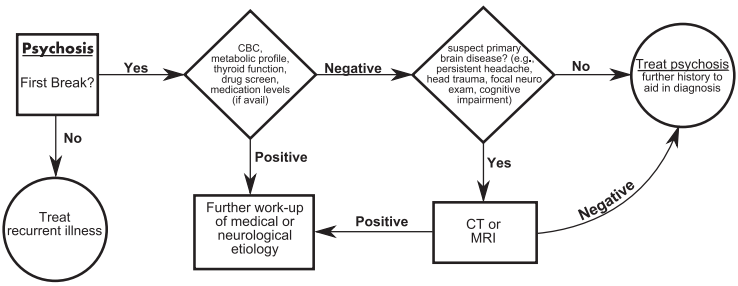


**Figure 1.1** Initial work-up of first-break psychosis.

comprehensive metabolic labaratory profile, and thyroid functions. Some clinicians order a magnetic resonance imaging (MRI) or computed tomography (CT) scan of the brain in the instance of a first break, but more conservative guidelines reserve imaging for cases where there is some level of suspicion of a primary brain disease: presence of persistent headaches, history of head trauma, lateralizing findings on neurological examination, or significant cognitive impairment (Figure 1.1). Findings on the physical examination or mental status testing can also guide one toward a more extensive work-up, including lumbar puncture, electroencephalogram (EEG), heavy metals, copper and ceruloplasmin, etc. The involvement of a neurologist can be helpful if there are specific signs or symptoms that suggest the possibility of a primary neurological illness.

## How does one distinguish psychosis in schizophrenia from mania in bipolar disorder?

This is a challenging differential diagnosis: a patient from either group can present in an enraged and/or paranoid state with persecutory and/or grandiose delusions. In the small snapshot one sees in the hospital, the states can be indistinguishable. But the pathway of each to psychotic symptoms differs. That is why longitudinal history from family and friends is extremely important in differentiating schizophrenia from bipolar disorder. In the months or years leading up to the psychotic break, schizophrenic patients will usually show a pattern of withdrawal and isolation, where bipolar patients can have periods of extra energy and hypomanic gregariousness. Depressive symptoms observed by loved-ones in this prodromal period, though important to note, do not always point to bipolar disorder, since the negative symptoms of schizophrenia often look like depression. If information about the patient's behaviors leading up to the current episode is unclear or unavailable, some clinicians find it useful to look at old family movies and photographs to see if the patient

**Table 1.4** *In our experience*. . . Questions to help obtain family history in difficult cases

| |
|---|
| Was anyone in your family ever institutionalized? . . .in a state hospital? . . .in an asylum? |
| Were there relatives that went away for periods of time without explanation? |
| Did any of your relatives take pills for their nerves? |
| Did anyone in your family die unexpectedly? . . .without an explanation of how? |
| Did you ever hear of a family member getting shock treatments? |
| Was there a relative that your family avoided talking about? |
| Any relatives that other family members said were "funny," "not right," or "crazy?" |
| **Remember: Diagnoses evolve. . . an uncle with "schizophrenia" in the 1950s might not meet the current criteria for that diagnosis.** |

appeared odd or ill at ease as a child, which turns out to be a harbinger of the development of schizophrenia in adolescence or early adulthood [4, 5].

Family history can also be helpful in making the distinction between these two categories of illness. A strong family history of any mood disorder, and especially a well described family history of bipolar disorder, can be combined with other observations to make a good case for the current patient having the same illness. Similarly, a pedigree that includes relatives with schizophrenia or schizophrenic spectrum disorders (e.g., schizotypal or schizoid features) can give *some* weight to the diagnosis of schizophrenia. However, a clinician must be careful when it comes to deciding how much emphasis to place on family history in the process of diagnosis, especially with schizophrenia. First, family history is often unreliable, with different relatives giving different information [6]. Also, while the concordance rate for identical twins is 80% in bipolar disorder, it is only 50% in schizophrenia [1]. In other words, the significance of a patient having a bipolar relative is greater than that of a schizophrenic relative (Table 1.4).

## What factors are considered when a patient with known schizophrenia is admitted?

First, one needs to make sure the diagnosis is correct. While the field of psychiatry has made great strides in reliability and stability of diagnoses, especially schizophrenia, it is still far from 100% [7, 8]. The last provider observed the patient over just a brief length of time, just like the current provider is about to do when a patient is admitted.

When a patient with confirmed schizophrenia is admitted to the inpatient unit, the primary task of the inpatient team is to determine what circumstances

led to decompensation [9]. The most frequent cause for relapse is suboptimal adherence to an outpatient medication regimen. In these cases it is useful to get an assessment of the patient's attitude toward his or her illness and toward medication, as denial of illness predisposes to poor medication adherence. In other cases there is a specific psychosocial trigger, such as the loss of a supportive figure or a change in work environment. Other possible social stressors include loss of domicile, intense family interactions, and financial uncertainty. It is helpful to look at the past record for similar instances of relapse to see if there is a repeating pattern of relapse during stressful life events. Finally, associated alcohol or substance use can undermine the effects of an adequate antipsychotic regimen. Sometimes, as in the vignette below, a psychotic family member has "induced" psychosis in a vulnerable patient:

> A 20-year-old man with schizophrenia and several hospitalizations in the past was stable on medication until several weeks prior to his current stay in the hospital. He was admitted through the emergency department in an acutely agitated, paranoid state that left him unable to attend to his basic needs. In a family meeting on the unit, his mother presented as floridly delusional herself! She had no understanding of, or empathy for, her son's illness, and was convinced that his problems were due to an antibiotic he had taken as a child. The patient, in a pathologically symbiotic tie to his mother, had adopted her viewpoint, and in the process had lost all trust in the treatment team at his outpatient clinic. His mother's level of disorganization left his family life in chaos, and he was further distressed by his mother's constant refrain to him that he "was not psychotic." His situation left him little recourse other than a further retreat into psychosis.

## What factors are involved in choosing an antipsychotic medication?

Most of the time, the first-line treatment will be an atypical antipsychotic (also known as a second-generation antipsychotic, SGA). First, attention must be paid to the history of medications that a patient has already tried, since there is no sense in "reinventing the wheel." Contacting the patient's current outpatient psychiatrist is extremely important, as this provider will likely have useful insight into the patient's history of medication responsiveness. Next, there are usually formulary constraints on medication choices as laid down by the insurance company, government, or other payer. Remaining factors in choosing an antipsychotic are patient preference, side-effect profile of the drug, and efficacy. Since the efficacy among the atypical antipsychotics is roughly

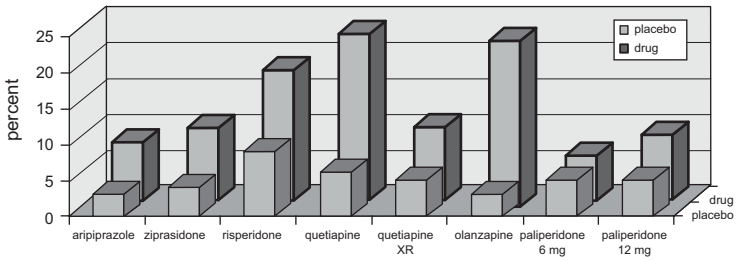


**Figure 1.2** Percentage of patients with significant weight gain (>7%) in clinical studies [14–20].

equivalent [10], the choice among these medications really entails consideration of possible side effects. These include metabolic side effects – weight gain, hyperlipidemia, genesis of diabetes – that are at the fore of current research and monitoring efforts [11, 12, 13]; and also extra-pyramidal symptoms (EPS), orthostatic hypotension, activation/akathisia, and sedation (Figure 1.2 and Table 1.5). Determining which effects are most important to avoid for a given patient will go a long way toward improving adherence. With regard to patient preference, if a patient tells you "I'm not taking haldol!" (for example), he or she may be referring to past EPS or other reactions to haloperidol. Efforts should be made to find an alternative.

Further suggestions about medications:

1. If formulary restrictions or limited financial resources force the use of a first-generation, or typical, antipsychotic, consider a mid-potency drug such as perphenazine. This will steer a course between the relatively high EPS risk of the high-potency drugs (e.g., haloperidol) and the alpha blockade of the low-potency choices. The CATIE study, the CUtLASS study, and comparisons of the two, show near equivalence in efficacy for the traditional antipsychotics when compared with the atypical antipsychotics [28–31].
2. Still, atypical antipsychotics are the preferred medications under most circumstances. The overall side-effect burden is less than typical antipsychotics, with lower incidence of neuroleptic malignant syndrome, EPS and akathisia, and tardive dyskinesia [27]. Most psychiatrists place clozapine in a separate category, even among the atypicals. In some countries in South America and Europe, as well as in China, clozapine is in fact used as a first-line drug. In the United States clozapine is reserved for patients with refractory psychosis or severe tardive dyskinesia. Clozapine can be a god-send for these patients, and can significantly improve functioning. Unfortunately it requires extra monitoring, and has a significant risk of weight gain [32].

**Table 1.5** Atypical antipsychotic *documented* side effects [13, 21–27, 33]

| Medication[1] | Forms | Common side effects (≥5%, ≥15%) | Serious side effects (<1% but reported, ≥1%) |
|---|---|---|---|
| Clozapine | tablet, ODT | *Metabolic:* **weight gain (>50%),** diabetes | sudden cardiac death, QTc prolongation (no reports of TdP), myocarditis (rare), **syncope (5%), agranulocytosis (1.3%),** eosinophilia (1%), **neutropenia (3%), seizure (5%),** acute dystonia, NMS, tardive dyskinesia |
| | | *EPS:* <5% overall | |
| | | *Other:* **tachyarrhythmia (25%),** sweating, **excessive salivation (31%),** constipation, xerostomia, **dizziness (19%),** headache, **somnolence (39%),** tremor, **vertigo (19%)** | |
| Olanzapine | tablet, ODT, IR IM | *Metabolic:* **hypercholesterolemia (up to 24%), hyperglycemia (0.1% to 17.4%), increased appetite (24%), increased triglycerides (up to 40%), weight gain (up to 57%), diabetes** | QTc prolongation (no reports of TdP but report of VFib), **dystonic events (2% to 3%),** acute dystonia, NMS, tardive dyskinesia |
| | | *EPS:* **overall 15–32%, parkinsonism 5% to 20%,** akathisia | |
| | | *Other:* orthostatic hypotension, **increased prolactin (31.2% to 61.1%),** constipation, indigestion, xerostomia, **dizziness (4% to 18%),** insomnia, **somnolence (2% to 52%),** cough, rhinitis | |

*(continued)*

**Table 1.5** *(Continued)*

| Medication[1] | Forms | Common side effects (≥5%, ≥15%) | Serious side effects (<1% but reported, ≥1%) |
|---|---|---|---|
| Risperidone[2] | tablet, ODT, solution, LA IM | *Metabolic:* **weight gain (up to 18%)** | sudden cardiac death, QTc prolongation w/ report(s) of TdP, **syncope (up to 2%),** seizure, **dystonia (5–11%),** NMS, tardive dyskinesia |
| | | *EPS:* **overall 7% to 31%,** akathisia, **parkinsonism 0.6% to 20%** | |
| | | *Other:* constipation, diarrhea, indigestion, nausea, **headache (15% to 21%),** somnolence, tremor, **anxiety (2% to 16%),** rhinitis | |
| Quetiapine | tablet, ER tablet | *Metabolic:* **increased cholesterol (9% to 16%), increased triglycerides (14% to 23%), weight gain (5% to 23%),** increased appetite | QTc prolongation w/ report of TdP, **syncope (1%), leukopenia (at least 1% to 5%),** neutropenia, seizure, acute dystonia, NMS, tardive dyskinesia |
| | | *EPS:* overall 4% to 12%, tremor | |
| | | *Other:* orthostatic hypotension, tachycardia, abdominal pain, constipation, indigestion, vomiting, **xerostomia (9% to 44%),** increased liver enzymes, backache, asthenia, **dizziness (9% to 18%) headache (17% to 21%),** insomnia, **sedation (30%), somnolence (16% to 34%), agitation (6% to 20%),** pharyngitis, fatigue, pain | |
| Zotepine | tablet | *Metabolic:* **weight gain (28%)** | single report of QTc prolongation, **seizures (7% to 17%),** acute dystonia, NMS, tardive dyskinesia |