

Virtual Mentor

American Medical Association Journal of Ethics
January 2009, Volume 11, Number 1: 43-48.

CLINICAL PEARL

Diagnosing and Treating Schizophrenia

Patrick Aquino, MD

Schizophrenia is a devastating illness with an early adulthood onset and persistent course. The illness affects all aspects of cognition, emotion, perception, and behavior in ways that impact the individual with the illness, his or her family, and society. Schizophrenia is a global disease, affecting 1 percent of the population worldwide [1]. In the United States, an estimated 3 million men and women (in equal numbers) have schizophrenia [2], and unfortunately, only half receive treatment [3]. Despite its relatively small numbers, the economic impact is significant [1]. History has offered many explanations for the genesis of schizophrenia; current research suggests that it is a multifactorial disease based in genetics, susceptibilities, and environment. Diagnosis is made on clinical information alone; there are no lab tests or imaging studies that confirm the diagnosis. Nearly 6 percent of those with serious mental illness, including schizophrenia, are homeless—roughly 200,000 Americans [4].

Diagnosis

The *Diagnostic and Statistical Manual IV-TR* establishes the clinical criteria for schizophrenia, with the foremost information concerning Criterion A [5]. Two or more signs and symptoms from Criterion A must be present for a significant portion of time during a 1-month period (or less if successfully treated): (1) delusions, (2) hallucinations, (3) disorganized speech, e.g., frequent derailment or incoherence, (4) grossly disorganized or catatonic behavior, or (5) negative symptoms, i.e., affective flattening, alogia, or avolition. Only one Criterion A symptom is required if delusions are bizarre or hallucinations consist of a single-voice running commentary on the person's behavior or thought, or two or more voices conversing with each other.

Though not necessarily for diagnostic purposes, hallucinations and delusions are most associated with schizophrenia. Hallucinations are disturbances in sensory perceptions not based in reality. They occur in any sensory modality, but most are auditory. Visual hallucinations can also be common. When tactile, gustatory, or olfactory hallucinations are observed, clinicians should consider investigating an organic etiology. Delusions are fixed, false beliefs.

The negative signs or disorganized speech and behavior are apparent to the examining clinician, whereas delusions and hallucinations are internal phenomena that can be discovered only by asking. Occasionally, patients respond to internal stimuli by looking around the room when no one is present, carrying on a conversation alone, or behaving or interacting as if someone or something else is

present. Clinicians who observe these behaviors confirm their clinical suspicion by follow-up inquiry. Medical students and residents are taught that the key to establishing rapport is empathizing with patients. But how does a person build rapport with someone whose speech is incomprehensible, who avoids eye contact, and who will not or cannot move? It's easy to see how these patients are quickly labeled as "difficult" or "crazy," euphemisms for unimportant. Yet they are some of our most sick patients.

Historical and collateral data are essential to the diagnosis. It is important to confirm that the symptoms represent schizophrenia, since all psychosis is not schizophrenia. People with several other major mental illnesses, including major depression and bipolar disorder, can exhibit symptoms similar to those of schizophrenia. In these individuals, however, the mood symptoms of depression or mania are more prominent. Several classes of substances including hallucinogens, amphetamines, and stimulants can cause intoxication syndromes that mimic schizophrenia, but the duration of symptoms should be limited by the pharmacology of the drug.

Treatment

Treatment of schizophrenia is fundamentally similar to the treatment of other chronic diseases. The lifelong presence of symptoms and deteriorating course requires maintenance as well as symptomatic treatment of exacerbations. In most instances collaboration with a psychiatrist is necessary. There are a number of pharmacologic options available for the treatment of psychotic symptoms—typically categorized as first-generation (FGA) or typical antipsychotics and second-generation (SGA) or atypical antipsychotics. Both types block dopamine receptors, though relative ratios or receptor targets may be different. Several studies have demonstrated the efficacy of all of these medications [6, 7]. The same data demonstrate that SGAs are not necessarily better than FGAs; but they are additional medications in an ever-expanding armamentarium of treatments. Choice of medication should be guided by history of positive effects in the individual patient, side effects, and individual choice. A risk-benefit discussion should be conducted with the patient, since all medications carry risks.

The FGAs (e.g., haloperidol, chlorpromazine, perphenazine) impose higher risks of extra-pyramidal side effects (EPS)—dyskinesia, akathisia or parkinsonian-like movements—associated with increasing amounts of dopamine blockade. The side effects must be weighed against the clinical benefit. EPS can be managed with dose reduction, change in antipsychotic, or anticholinergic medication. Tardive dyskinesia (TD) is a serious side effect characterized by the delayed onset (tardive) of irregular, involuntary choreoathetoid movements of the face, trunk, or extremities. The risk of developing TD is approximately 3 to 5 percent per year of exposure to FGAs [8] and treatment is difficult after onset, so it must be considered in the risk-benefit calculations at the start of treatment.

The SGAs (e.g., risperidone, olanzapine, quetiapine, ziprasidone, aripiprazole, clozapine) carry a lower risk of EPS and are thought to not worsen the negative

symptoms of schizophrenia. These drugs are effective for the psychotic symptoms with fewer risks of EPS and TD [8]. But the risks of developing metabolic syndrome, hypertension, dyslipidemia, or glucose intolerance are significant [9, 10]. Neuroleptic malignant syndrome, characterized by fever, rigidity, confusion, and autonomic instability, is a life-threatening side effect of all antipsychotic medications. This is a medical emergency and requires supportive care, discontinuing antipsychotics, and possibly other interventions [11]. Again, careful consideration of the risks and benefits is essential to choosing treatment.

Pharmacologic intervention is only one facet of the treatment. Although difficult to accomplish during the acute stages of the disease, education and understanding of the disease are necessary to keep an individual connected to caregivers for management. The vast majority of schizophrenic patients have caring families and support systems. As nonpharmacologic treatment of schizophrenia moves from the hospital to community, progress of those with the illness improves. Managing their psychosis is only the beginning. Once that is accomplished, we depend on organizations to help those with schizophrenia engage in the pursuits we all strive for—work, relationships, and meaning.

Comorbidities and Screening

After diagnosing schizophrenia, it is important to screen for other somatic conditions, particularly because of the significant metabolic side effects of antipsychotics. Medical illnesses occur in three-quarters or more of those with severe mental illness, including schizophrenia [12]. Unfortunately, medical illnesses often go undiagnosed, resulting in higher mortality rates and mounting survival gaps with a potential of 13 to 30 years of life lost [13]. Larger studies, including the CATIE schizophrenia trial, indicate higher rates of diabetes, hypertension, cardiac, pulmonary, hepatic, and infectious diseases including hepatitis and HIV [6, 14, 15]. Individuals with severe and persistent mental illness are less likely to receive full medical services for chronic diseases like diabetes or to have cardiac revascularization in coronary artery disease [16, 17]. Though they do not necessarily have higher rates of cancer than the general population, people with mental illness are more likely to die of cancer, possibly because of deficiencies in screening and treatment [18].

Those with schizophrenia have an increased likelihood to have comorbid substance-use disorders (not including nicotine), so screening is important. Several quick screening tools can be administered during any clinic visit [3, 19, 20]. The risks associated with tobacco use are well-recognized. Ninety percent of individuals with schizophrenia smoke cigarettes and when they do, they generally smoke more cigarettes with greater frequency and increased levels of tar [21, 22]. Pharmacologically, smoking also decreases amounts of active antipsychotics [23]. Treating schizophrenia requires a multimodal approach aimed at psychiatric, somatic, and addiction symptoms.

Like many chronic illnesses, early recognition of schizophrenia can yield beneficial results. Identification in the primary care clinic or emergency department should result in a referral or consultation with psychiatric care to facilitate treatment. Early intervention can establish solid, encompassing care and help patients limit the revolving door of service utilization. As with many other chronic illnesses, treatment of schizophrenia requires a team approach of physicians, family, and community. With aggressive and progressive treatment and compassion we can help these individuals cope with their illness and attain their potential.

References

1. World Health Organization. World health report 2001—mental health: New understanding, new hope. 2001. <http://www.who.int/whr/2001/en/>. Accessed November 16, 2008.
2. Regier DA, Narrow WE, Rae DS, Manderscheid RW, Locke BZ, Goodwin FK. The de facto US mental and addictive disorders service system. Epidemiologic catchment area prospective 1-year prevalence rates of disorders and services. *Arch Gen Psychiatry*. 1993;50(2):85-94.
3. Sadock BJ, Sadock VA. *Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2007.
4. Substance Abuse and Mental Health Services Administration. Blueprint for change: ending chronic homelessness for persons with serious mental illnesses and co-occurring substance use disorders. 2003. <http://download.ncadi.samhsa.gov/ken/pdf/SMA04-3870/SMA04-3870.pdf>. Accessed November 17, 2008.
5. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders DSM-IV TR*. 4th ed. Text Revision. Washington, DC: American Psychiatric Publishing; 1994.
6. Lieberman JA, Stroup TS, McEvoy JP, et al. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med*. 2005;353(12):1209-1223.
7. Jones PB, Barnes TR, Davies L, et al. Randomized controlled trial of the effect on Quality of Life of second- vs first-generation antipsychotic drugs in schizophrenia: cost utility of the latest antipsychotic drugs in schizophrenia study (CUtLASS 1). *Arch Gen Psychiatry*. 2006;63(10):1079-1087.
8. Correll CU, Schenk EM. Tardive dyskinesia and new antipsychotics. *Curr Opin Psychiatry*. 2008;21(2):151-156.
9. Lehman AF, Kreyenbuhl J, Buchanan RW, et al. The schizophrenia patient outcomes research team (PORT): updated treatment recommendations 2003. *Schizophr Bull*. 2004 30(2):193-217.
10. Nasrallah HA, Meyer JM, Goff DC, et al. Low rates of treatment for hypertension, dyslipidemia and diabetes in schizophrenia: data from the CATIE schizophrenia trial sample at baseline. *Schizophr Res*. 2006;86(1-3):15-22.
11. Strawn JR, Keck PE Jr, Caroff SN. Neuroleptic malignant syndrome. *Am J Psychiatr*. 2007;164(6):870-876.

12. Jones DR, Macias C, Barreira PJ, Fisher WH, Hargreaves WA, Harding CM. Prevalence, severity, and co-occurrence of chronic physical health problems of persons with serious mental illness. *Psychiatr Serv*. 2004;55(11):1250-1257.
13. Colton CW, Manderscheid RW. Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states. *Prev Chronic Dis*. 2006;3(2):A42.
14. Cournos F, Horwath E, Guido JR, McKinnon K, Hopkins N. HIV-1 infection at two public psychiatric hospitals in New York City. *AIDS Care*. 1994;6(4):443-452.
15. Goldberg RW, Himelhoch S, Kreyenbuhl J, et al. Predictors of HIV and hepatitis testing and related service utilization among individuals with serious mental illness. *Psychosomatics*. 2005;46(6):573-577.
16. Goldberg RW, Cooke B, Hackman A. Mental health providers' involvement in diabetes management. *Psychiatr Serv*. 2007;58(11):1501-1502.
17. Druss BG, Bradford DW, Rosenheck RA, Radford MJ, Krumholz HM. Mental disorders and use of cardiovascular procedures after myocardial infarction. *JAMA*. 2000;283(4):506-511.
18. Lawrence D, Holman CD, Jablensky AV, Threlfall TJ, Fuller SA. Excess cancer mortality in Western Australian psychiatric patients due to higher case fatality rates. *Acta Psychiatr Scand*. 2000;101(5):382-388.
19. Ewing JA. Detecting alcoholism: the CAGE questionnaire. *JAMA*. 1984;252(14):1905-1907.
20. Selzer ML. The Michigan alcoholism screening test (MAST): the quest for a new diagnostic instrument. *Am J Psychiatry*. 1971;127(12):1653-1658.
21. de Leon J, Diaz FJ. A meta-analysis of worldwide studies demonstrates an association between schizophrenia and tobacco smoking behaviors. *Schizophr Res*. 2005;76(2-3):135-157.
22. Holland J, eds. *Psycho-Oncology*. 1st ed. New York, NY: Oxford University Press; 1998.
23. Sandson NB. *Drug Interactions Casebook: The Cytochrome P450 System and Beyond*. Washington DC: American Psychiatric Publishing; 2003.

Patrick Aquino, MD, is a fourth-year resident at the University of Maryland/Sheppard Pratt Psychiatry Residency Program in Baltimore. He is the chief resident of consultation-liaison and emergency services at the University of Maryland Medical Center. Dr. Aquino lectures to medical students on anxiety and somatoform disorders and has received an AADPRT/George Ginsberg Fellowship for his role in medical student and resident education. He is planning on completing a fellowship in psychosomatic medicine.

Related in VM

[The "Army of Lost Souls,"](#) January 2009

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Copyright 2009 American Medical Association. All rights reserved.