Preventive Interventions for Schizophrenia: A Case Report

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Abstract

Prodromal phase of psychosis refers to the period from the first noticeable symptoms or unusual experiences to the first prominent psychotic symptoms. Early recognition and treatment of schizophrenia is one of the most important therapeutic goals. However, symptoms presented during the prodromal phase of psychosis are often nonspecific and difficult to recognize. Therefore, the Scale of Prodromal Symptoms (SOPS) and the Structured Interview for Prodromal Syndromes (SIPS) are designed to help clinicians identify prodromal symptoms. In addition, the Comprehensive Assessment of At-Risk Mental States Scale (CAARMS) is designed to help recognize individuals at high risk. Furthermore, preventive interventions have been suggested for such at-risk patients to delay or prevent progression to psychosis. These interventions include psychosocial support, close monitoring of worsening of the symptoms, psychotherapeutic approaches, and early judicious use of antipsychotics, if warranted.

Key Words: Psychosis, Schizophrenia, Antipsychotic

Introduction

The prodromal phase of psychosis refers to the period from first noticeable symptoms or unusual experiences to the first prominent psychotic symptoms (1). Retrospective studies have shown that the average duration of symptoms before first admission is between 2 to 6.5 years (1). During this phase, patients frequently endorse indistinct symptoms such as changes in perceptions, beliefs, cognition, mood, affect and behavior, as well as sleep disturbances, abuse of alcohol or drugs, and social decline (1, 2). These symptoms are not unique to schizophrenia and can be seen in other psychiatric disorders (1). However, studies have shown that poor functioning, a high level of depression, reduced attention and family history of psychosis all predict psychosis (3). Risk factors associated with later development of psychotic illness are either a parent or close family member having psychotic illness, mental retardation (low IQ), unfavorable family environment (having major stresses), substance abuse (particularly marijuana), distortion in smell, and schizotypal personality disorder. Risk of developing psychosis later in life increases with an increase in the number of risk factors involved in a particular case.

Early recognition and treatment of schizophrenia is one of the most important therapeutic goals (4). However, symptoms presented during the prodromal phase of psychosis are often nonspecific and difficult to recognize (5). The positive symptoms include unusual thought content, suspiciousness, grandiosity, perceptual disturbances, conceptual abnormalities, and conceptual disorganization. The negative symptoms include social isolation, avolition, decreased expression and experience of emotions, poverty of thought content, and

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deterioration in functioning. Disorganized behaviors usually appear as odd behavior or appearance, bizarre thinking, trouble with focus and attention, and impairment in personal hygiene. General symptoms such as sleep disturbance, dysphoric mood, motor disturbances, and impaired tolerance to stress can also emerge.

Early recognition and treatment of schizophrenia is one of the most important therapeutic goals (4).

The Scale of Prodromal Symptoms (SOPS) (6) and the Structured Interview for Prodromal Syndromes (SIPS) (7) are designed to help clinicians identify prodromal symptoms. A number of clinical studies have proposed the predictive factors and criteria thought to indicate the development of schizophrenia (3). In addition, the Comprehensive Assessment of At-Risk Mental States Scale (CAARMS) is designed to help recognize individuals at high risk (2). Literature has shown that patients who meet the criteria of the CAARMS and SIPS/SOPS are considered to have at-risk mental states (ARMS) and have high rates of conversion to psychosis (1). Preventive strategies have been suggested for such patients to delay or prevent progression to psychosis, including psychosocial support, close monitoring of worsening of the symptoms, psychotherapeutic interventions (8), and early judicious use of antipsychotics if warranted. Nontreatment or delay in treatment can cause a rapidly deteriorating course of illness which can lead to difficulties in managing psychotic symptoms and, hence, improved functioning.

The following case illustrates multiple risk factors and likely presentation of later development of psychosis.

The Case

The patient is a seventeen-year old female who was born to a mother who, reportedly, had schizophrenia and was adopted at the age of three. The patient's childhood was unremarkable until she was ten years old. At that time, she started having subjective feelings of "not being right." Early symptoms appear to be feeling depressed, suspiciousness about others, lack of interest in the usual activities including schoolwork and, hence, poor school performance, decreased attention concentration, and social avoidance. She also exhibited self-cutting behavior, as well as oppositional and agitated behaviors. She was seen by the school counselor more often than not.

At age thirteen, the patient was admitted for her first psychiatric hospitalization due to worsening depressive symptoms and self-cutting behavior. She was treated with oxcarbamazepine with some improvement and was discharged to a school for emotionally disturbed children. This hospitalization was followed by four psychiatric admissions for depression, self-cutting, and feeling paranoia that people were watching her. During that time, she was sporadically abusing marijuana, cocaine, alcohol, and clonazepam. Oxcarbamazepine was increased, and aripiprazole and quetiapine were added.

At age sixteen, she was readmitted for a first-rank psychotic episode: she believed that she had AIDS and that her food was being poisoned; subsequently, she stopped eating and lost significant weight. She did not show clinical response on the previous medication regimen. Olanzapine was started and titrated up to 25 mg/d over a five-week period, but she remained psychotic and disorganized. Olanzapine was cross tapered to clozapine, which was titrated up. She showed marked improvement at a dose of 350 mg/d of clozapine (clozapine level was 360 and norclozapine level was 141). After four weeks, her behavior, thinking, mood, and psychosis were significantly improved, with no major side effects. She was discharged and referred back to her parents with outpatient psychiatric follow-up. After eight months, she maintained her improvement and compliance with medications.

Discussion

The patient in this case report had multiple risk factors that included a strong family history of psychosis, gradually worsening depression, social isolation, declining school functioning, decreased attention concentration, perceptual disturbances, superimposed with self-injurious behavior, substance abuse, and rapidly deteriorating course of illness. Initial assessment would warrant close monitoring and frequent evaluation to assess the diagnostic clarification. Earlier signs of development of psychosis should have been addressed using available treatment modalities to help establish a symptoms-free state sooner than not. Instead, she was treated as having an evolving mood disorder with behavioral problems (although CAARMS was not used, the patient seemed to meet the criteria of at-risk mental state). After her first psychiatric admission, her psychotic symptoms became more pronounced and social functioning was rapidly declining, at which point she was treated with oxcarbazepine and clonazepam, which seemed not to help, and she developed treatment-resistant psychosis.

Literature has shown that patients who meet the criteria of the CAARMS and SIPS/SOPS have at-risk mental states (ARMS) (1, 2). Therefore, a number of interventions for preventing psychosis in ARMS patients have been described and recommended. These interventions include monitoring mental status, providing psychosocial treatment, including

family support and psychoeducation, and even initiating neuroleptic medications (3).

CAARMS is a diagnostic tool for the prodromal phase measuring a combination of seven symptom domains (Positive symptoms, Cognitive change/Attention concentration, Emotional disturbance, Negative symptoms, Behavioral change, Motor/Physical changes, and General Psychopathology), as well as change in functioning and family history (1, 2). In a study of forty-five patients who met the criteria of the CAARMS, there was a 42% rate of conversion to psychosis within twelve months (1, 2). Both SIPS and SOPS are designed to help assess severity of the prodromal phase (1, 6, 7). In a study of twenty-nine patients, SIPS and SOPS helped differentiate prodromal from nonprodromal symptoms in 93% of the patients, and the conversion rate to psychosis in the prodromal patients was 46% at six months and 54% at twelve months (1).

In a study of forty-five patients who met the criteria of the CAARMS, there was a 42% rate of conversion to psychosis within twelve months (1, 2).

Two randomized, controlled medication trials for prevention of onset of psychosis have been reported. The first trial randomized 59 ARMS patients to either low-dose risperidone and cognitive-behavioral therapy (31 patients) versus need-based treatment (28 patients) (9). It was found that 9.7% (3 patients) of the risperidone and cognitive-behavioral therapy group converted to psychosis versus 35.7% (10 patients) in the need-based treatment group after six months of follow-up, but that there was no significant difference between the two groups after another six months of observation (9). The second trial randomized 60 ARMS patients to either olanzapine (31 patients) or placebo (29 patients) (10). It was reported that 16.1% (5 patients) in the olanzapine group versus 37.9% (11 patients) in the placebo group converted to psychosis after one year (10).

Moreover, one open trial used a low-dose antipsychotic (haloperidol or risperidone) together with supportive therapy and psychoeducation in 42 ARMS patients. This study found that only 7.1% (3 patients) progressed to psychosis during the six months of treatment, and no new psychotic episodes were reported during the six-month follow-up (11). In addition, studies that examined the cognitive-behavioral therapy in ARMS patients have proven its effectiveness in lowering the rate of conversion to psychosis, as well as improving overall functioning (12, 13).

Although the results of the above mentioned studies are encouraging, the sample sizes are small, the results are not robust, and psychopharmacologic treatment is not free from side effects both immediately and in the long run, and the risk of treating and exposing patients to medications when not required cannot be minimized. Each case needs to be evaluated on its own individual and unique merits prior to choosing treatment options.

A multimodal approach should be considered, ranging from close monitoring, psychoeducation, supportive family therapy, appropriate psychotherapy, and the use of antipsychotics if warranted.

Conclusions

In conclusion, this case report represents an example of emerging schizophrenia. Although the patient displayed multiple risk factors including genetic vulnerability, decline in functioning, depressed mood, substance abuse, social withdrawal, and disorganized thoughts, treatment seems to have been unsuccessful in stopping or slowing down the process of psychosis. On the other hand, clinicians and psychiatrists are facing a dilemma as to when to initiate treatment when there is no decisive data to support type of treatment modality. This case may shed some light on how an adolescent presenting with vague symptoms of depression, cognitive deficits, social awkwardness, etc. can progress in many different ways; therefore, clinicians need to remain vigilant concerning the many different possibilities of emerging adolescent symptoms. Had this patient been treated with an early, multiaxial approach including psychosocial support, cognitive-behavioral therapy, group therapy and appropriate use of efficacious antipsychotics, the results may have been very different than reported here.

Adolescent years are crucial for personality development, career building, developing self image within society, and progressing to achieve high-end goals. These challenges put adolescents at an increased level of stress, and appropriate interventions to control symptoms so as to achieve the best level of functioning can make a huge difference for the coming years. Clinical staging of the psychotic illness according to the progression of the disease creates a preventative framework for early interventions (9). A multimodal approach should be considered, ranging from close monitoring, psychoeducation, supportive family therapy, appropriate psychotherapy, and the use of antipsychotics if warranted. Severity of illness, level of functioning, and course of

illness could help the clinician formulate and individualize the appropriate treatment intervention. Moreover, each case should be evaluated before introducing antipsychotics; long-term side effects of medications should be weighed against the risk of not treating the adolescent. This case also raises a question as to the benefits of early treatment with clozapine in a first episode of psychosis.

A combination of ARMS with risk factors may lead to an increased number of those with at-risk mental states, who truly can benefit from early intervention of multiple treatment modalities. Preventative trials in ARMS patients have shown promising results in delaying or preventing onset of psychosis (1, 12). More clinical research is needed to set forth guidelines concerning when to treat, and what treatment modality is most appropriate. However, does the identification of individuals who are at high risk of developing psychosis, and then initiating therapeutic interventions targeting the prodromal symptoms, improve the prognosis? Research is also needed to examine the effectiveness of preventive interventions on the course of illness and long-term outcomes.

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