IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A CASE REPORT ON SCHIZOPHRENIA

Karra Geetha[1*], Shaik Razia Begum [2], Anil kumar [2], Nur Hussain [2], T.Ramarao[3].

1.Associate Professor, Department of Pharmaceutics, CMR College of Pharmacy, Kandlakoya, Medchal.

2.Department of Pharm D, CMR College of Pharmacy, Kandlakoya, Medchal.

3. Principal, Department of Pharmaceutical Chemistry, CMR College of pharmacy. Kandlakoya, Medchal.

Author Institution: CMR College of Pharmacy, Hyderabad, India

Abstract

Schizophrenia is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. People with schizophrenia may seem like they have lost touch with reality. Schizophrenia is often misunderstood as split personalityby many people. It is a disease that markedly affects social and occupational functioning, interpersonal relationships, morbidity and mortality. A person suffering with it eventually loses his interest in basic needs of life. Symptoms of schizophrenia are divided into positive, negative and cognitive symptoms. Schizophrenia can be treated with antipsychotics which includes both typical and atypical antipsychotics. Along with the pharmacotherapy, psychosocial treatment is also done.

Keywords: Schizophrenia; Non-compliant schizophrenic patients

Introduction

Schizophrenia is a psychological illness which affects approximately 1% of the population. It is not just a single ailment but a family of disorders. The sufferer often lacks the connection with real world and lives in his own imaginary world.The exact cause is still unknown however, different theories are presented for understanding its pathophysiology. This includes: genetic theory, dopaminetheory, non-developmental theory and psychosocial theory.

Symptoms of Schizophrenia usually appear between the ages of 16 years to 30 years. They are categorized into positive, negative and disorganized symptoms.

Table: 1 Symptoms of Schizophrenia

Positive symptoms	Negative symptoms	Disorganized symptoms
Delusions	Affective flattering	Disorganized speech
Hallucinations	Alogia	Thought disorder
Combativeness	Anhedonia	Disorganized behavior
Insomnia	Apathy	Poor attention
	Asocial behavior	

.

A person who has at least two of the above symptoms for about one month will be diagnosed as a schizophrenic patient. The most common symptoms reported are hallucination and delusions [1].

Schizophrenia is divided into three further types, with each type having unique features. It includes: paranoid, catatonic and disorganized. Patients with paranoid type complain off hallucinations and delusions. Inappropriate effect and disorganized speech patterns are the characteristics of disorganized type while catatonic schizophrenia displays strange and bizarre behavior [2].

As the exact pathophysiology of schizophrenia is still uncertain therefore the treatment mainly focuses on the elimination of symptoms. Pharmacotherapy as well as the psychotherapy is given to the patients. The goals of the therapy therefore emphasize on the removal of symptoms, relapse of disease and improving the quality of life. Antipsychotics are considered to be the

Cornerstone in the pharmacotherapy. They are further divided into two main classes: Typical antipsychotics and atypical antipsychotics, among which the atypical ones are new generation antipsychotics and have less side effects as compared to the conventional typical antipsychotics [3].

Etiology

Several studies postulate that the development of schizophrenia results from abnormalities in multiple neurotransmitters, such as dopaminergic, serotonergic, and alpha-adrenergic hyperactivity or glutaminergic and GABA hypoactivity. Genetics also plays a fundamental role - there is a 46% concordance rate in monozygotic twins and a 40% risk of developing schizophrenia if both parents are affected. The gene Neuregulin (NGR1), which is involved in glutamate signaling and brain development, has been implicated, alongside Dysbindin (DTNBP1), which helps glutamate release, and Catecholamine O-Methyl Transferase (COMT) polymorphism, which regulates dopamine function. As a forementioned, there are also several environmental factors associated with an enhanced risk of developing the disease:

- Abnormal fetal development and low birth weight.
- Gestational diabetes.
- Preeclampsia.
- Emergency cesarean section and other birthing complications.

- Maternal malnutrition and vitamin D deficiency.
- Winter births - associated with a 10% higher relative risk.
- Urban residence increases the risk of developing schizophrenia by 2% to 4%

The incidence is also up to ten times greater in children of African and Caribbean migrants compared to whites, according to a study conducted in Britain [4]. The association between cannabis use and psychosis has been widely studied, with recent longitudinal studies suggesting a 40% increased risk, while also suggesting a dose-effect relationship between the use of the drug and the risk of developing schizophrenia [5].

Epidemiology

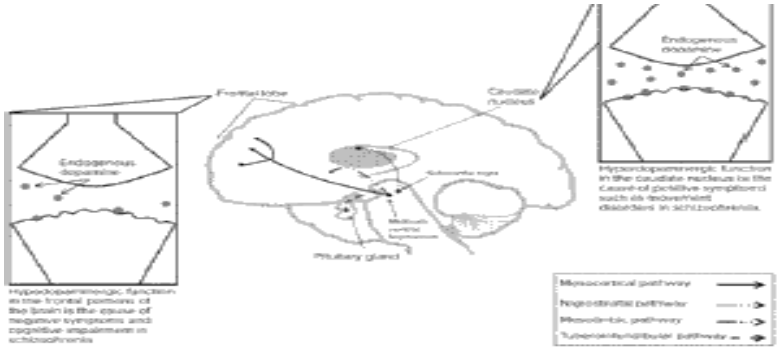
The lifetime risk of developing schizophrenia is around 1%. Men are more likely to receive the diagnosis than women, with an incidence rate ratio of approximately 1.7 (95% CI, 1.46–1.97). [6] In men, the peak incidence is in the early twenties and then declines; women have a peak incidence later in their twenties, with a slower decline in incidence. Notably, after the mid-forties, new schizophrenia diagnoses become more common in women than in men. Men typically exhibit an earlier onset of the disease, poorer functioning before the illness becomes apparent, more pronounced negative symptoms, and a higher incidence of alcohol and substance use disorders.[7][8] While gradual onset during adolescence is common, childhood-onset schizophrenia, defined as younger than 13 years, is rare and typically represents a more severe form of the illness with a poor response to antipsychotic medication.[9] Additionally, a higher rate of schizophrenia is linked to urban living and migrant status.

Pathophysiology

There are three main hypotheses regarding the development of schizophrenia. The neurochemical abnormality hypothesis argues that an imbalance of dopamine, serotonin, glutamate, and GABA results in the psychiatric manifestations of the disease. It postulates that four main dopaminergic pathways are involved in the development of schizophrenia. This dopamine hypothesis attributes the positive symptoms of the illness to excessive activationof D2 receptors via the mesolimbic pathway, while low levels of dopamine in the nigrostriatal pathway are theorized to cause motor symptoms through their effect on the extrapyramidal system. Low mesocortical dopamine levels resulting from the mesocortical pathway are thought to elicit the negative symptoms of the disease. Other symptoms such as amenorrhea and decreased libido may be caused by elevated prolactin levels due to decreased availability of tubero infundibular dopamine as a result of blockage of the tubero infundibular pathway. Evidence showing exacerbation of positive and negative symptoms in schizophrenia by NMDA receptor antagonists insinuates the potential role of glutaminergic hypo activity while serotonergic hyperactivity has also been shown to play a role in schizophrenia development [10]. There are also arguments that schizophrenia is a neurodevelopmentaldisorder based on abnormalities present in the cerebral structure, an absence of gliosis suggesting in utero changes, and the observation that motor and

Cognitive impairments in patients precede the illness onset. Conversely, the disconnect hypothesis focuses on the neuroanatomical changes seen in PET and fMRI scans (Figure). There is a reduction in grey matter volume in schizophrenia, present not only in the temporal lobe but in the parietal lobes as

well. Differences in the frontal lobes and hippocampus are also seen, potentiallycontributing to a range of cognitive and memory impairments associated with the disease.



Differential diagnoses that need to be considered are as follows:

- Bipolar I Disorder with psychotic features.
- Delusional disorders.
- Schizoaffective disorder.
- Brief psychotic disorder.
- Psychosis NOS.
- Certain personality disorders.
- Drug and medication-induced psychosis.

Online is a higher priority than simple web access in the connection among on the web and disconnected activism [11]. All in all, the present status of the writing lays out a fascinating picture of how web-based entertainment is used for the aggregate activity. The web is generally utilized for emancipatory

activities to bring issues to light, rally individuals, set extremist plans, discuss and assess activities, yet additionally unfairly (by gatherings and specialists) to enrapture, misguide, and subdue undesirable activities. Indisputably, minority gatherings can all the more effectively connect and make themselves understood through online entertainment [12]. This gives online entertainment an extraordinary dynamic quality and pluralism; however, it might likewise isolate and spellbind social orders. Progressively, on the web and disconnected activism are indivisible and integral social-mental instruments for politicization,discussion, activation, and struggle [13].

Physical Examination

Physical examination of a patient with schizophrenia poses unique challenges in meeting the patient's needs. The assessment should be performed with heightened sensitivity and awareness of the patient's trauma history and potential anxiety, paranoia, aggression, or other psychiatric symptoms. In the physical examination of patients with schizophrenia, assessing general appearance, including hygiene and grooming, offers insights into self-care habits. Vital signs such as blood pressure and heart rate are

crucial in identifying underlying health issues. A comprehensive examination covers neurological, cardiovascular, respiratory, and abdominal assessments, highlighting the importance of checking for medication side effects and coexisting conditions. A dermatological examination helps detect signs of substance use or skin infections. Assessing for metabolic syndrome is also essential, mainly due to the risks associated with certain antipsychotic medications.

Mental status examination

The Mental Status Examination (MSE) for schizophrenia varies based on symptom severity, specific manifestations, and coexisting conditions.

Appearance and behavior: Patients often present with disheveled or unusual attire, reflecting a lack of self-care. Behavior may range from psychomotor retardation to agitation, and patient responses can vary from being cooperativeto being unpredictable, withdrawn, or hostile.

Psychomotor activity: There may be psychomotor agitation or retardation. Some patients may exhibit grossly disorganized or abnormal motor behavior, including catatonic behaviors, such as stupor, mutism, odd gestures, or posturing.

Speech: Speech patterns can be disorganized, tangential, or incoherent (word salad). Patients' speech may include neologisms (creating new words or phrases without meaning).

Mood and affect: Assess the degree of hopelessness. Affect can be flat, blunted, or inappropriate to the context of the conversation. Affect may be incongruent with the reported mood, such as laughing when discussing sad events.

Thought content: Delusions (fixed false beliefs) may be present and bizarre (extremely implausible). Thought broadcasting, thought insertion, or withdrawalmay also be reported.

Thought process: Thought processes (inferred from the patient's speech) may be disorganized, leading to illogical connections, loose associations, or thought blocking when the patient suddenly stops speaking mid-sentence.

Perceptual abnormalities: Hallucinations, mainly auditory, are common but may be in any sensory modality. Patients may report hearing voices commenting on their actions or conversing with each other. It is important to assess for command hallucinations that tell the patient to engage in violent or dangerous behavior.

Risk: Assess current suicidality (ideas, plans, access to weapons), self-injury (ideas or behaviors), and aggressive ideas or behaviors.

Cognition: Cognitive deficits may affect memory, attention, and executive functions. Assess for orientation to person, place, and date.

Insight and judgment: Insight varies, with some patients partially aware of their condition while others lack insight completely. Judgment is often impaired, affecting the ability to make sound decisions or understand the consequences of actions.

No laboratory, psychometric, or radiologic studies currently exist for diagnosingschizophrenia.

Diagnosis

As described earlier, schizophrenia is a chronic disorder with numerous symptoms, where no single symptom is pathogenic. A diagnosis of schizophrenia is reached through an assessment of patient-specific signs and symptoms, as described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). The DSM-5 states that "the diagnostic criteria [for schizophrenia] include the persistence of two or more of the following active-phase symptoms, each lasting for a significant portion of at least a one-month period: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior, and negative symptoms." At least one of the qualifying symptoms must be delusions, hallucinations, ordisorganized speech.

Moreover, the DSM-5 states that, to warrant a diagnosis of schizophrenia, the patient must also exhibit a decreased level of functioning regarding work, interpersonal relationships, or self-care. There must also be continuous signs of schizophrenia for at least six months, including the one-month period of active- phase symptoms noted above.

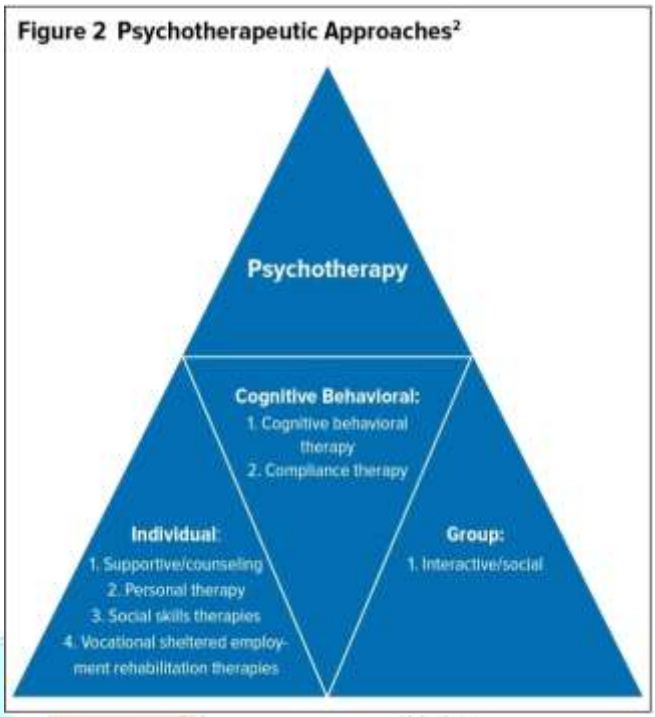
A comprehensive differential diagnosis of schizophrenia is necessary to distinguish the disorder from other mental conditions, such as major depressive disorder with psychotic or catatonic features; schizoaffective disorder; Schizophrenia disorder; obsessive-compulsive disorder; body dysmorphic disorder; and post-traumatic stress disorder. Schizophrenia can be differentiated from these similar conditions through a careful examination of the duration of the illness, the timing of delusions or hallucinations, and the severity of depressive or manic symptoms. In addition, the clinician must confirm that the presenting symptoms are not a result of substance abuse or another medical condition.[14]

Treatment and Management options

Non-pharmacological Therapy

The goals in treating schizophrenia include targeting symptoms, preventing relapse, and increasing adaptive functioning so that the patient can be integrated back into the community. Since patients rarely return to their baseline level of adaptive functioning, both non-pharmacological and pharmacological treatments must be used to optimize long-term outcomes. Pharmacotherapy is the mainstay of schizophrenia management, but residual symptoms may persist. For that reason, non-pharmacological treatments, such psychotherapy, are also important. [15]

Psychotherapeutic approaches may be divided into three categories: individual, group, and cognitive behavioral (Figure 2). Psychotherapy is a constantly evolving therapeutic area. Emerging psychotherapies include meta-cognitive training, narrative therapies, and mindfulness therapy. Non-pharmacological treatments should be used as an addition to medications, not as a substitute for them.



Not only do non pharmacological therapies fill in gaps in pharmacological treatments; they can help to ensure that patients remain adherent to their medications.[16] Non adherence rates in schizophrenia range from 37% to 74%,depending on the report.[17] Individuals with mental disorders tend to be less adherent for several reasons. They may deny their illness; they may experience adverse effects that dissuade them from taking more medication; they may not perceive their need for medication; or they may have grandiose symptoms or paranoia.

Patients with schizophrenia who stop taking their medication are at increased risk of relapse, which can lead to hospitalization. Therefore, it is important to keep patients informed about their illness and about the risks and effectiveness of treatment.[18] Some psychotherapies can help educate patients about the importance of taking their medications. These initiatives include cognitive behavioral therapy (CBT), personal therapy, and compliance therapy.

In addition to focusing on the patient, treatment programs that encourage family support have been shown to decrease re hospitalization and to improve social functioning. Family members can be taught how to monitor the patient and when to report adverse effects of treatment to the clinician. Most psycho therapies promote family involvement.

Pharmacological therapy

Antipsychotics are the primary treatment for schizophrenia and are usually the first line of defense for acute schizophrenic episodes. They work by blocking dopamine and other brain chemicals. The goal of treatment is to manage symptoms with the lowest possible dose.

Here are some types of antipsychotics:

- Typical antipsychotics: One of the two main types of medications used to treat schizophrenia.
- Atypical antipsychotics: A newer type of antipsychotic that's generally preferred because it has a lower risk of serious side effects than conventional antipsychotics. Some examples include quetiapine,risperidone, and aripiprazole.
- Haloperidol: Can be taken orally, intravenously, or as an intramuscular injection.

- Risperidone: Also used to treat bipolar disorder and autism spectrum disorder.
- Brexpiprazole: Used to treat schizophrenia, depression, and agitation associated with dementia.[19]

MANAGEMENT

During this phase of illness, symptoms are stable and usually less severe than in the acute stage. Negative symptoms may predominate and deficits in social and occupational functioning become more apparent. Maintaining or improving level of functioning, prevention of recurrences and promoting psychological/personal recovery are the major aims of treatment during this phase of management.

During this phase, follow-ups can be scheduled once every 2-3 months and more frequently in times of crises, or if desired by the family. During this phase of management, regular feedback need to be obtained from the family. Any new issues that arise are discussed and some of the previous issues may need reemphasis. Management in the stable phase involves carrying forward the gains achieved. The management plan should be relooked for any need for change. It also involves determining the goals, continuing further assessment, continuing with antipsychotic medications and monitoring of side effects and furthering the psychosocial interventions. In addition the management needs to focus on rehabilitation, enhancing personal recovery.

Goals of treatment: The goals of treatment during this phase are to maintain or improve functioning, improve quality of life and facilitate personal recovery. Psychotic exacerbations need to be effectively treated. Adverse effects are to be noted and managed.

Re-evaluating/modifying the treatment plan: As time elapses the nature of the illness, problems faced by the relatives, needs of the patient and the family and previously determined targets are all expected to change. Regular contact, awareness and monitoring are needed to detect these changes. Ongoing assessment is thus essential. It allows those modifications to be made in the treatment plan, which are required to accommodate any new problems or demands that may have arisen.

Assessments and monitoring: Monitoring is required for assessing response and for side effects that may emerge. Further assessments may be required during this period especially if psychosocial treatments are being planned. Information should be obtained from the patients, family members, and other available sources. Frequency of contact will depend on several factors such as clinical state, the distance of the hospital from the patient's home, social support available for the patient, the type of treatment being administered etc.[20]

Case Presentation

A 22 years old girl was brought to the Gandhi hospital Musheerabad by her parents with the presenting complaints that self-talk and self-laugh. They reported that their daughter suspects that somebody has casted a black magic on her. She even skips her meal with a suspiousness that someone has poisoned herfood. She was experiencing all the above complaints from at least past one year.On inquiring her no significant family history was found related to this disorder.

Past History

3 years ago she was brought to the Gandhi hospital Musheerabad when antipsychotics were prescribed to her. But she stuck to the regimen just for one year and then showed noncompliance towards her medication.

General Examination

Weight; 58 kg
B.P:110/70
Temperature: 98 F

Pulse Rate: 72 beat per minute

Special Investigation

- Mental state examination (appearance, mood, behavior): neglected self-care, looking around, rapport and eye contact was not established. Non cooperative behavior throughout interview.
- Positive and Negative symptoms scale (PANSS): delusions, hallucination, poverty of speech, disorganized behavior.

Treatment

- Aripiprazole 15mg B.D
- Clonazepam 0.5mg H.S
- Psychotherapy session after every two weeks

Interventions

- As the patient's history clearly shows that she has been non-compliant in the past so an alternative intramuscular therapy can be recommended such as Fluphenazine (25mg/ml) IM after every two weeks.
- Secondly the patient was prescribed a 10mg tablet which she was advised to take as one and half tablet at a time. Instead of it an alternative brand of Aripiprazole 15mg can be prescribed for resolving the compliance issue.

Outcomes and Follow-up

- The outcomes of the treatment achieving life milestones, feeling safe, improved physical activity, employment, a positive sense of self and psychosocial outcomes. Quality of life gets better and safety from harmful behaviors is achieved [21].
- The patient was advised to visit the psychiatrist for psychotherapy sessions**.**

Discussion

A medication regimen must be follow to get its beneficial effects. This particular concept is of great importance for patients who have schizophrenia as they often show poor adherence and for them leaving medication has serious results. There have been several studies related to the non-adherence to antipsychotic medications. The majority of these studies have used subjective measures of adherence that rely on patient, family member, or clinician reports, all of which have been shown repeatedly to overestimate adherence just few studies have used an objective method like electronic monitoring to assess adherence to oral antipsychotic medication in outpatients who have schizophrenia [22]. Remaining non-compliant to these medications leads to the worsening of clinical condition, relapse of psychotic episodes and hospitalization [23].

Patients who have a history of non-compliance or undergone frequent hospitalization need a long acting intramuscular antipsychotic medication. Currently three options exist: haloperidol decaonate, fluphenazine decaonate and long acting risperidone . Among these haloperidol and fluphenazine are available in Hyderabad in the intramuscular preparations .Therefore a depot preparation of Fluphenazine (25mg/ml) IM after every two weeks can be a suitable therapy for this patient.

It is observed that patients on depot antipsychotics they have a low frequency of hospital admission. Interventions to improve adherence to antipsychotic medication in schizophrenia is emphasized [24]

Learning Points

- Schizophrenic patients often show non-compliance to their medication so asimplified dosage regimen must be designed for them
- In addition to the psychotherapy sessions of the patient, also educate thepatient's family to make sure that he/she taking the medication.
- If a patient is non-compliant, a depot intramuscular antipsychotic can beadministered to prevent the relapse of psychotic episodes.

References

1. Ayuk-Egbe PB, Hogue VW (2001) Comprehensive Pharmacy Review.American Journal of Pharmaceutical Education 65(3): p 303.
2. https://www.nimh.nih.gov/health/topics/schizophrenia.
3. https://www.mentalhealthamerica.net/conditions/schizophrenia.
4. Patel, et al. "Schizophrenia: overview and treatment options." Pharmacy and Therapeutics 39.9 (2014): 638.[Google Scholar]
5. Carter, Marcia, Jean. "Diagnostic and statistical manual of mental disorders." Therapeutic recreation journal 48.3 (2014): 275.[Google Scholar]
6. Jongsma HE, Turner C, Kirkbride JB, Jones PB. International incidenceof psychotic disorders, 2002-17: a systematic review and meta-analysis. Lancet Public Health. 2019 May;4(5):e229-e244. [PMC free article] [PubMed]

7. Giordano GM, Bucci P, Mucci A, Pezzella P, Galderisi S. Gender Differences in Clinical and Psychosocial Features Among Persons With Schizophrenia: A Mini Review. Front Psychiatry. 2021;12:789179. [PMCfree article] [PubMed]
8. Velligan DI, Rao S. The Epidemiology and Global Burden of Schizophrenia. J Clin Psychiatry. 2023 Jan 18;84(1) [PubMed]
9. Rizvi A, Reyazuddin M, Shaan F. Low-Dose Clozapine in Early-Onset Resistant Schizophrenia: Case Report and 2-Year Follow-up. J Am Acad Child Adolesc Psychiatry. 2023 Aug;62(8):839-841. [PubMed]
10. Case, Jane, K. "Ferri's Differential Diagnosis: A Practical Guide to the Differential Diagnosis of Symptoms, Signs, and Clinical Disorders." Mayo Clinic Proceedings. Vol. 81. No. 10. Elsevier, 2006.[Google Scholar][Cross Ref]
11. Paris, Joel. "Differential diagnosis of borderline personality disorder."Psychiatric Clinics 41.4 (2018): 575-582.[Google Scholar] [Cross Ref] 12.Jablensky, Assen. "The diagnostic concept of schizophrenia: its history,
12. evolution, and future prospects." Dialogues in clinical neuroscience (2022).[Google Scholar] [Cross Ref]
13. Morgan, V. A., et al. "Psychosis prevalence and physical, metabolic and cognitive co-morbidity: data from the second Australian national survey of psychosis." Psychological medicine 44.10 (2014): 2163-2176
14. [Google Scholar] [Cross Ref]
15. American Psychiatric Association . Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington, DC: American Psychiatric Association; 2013. Schizophrenia and other psychotic disorders; pp. 89–
16. 122. [Google Scholar]
17. Dickerson FB, Lehman AF. Evidence-based psychotherapy for schizophrenia: 2011 update. J Nerv Ment Dis. 2011;199(8):520–526. [PubMed] [Google Scholar]
18. Lindenmayer JP, Liu-Seifert H, Kulkarni PM, et al. Medication non- adherence and treatment outcomes in patients with schizophrenia or schizoaffective disorder with suboptimal prior response. J Clin Psychiatry. 2009;70(7):990–996. [PubMed] [Google Scholar]
19. Morken G, Widen JH, Grawe RW. Non-adherence to antipsychotic medication, relapse and rehospitalisation in recent-onset schizophrenia. BMC Psychiatry. 2008;8:32. [PMC free article] [PubMed] [Google Scholar]
20. Rummel-Kluge C, Kissling W. Psychoeducation for patients with schizophrenia and their families. Exp Rev Neurother. 2008;8(7):1067– 1077. [PubMed] [Google Scholar]
21. https://www.google;mayoclinic.org/diseasecondtion/schizophrenia. 20.Grover, Sandeep, Chakrabarti, et.al, clinical practice guidelines for
22. management of schizophrenia , Indian journal of psychiatry; Jan(2017);59(suppl 1); p S19-S33,Doi : 10.4103/0019-5545.196972.
23. Lloyd J, Lloyd H, Fitzpatrick R, Peters M (2017) Treatment outcomes in schizophrenia: qualitative study of the views of family carers. BMC psychiatry 17(1): 266.
24. Byerly MJ, Nakonezny PA, Lescouflair E (2007) Antipsychotic medication adherence in schizophrenia. Psychiatric Clinics of North America 30(3): 437 452.
25. Eaddy M, Grogg A, Locklear J (2005) Assessment of compliance with antipsychotic treatment and resource utilization in a medicaid population. Clinical therapeutics 27(2): 263-272.

26. Morken G, Widen JH, Grawe RW (2008) Nonadherence to antipsychotic medication, relapse and rehospitalisation in recent-onset schizophrenia. BMC psychiatry 8(1): 32