



A Review on Schizophrenia: Outline and Treatment

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ABSTRACT

Schizophrenia is a debilitating, genetic brain condition caused by anomalies that appear early in infancy and interrupt normal brain development. It has a lifetime risk of 1% and affects people of all ages, with around 10% dying by suicide. COVID-19 may raise the risk of mortality and morbidity in people with schizophrenia. Although antipsychotic medications of the first, second, and third generations are the most commonly prescribed treatments for schizophrenia, they are linked to major side effects such as tardive dyskinesia, oxidative stress, and EPS. Ayurvedic herbal medications and some dietary supplements score well in this category since they can be taken for a long time without causing major adverse effects and have antioxidant properties. Low potency first generation antipsychotics, sedating antihistamines, and benzodiazepines, as well as inhalable antipsychotics, oral and short acting injectable olanzapine, and ziprasidone, as well as low potency first generation antipsychotics, sedating antihistamines, and benzodiazepines, should be avoided or closely monitored for patients with COVID-19. Mentally ill patients with COVID -19 should be segregated if at all possible, and employees should be adequately protected.

Keywords: Schizophrenia, covid-19, antipsychotic, herbal treatment.

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INTRODUCTION

Mental contamination is any disorder or situation affecting the mind that impacts the manner someone thinks, feels, behaves and/or pertains to others and to his or her surroundings. Although the signs of intellectual contamination can vary from slight to excessive and are one-of-a-kind relying at the form of intellectual contamination, someone with an untreated intellectual contamination regularly is not able to address life's day by day exercises and demands.

Schizophrenia is a devastating infection with an early maturity onset and chronic course. The infection influences all elements of cognition, emotion, perception, and conduct in methods that effect the man or woman with the infection, his or her family, and society. Schizophrenia is a worldwide disorder, affecting 1 percentage of the populace worldwide.¹ In the United States, an anticipated three million guys and women (in same numbers) have schizophrenia ², and unfortunately, best 1/2 of acquire treatment ³. Despite its particularly small numbers, the financial effect is significant ¹. History has supplied many reasons for the genesis of

schizophrenia; contemporary studies indicates that it's miles a multifactorial disorder primarily based totally in genetics, susceptibilities, and environment. Sometimes humans with schizophrenia appear flawlessly best till they communicate approximately what they're actually thinking.

In addition, relapse may also arise due to tremendous signs, which include suspiciousness, delusions, and hallucinations. The inherent heterogeneity of schizophrenia has ended in a loss of consensus concerning the disorder's diagnostic criteria, etiology, and pathophysiology.⁴⁻⁶ The modern antipsychotic regiment is powerful in treating tremendous signs of the disease, however remedies to mitigate bad signs and cognitive regions are nonetheless limited.⁷⁻⁸

Abnormalities in neurotransmission have furnished the idea for theories at the pathophysiology of schizophrenia. Most of those theories middle on both an extra or a deficiency of neurotransmitters, together with dopamine, serotonin, and glutamate. Other theories implicate aspartate, glycine, and gamma-aminobutyric acid (GABA) as a part of the neurochemical imbalance of schizophrenia.⁴ Four dopaminergic pathways have been implicated as figure-1.⁹⁻¹⁰



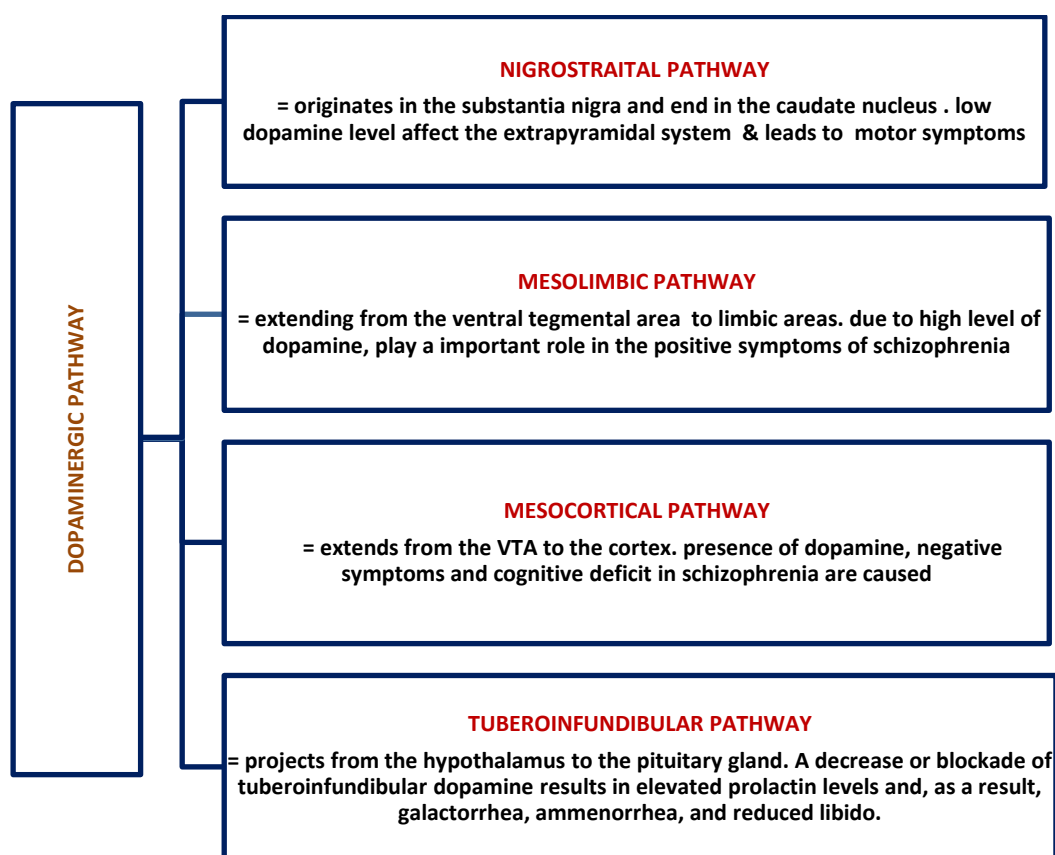


Figure 1: Dopaminergic pathway

The serotonin speculation for the improvement of schizophrenia emerged due to the invention that lysergic acid diethylamide (LSD) more suitable the consequences of serotonin withinside the brain.¹ Subsequent studies brought about the improvement of drug compounds that blocked each dopamine and serotonin receptors, in evaluation to older medications, which affected most effective dopamine receptors. The more recent compounds have been observed to be powerful in assuaging each the fantastic and bad signs of schizophrenia.

Another concept for the signs of schizophrenia entails the pastime of glutamate, the essential excitatory neurotransmitter withinside the brain. This concept arose in reaction to the locating that phenylcyclidine and ketamine, non-aggressive NMDA/ glutamate antagonists, result in schizophrenia-like signs.¹¹

Many human beings tormented by schizophrenia smoke. This may be attributed to the ailment itself or its remedy.¹² There are severa reviews approximately disturbed mind cholinergic transmission in sufferers with schizophrenia.¹³ Patients speak that smoking enables them to alleviate bad signs and symptoms^{14,15} which may be connected to their deficiencies concerning nicotinic receptors. The excessive fee of people who smoke amongst sufferers with schizophrenia inspired the studies at the position of nicotinic receptors on this disorder. Studying of $\alpha 7$ receptors with precise venomous pollution confirmed that $\alpha 7$ receptors are placed in mind areas worried in cognition (e.g., the cortex and hippocampus). Deterioration of cognitive capabilities along with running reminiscence and

cognitive flexibility, in addition to attention, assume psychotic signs and symptoms and are a prognosticator of purposeful outcome.¹⁶ The position of irritation and oxidative strain in schizophrenia is a focal point of many studies.¹⁷ It became suggested that extreme infections and immune problems at some point of the life-time are a further danger component for the improvement of schizophrenia.^{18,19} As a result of irritation position in schizophrenia, antibiotics and anti-inflammatory retailers were examined to deal with this ailment however with a instead restricted success.²⁰ However, a tribulation of one thousand mg in line with day of aspirin as upload on remedy confirmed enhancements with inside the Positive and Negative Syndrome Scale (PANSS) general and fantastic signs and symptoms.²¹

The specific reason of schizophrenia maintains to elude investigators. It is extensively accepted, however, that the numerous phenotypes of the infection get up from more than one elements, such as genetic susceptibility and environmental influences.^{5,22} One cause of the improvement of schizophrenia is that the disease starts off evolved in utero. Obstetric complications, such as bleeding at some point of pregnancy, gestational diabetes, emergency cesarean section, asphyxia, and occasional beginning weight, had been related to schizophrenia later in life. Fetal disturbances at some point of the second one trimester—a key degree in fetal neurodevelopment—had been of specific hobby to researchers. Infections and extra strain stages at some point of this era had been connected to a doubling of the threat of offspring growing

schizophrenia. Scientific proof helps the concept that genetic elements play a vital function within the causation of schizophrenia; research has proven that the threat of infection is about 10% for a first-degree relative and 3% for a second-degree relative.²³ Environmental and social elements may additionally play a function within the improvement of schizophrenia, specifically in people who are at risk of the disease. Environmental stressors connected to schizophrenia consist of early life trauma, minority ethnicity, house in an urban area, and social isolation. In addition, social stressors, which includes discrimination or monetary adversity, can also additionally predispose people towards delusional or paranoid thinking.⁴

The Diagnostic and Statistical Manual IV-TR establishes the scientific standards for schizophrenia, with the most records regarding Criterion A.²⁴ Two or greater symptoms and signs from Criterion A ought to be present for a widespread part of time in the course of a 1-month period (or much less if correctly treated): delusions, hallucinations, disorganized speech, e.g., common derailment or incoherence, grossly disorganized or catatonic conduct, or poor signs, i.e., affective flattening, alogia, or avolition. Only one Criterion A symptom is needed if delusions are weird or hallucinations encompass a single-voice jogging statement at the person's conduct or thought, or greater voices speaking with every other. Though now no longer always for diagnostic purposes, hallucinations and delusions are maximum related to schizophrenia. Hallucinations are disturbances in sensory perceptions now no longer primarily based totally in reality. They arise in any sensory modality, however maximum are auditory. Visual hallucinations also can be common. When tactile, gustatory, or olfactory hallucinations are observed, clinicians must recollect investigating a natural etiology. Delusions are fixed, fake beliefs.

The poor symptoms and symptoms or disorganized speech and conduct are obvious to the analyzing clinician, while delusions and hallucinations are inner phenomena that may be determined most effective through asking. Occasionally, sufferers reply to inner stimuli through searching across the room while nobody is present, sporting on a communique alone, or behaving or interacting as though a person or some thing else is present. Clinicians who look at those behaviors verify their scientific suspicion through follow-up inquiry. Medical college students and citizens are taught that the important thing to organising rapport is empathizing with sufferers. But how does someone construct rapport with a person whose speech is incomprehensible, who avoids eye contact, and who will now no longer or can't move? It's smooth to peer how those sufferers are quick categorised as "difficult" or "crazy," euphemisms for unimportant. Yet they're a number of our maximum ill sufferers.

Historical and collateral facts are crucial to the diagnosis. It is vital to affirm that the signs and symptoms constitute schizophrenia, given that all psychosis isn't schizophrenia.

People with numerous different main intellectual illnesses, such as main melancholy and bipolar disorder, can show off signs and symptoms much like the ones of schizophrenia. In those individuals, however, the temper signs and symptoms of melancholy or mania are extra prominent. Several training of materials such as hallucinogens, amphetamines, and stimulants can purpose intoxication syndromes that mimic schizophrenia, however the length of signs and symptoms need to be restricted through the pharmacology of the drug.

From the early ranges of the COVID-19 pandemic, worries were raised approximately its impact on intellectual fitness and on sufferers with intellectual contamination. Yet numerous months later, we nonetheless realize little approximately the intellectual fitness outcomes of COVID-19 (its psychiatric sequelae) and the susceptibility of sufferers with intellectual contamination to COVID-19 (its psychiatric antecedents).²⁵⁻²⁸

Several surveys have advised that sufferers with COVID-19 have signs of anxiety (consisting of posttraumatic strain disorder, depression, and insomnia). Cross-sectionally, 22.5% of sufferers with COVID-19 had a concurrent neuropsychiatric analysis.²⁹⁻³⁴ The scientific effect of COVID-19 on humans with intense intellectual problems (SMD) including schizophrenia has been quite overlooked. Predictors of disorder severity in COVID-19 including CVD, DM, continual obstructive pulmonary disorder (COPD) and continual immune dysregulation are greater usual in humans with schizophrenia, than the overall population. CORONERVE, a UK-huge surveillance programme, recognized 23 sufferers with a psychiatric analysis following contamination with intense acute breathing syndrome coronavirus 2 (SARS-CoV-2).³⁵ A meta-evaluation of pooled facts from research that predicted the occurrence of psychiatric problems after the intense acute breathing syndrome (SARS) and Middle East breathing syndrome outbreaks advised that coronavirus infections can result in delirium, anxiety, depression, manic signs, terrible memory, and insomnia.

More than 70% of all schizophrenia sufferers additionally have one or greater scientific conditions, consisting of diabetes type II, pulmonary persistent sickness, and hypertension/coronary coronary heart sickness. Smoking estimates amongst schizophrenia sufferers range from 50 to 90%, in comparison to 20-30% within the fashionable populace, and contain better smoking intensity, some other capacity chance element for respiration complications, even though it isn't always but clean whether or not COVID-19 consequences are worse amongst smokers. Spirometric evaluation shows that schizophrenia sufferers have impaired lung function, and they may be greater frequently recognized with restrictive and obstructive pulmonary diseases. In addition, whilst hospitalized for pulmonary conditions, schizophrenia sufferers have better quotes of in depth care unit admissions, acute respiration failure, mechanical ventilation, and in-health facility dying than different sufferers. They even have a better chance of acute



organ disorder than the overall populace whilst admitted to the in depth care unit, irrespective of cause. Overall, maximum schizophrenia sufferers might healthy at the least one recognised chance institution for COVID-19 and, if admitted to a health facility, need to be taken into consideration at expanded chance of worse scientific consequences [figure2]. Nonetheless, we trust that publicity to the sort of annoying existence event, modifications of routine, and interpersonal tension because of extended quarantine or maybe the worry of contracting the sickness may also act as essential triggers.³⁶

Management for Schizophrenia

The desire in the treatment of schizophrenia involves focusing on the signs, stopping recurrence, and improving adaptive function so that affected individuals can return to their communities. Drugs should be used to optimize long-

term results. — Also known as a nerve relaxant, major sedative, or antipsychotic — a drug commonly used to treat schizophrenia. Pharmacotherapy is the mainstay of schizophrenia management, but the remaining symptoms may persist. For this reason, non-pharmacological treatments such as psychotherapy are also important.³⁷

Patients with schizophrenia who forestall taking their remedy are at multiplied threat of relapse, that may result in hospitalization. Therefore, it's far essential to preserve sufferers knowledgeable approximately their infection and approximately the dangers and effectiveness of treatment. Some psychotherapies can assist train sufferers approximately the significance of taking their medications. These projects encompass cognitive behavioral therapy (CBT), non-public therapy, and compliance therapy. [Figure 3]

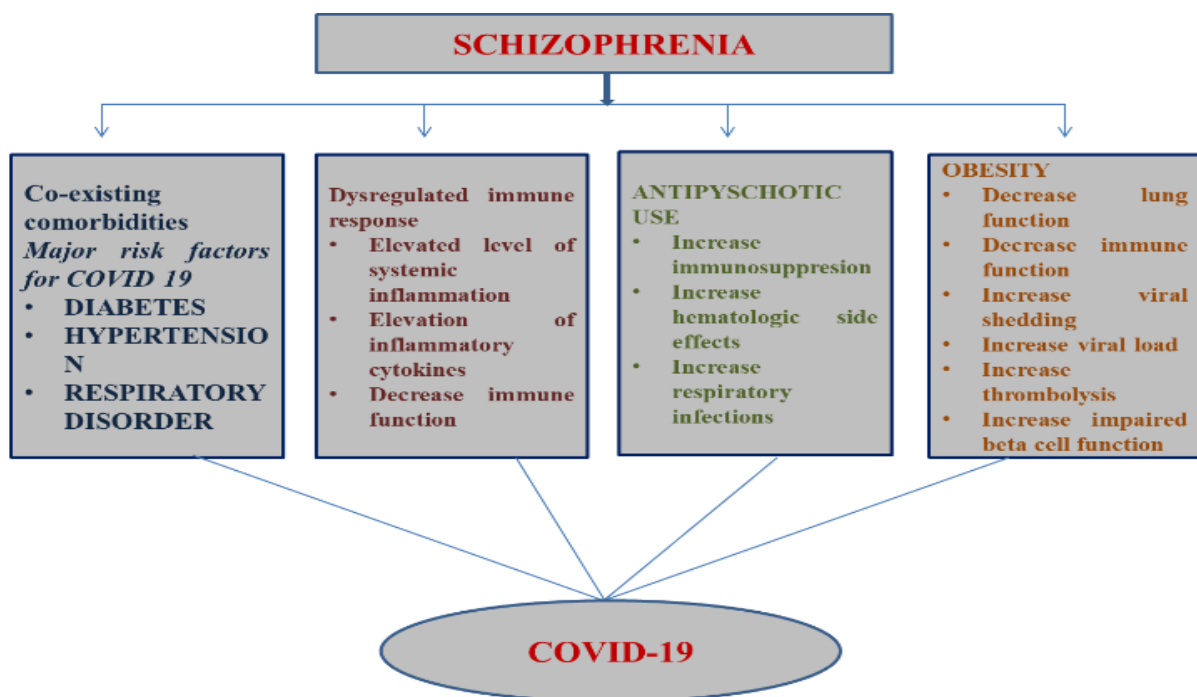


Figure 2: Link between schizophrenia and COVID 19

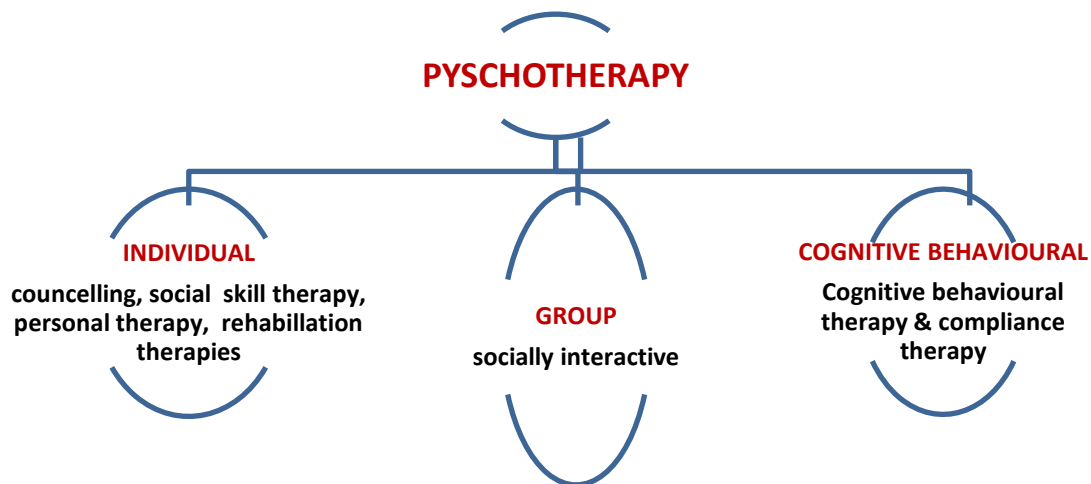


Figure 3: Non-Pharmacological treatment

Antipsychotic medicines of the first generation primarily work by inhibiting dopamine D2 receptors in the brain. They have no selectivity for any of the dopamine pathways in the central nervous system, therefore they can cause a variety of adverse effects, including extrapyramidal symptoms and increased prolactin. Because the risk of developing TD is about 3 to 5% per year of FGA exposure³⁸ and treatment is difficult once it has begun, it must be factored into the risk-benefit analysis at the outset of treatment.

After nearly forty years since the introduction of chlorpromazine, the first antipsychotic, the FDA approved the clinical use of clozapine in cases of treatment-resistant schizophrenia, ushering in a new era in schizophrenia treatment. Clozapine was the first antipsychotic medicine

to have a stronger ability to diminish negative symptoms while causing fewer extrapyramidal effects than previous antipsychotics.^{39,40} In terms of treating treatment-resistant schizophrenia, clozapine is the most effective antipsychotic. In treatment-resistant patients, this medication is about 30% successful in managing schizophrenia episodes, compared to 4% efficacy with the combination of chlorpromazine and benztropine.⁴¹ Clozapine has also been shown to raise sodium levels in the blood in patients suffering from polydipsia and hyponatremia.⁴²

The newest group of antipsychotic drugs, described as the third generation, consists of aripiprazole, brexpiprazole and cariprazine.

The antipsychotic drugs treatment describes as: Table 1

Table 1: Pharmacological treatment for Schizophrenia

S.NO	Treatment	Description	Therapeutic Uses	Adverse effect/ Side effects	Ref
1.	First Generation Anti-psychotic ❖ Haloperidole ❖ Chlorpromazine ❖ perphenazine	MOA- Block dopamine receptor	<ul style="list-style-type: none"> schizophrenia bipolar disorder anxiety obsessive compulsive disorder dementia autism spectrum disorder 	<ul style="list-style-type: none"> high risk of extrapyramidal syndrome like akathisia, dyskinesia, parkinson like movement tardive dyskinesia ✓ resolved by ↓ dose or change in antipsychotic or anticholinergic drugs 	38
2.	Second Generation Anti-psychotic Drugs(Atypical) ❖ Clozapine ❖ Risperidone ❖ Olanzapine ❖ Quentapine ❖ ziprasidone	MOA- Exhibit higher ability to block 5HT _{2A} receptor than D ₂ receptor	<ul style="list-style-type: none"> schizophrenia bipolar disorder anxiety obsessive compulsive disorder dementia autism spectrum disorder 	<ul style="list-style-type: none"> Lower risk of EPS & TD but metabolic syndrome like hypertension, dyslipidemia ✓ Require supportive care, discontinuation of drugs 	40
3.	Third Generation Antipsychotic Drugs ❖ Aripiprazole ❖ Brexpiprazole ❖ cariprazine	Aripiprazole- ▪ Inhibition of cAMP accumulation through D ₂ receptor (G _α -signaling) →in the presence of high extracellular dopamine conc. It compete with dopamine →result in partial antagonism (clinical benefits)	Aripiprazole- <ul style="list-style-type: none"> Schizophrenia Bipolar disorder Depression OCD Autism 	Aripiprazole- Akathisia, Weight gain, Agitation, Insomnia, Anxiety, Headache, Constipation, Nausea Brexpiprazole- akathisia, weight gain, infections of upper respiratory tract, somnolence, headache and nasopharyngitis	43



		<ul style="list-style-type: none"> When extracellular dopamine conc. is on low level it bind to additional receptor (serotonin 5HT_{1A} & 5HT_{2A}) → activate them partially → “dopamine stabilizer” <p>Brexpiprazole-</p> <ul style="list-style-type: none"> partial agonist to dopamine D₂, D₃ and serotonin 5-HT_{1A} receptors, and exhibits also antagonist properties to 5-HT_{2A}, 5-HT_{2B} and 5-HT₇ receptors <p>Cariprazine-</p> <ul style="list-style-type: none"> dopamine D₂, D₃ and serotonin 5HT_{1A} receptors partial agonist 	<p><i>Effectiveness is higher than chlorpromazine or ziprasidone</i></p> <p>Brexpiprazole-</p> <ul style="list-style-type: none"> Similar to aripiprazole <p><i>antipsychotic efficacy is comparable but brexpiprazole causes less akathisia, EPS and activation</i></p> <p>Cariprazine-</p> <ul style="list-style-type: none"> Similar to aripiprazole but can be used for the treatment of schizophrenia patients with dominant negative symptoms 	<p>Cariprazine- sedation, akathisia, weight gain, nausea, constipation, anxiety, and dizziness</p>	
4.	Others	<ul style="list-style-type: none"> GABA agonist attenuates schizophrenia symptoms α 7 Nicotinic receptors agonists can be an attractive drug target but require further investigation certain genetic changes of the CNR1 gene may be effective 	<ul style="list-style-type: none"> Schizophrenia 	<ul style="list-style-type: none"> ○ akathisia 	43,44

Because of the unpleasant or severe side effects of modern drugs, many patients stop taking them. This is an area where Ayurvedic herbal medications and some nutritional supplements score well, as they can be used for a long time without causing major negative effects. Ayurvedic medicines and dietary supplements can be used as adjuvant therapy with modern medicines to improve the therapeutic effect while reducing side effects.⁴⁵ Antipsychotic medicines are the mainstay of schizophrenia treatment, yet

they are linked to significant side effects include tardive dyskinesia and tremor. Furthermore, approximately 20% of persons do not react to treatment satisfactorily.⁴⁶ Some previous studies have demonstrated that Chinese herbal therapy is effective for psychosis, and that combining treatments (drugs and herbs) can improve antipsychotic efficacy or shorten the recovery period while reducing side effects. Table : 1a^{47,48}

Table 1a: Herbal treatment for schizophrenia

S.NO.	Herbal treatment	Description	Application	Adverse effect	Ref
1	<i>Piper methysticum</i> (Kava)	<ul style="list-style-type: none"> • Kava is an extract. • Contain kavapyrones act as muscle relaxants and anticonvulsants, reduce limbic system excitability • Kava act by increasing GABAA receptor densities and suppressing the release of glutamate, this mechanism might explain its usefulness in schizophrenia 	<ul style="list-style-type: none"> ✓ schizophrenia ✓ muscle relaxants ✓ anticonvulsants 	<ul style="list-style-type: none"> ○ slight morning tiredness ○ allergic reactions ○ yellowing or scaling of the skin ○ gastrointestinal complaint ○ pupil dilation ○ blurred vision 	45
2	<i>Ginkgo biloba</i>	<ul style="list-style-type: none"> • Ginkgo extracts contain a large number of substances ginkgo flavonoids, ginkgolides that have been found to have a variety of pharmacological effects due to antioxidant nature 	<ul style="list-style-type: none"> ✓ improve vascular perfusion ✓ inhibit platelet activating factor 	<ul style="list-style-type: none"> ○ treat memory problems ○ headache ○ gastrointestinal upset ○ allergic skin reactions 	49,50
3	<i>Valeriana officinalis</i>	<ul style="list-style-type: none"> • In laboratory animals, valerenic acids have sedative and anticonvulsant effects, and valerian extracts have been demonstrated to have a variety of effects on GABA-ergic neurons, including increased release of GABA, decreased GABA reuptake, and decreased GABA degradation 	<ul style="list-style-type: none"> ✓ Sedative ✓ Anti-convulsant 	<ul style="list-style-type: none"> ○ gastrointestinal upset ○ contact allergies ○ headache ○ restle ○ sleep ○ mydriasis 	51-53
4.	<i>Rhodiola Rosea</i>	<ul style="list-style-type: none"> • contains a variety of compounds that may contribute to its effects³² including the class of rosavins which include rosavin, rosarin, and rosin. • Having antioxidant properties 	<ul style="list-style-type: none"> ✓ Depression ✓ Anxiety ✓ Dementia ✓ this herbal supplements along with antipsychotics medication can reduce the risk of side effects and improve therapeutic value of drug 	<ul style="list-style-type: none"> ○ headache ○ stomach upset ○ drowsiness 	54
5.	<i>Zizyphus jujuba</i>	<ul style="list-style-type: none"> • Contain jujubosides • have inhibitory effects on glutamate-mediated excitatory signal pathway in the hippocampus and probably act through their anticalmodulin action. 	<ul style="list-style-type: none"> ✓ used to reduce glutamate mediated excitotoxicity in schizophrenia ✓ sedative ✓ immunostimulant ✓ Wound healing properties ✓ anxiety and insomnia 	<ul style="list-style-type: none"> ○ well tolerated 	55-57

6.	<i>Crocus sativus L</i>	<ul style="list-style-type: none"> • Contain carotenoids including zeaxanthin, lycopene, and various α- and βcarotenes • Antioxidant property 	<ul style="list-style-type: none"> ✓ antidepressant,45 ✓ anti-inflammatory ✓ anti-tumor effects ✓ radical-scavenging ✓ learning and memory improving properties 	<ul style="list-style-type: none"> ○ drowsiness ○ stomach upset ○ nausea 	58-60
7.	<i>Panax ginseng, P.japonica, P. notoginseng, and P. quinquefolium</i>	<ul style="list-style-type: none"> • They are grouped as Ginsenosides, panaxosides, chikusetsusaponin. • Ginsenosides prevented scopolamine-induced memory deficits in laboratory animals by increasing central cholinergic activity. • They may also protect neurons from ischemic damage and facilitate learning and memory by enhancing nerve growth • Ginsenosides appear to modulate neurotransmission through - aminobutyric acid (GABA), and by inhibiting neurotransmitter reuptake 	<ul style="list-style-type: none"> ✓ Schizophrenia ✓ immunomodulatory drug 	<ul style="list-style-type: none"> ○ sleep disturbed 	45
8.	<i>Withania somnifera</i>	<ul style="list-style-type: none"> • Withianine is main constituents • ashwagandha led to more acetylcholine receptor activity • similar to GABA 	<ul style="list-style-type: none"> ✓ anti-stress ✓ cognition facilitating ✓ anti-inflammatory and ✓ anti-aging effect 	<ul style="list-style-type: none"> ○ stomach upset ○ nausea 	45
DIETARY SUPPLEMENTS					
1.	Glycine	<ul style="list-style-type: none"> • act as an agonist for NMDA • The clinical trials have shown that Glycine did not help people who are taking Clozapine, but it did help (in reducing negative symptoms) in people who were taking risperidone, and olanzapine 	<ul style="list-style-type: none"> ✓ treatment for the negative symptoms of schizophrenia ✓ anti-inflammatory 	<ul style="list-style-type: none"> ○ upset stomach and nausea 	45,61
2.	Antioxidant vitamins	<ul style="list-style-type: none"> • There are several lines of evidence to support the contribution of oxygen free radicals in schizophrenia, including increased lipid peroxidation, fatty acids, and alterations in blood levels of antioxidant enzymes • A fall of the activities of the secondary antioxidant enzymes (glutathione-S-transferase, glucose-6-phosphate dehydrogenase, caeruloplasmin, Ferroxidase) and as well as an increase in the peroxidation of the lipid 	<ul style="list-style-type: none"> ✓ Oral supplementation of vitamin C with atypical antipsychotic reverses ascorbic acid levels, reduces oxidative stress, and improves BPRS (brief psychiatric rating scale score), hence both the drugs in combination can be used in the treatment of schizophrenia ✓ vitamin E (mixed-tocopherols), in the treatment and 	<ul style="list-style-type: none"> ○ constipation ○ upset stomach 	45,62 ,63

		was noted among schizophrenic patients	prevention of tardive dyskinesia		
		<ul style="list-style-type: none"> • Alpha Lipoic Acid, Vitamin E, Vitamin C may have some beneficial impact 			
3.	EPA omega-3 fish oils	<ul style="list-style-type: none"> • people that have schizophrenia may benefit by a reduction in symptoms when they take fish oil capsules that are high in the EPA 	✓ schizophrenia	<ul style="list-style-type: none"> ○ fishy breath ○ stomach upset 	45
4.	N-methylglycine (also called sarcosine)	<ul style="list-style-type: none"> • schizophrenia pathology suggests that NMDA-receptor dysfunction (a special kind of glutamate receptor in the brain) may contribute to disordered synapses and brain atrophy, which ultimately result in the visible symptoms • Sarcosine) may turn out to be a very beneficial supplemental treatment (when added to standard antipsychotic medications) for some people with schizophrenia • acts by increasing the synaptic availability of glycine by inhibiting its reuptake through a compound called the glycine transporter – 1 or GlyT-1. 	✓ N-methylglycine (sarcosine) treatment had significant (on the order of 10 to 15%) improvements in their positive, negative, cognitive, and general psychiatric symptoms	<ul style="list-style-type: none"> ○ Irritability ○ Well tolerated 	45,64

People with schizophrenia are a particularly vulnerable group, with a lower immunological response than the overall population. SARS-CoV-2 infection is said to be moderate when it first appears.⁶⁵ Dexamethasone has not yet been tried in early covid-19, and its immune-suppressive properties demand caution when recommended to persons with schizophrenia, as it may result in poor treatment outcomes accidentally.^{66,67} In a heterogeneous population with COVID-19, data from pilot RCTs and observational studies has revealed mortality advantages for antiplatelet and anticoagulant medications like aspirin and heparin, non-steroidal anti-mitotic drugs like colchicine, and oral hypoglycemic agents like metformin.⁶⁸⁻⁷⁰ All of these drugs have been clinically shown to be safe and are now being used to treat various diseases. To determine the success of such treatments for patients with schizophrenia, however, robust, well-powered clinical trials would be required. Finally, potential drug-drug interactions (DDI) with COVID-19 medicines and antipsychotics must be considered. Such DDIs can lead to decreased medication tolerance, decreased efficacy, or decreased safety. Risk of QT-prolongation and Torsade de Pointes, as well as cytochromes P450, were identified as important interactions between COVID-19 medicines and antipsychotics in a recent comprehensive study involving three drug interaction databases. This comprehensive

review found a high risk of DDI with lopinavir/ritonavir plus quetiapine and ritonavir/indinavir plus risperidone, a haematological risk with clozapine and baricitinib, caution with favipiravir plus chlorpromazine and quetiapine, and no risk of DDI with remdesivir, baricitinib.⁷¹ Self-isolation has been found in studies to cause significant psychological distress in patients with schizophrenia.^{72,73} Furthermore, such self-isolation may prevent the patient from receiving their usual antipsychotic treatment, particularly when treatment is administered by a healthcare provider, as is the case with long-acting injectable antipsychotics, or when relatively intensive monitoring is required, as is the case with clozapine. Antipsychotic drug delays or interruptions may raise the chance of psychosis relapse.⁷⁴

CONCLUSION

Schizophrenia is a complicated multi-factor condition, and it does not appear likely that all symptoms of the disease can be treated with a single-target therapy, based on current knowledge. Treatment for schizophrenia, like many other chronic illnesses, necessitates a collaborative effort between doctors, family, and the community. We can assist these people cope with their condition and reach their full potential by providing vigorous and progressive treatment and compassion. As a result, more research in the field of herbal medicine is needed to improve schizophrenia



treatments. So that patients can receive health-promoting treatment options that include herbs, conventional drugs, and lifestyle adjustments. To ensure the safety of both people with schizophrenia and the general public, recommendations stress quick implementation of steps to reduce the risk of COVID-19 transmission while also maintaining continuity of clinical care and research.

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