The treatment of schizophrenia

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Abstract. Schizophrenia is a kind of disease worldwide nowadays, and about twenty million people were found that have schizophrenia. For now, the treatment for treating schizophrenia methods includes using the psychological method, medical treatment, and Medicaid enterprise certification toolkit (MECT). The psychological method in treating schizophrenia has special advantages when the patients are not diagnosed. Pet therapy is a new way to treat patients without medicines or use in an adjuvant way. This therapy will help people get love or get warmness or become better. Research has shown that first-generation anti-schizophrenia medicine (FGAs) and second-generation anti-schizophrenia medicines (SGAs) have different effects. For example, CPZ in FGAs can help patients think normally and reduce the possibility of nervousness, but CPZ also has certain side effects, such as causing patients to have skin pigmentation. SGAs are very effective in treating schizophrenia and can also reduce the risk of side effects. SGAs have been replaced by FGAs in large populations and are also the first choice for researchers to use. Clozapine is a classic SGA drug. Studies have shown that it is safe for patients taking clozapine long-term. However, additionally, clozapine has been shown to cause a number of blood problems, as well as cardiac arrhythmias, such as QT prolongation. For now, the psychological method should be the first choice for the patient who has not been diagnosed. Some new treatment methods are still in progress, like MECT and new medicines for more target acceptors. This paper review briefly the treatment of schizophrenia.

Keywords: schizophrenia treatment, First generation anti-schizophrenia-drugs (FGAs), Second-generation anti-schizophrenia (SGAs), Medicaid enterprise certification toolkit (MECT).

1. Introduction

Nowadays, about twenty million people were found that have schizophrenia. However, there are still fewer methods to treat this disease. Only one in seven people can get well after treatment. Furthermore, today in many places, there are still many people who cannot get the most-timing target treatments. The people who have chances to treat, may not get the straightforward method of treatment. Therefore, the treatment of schizophrenia becomes an important problem in the world. Different patients have diverse reasons for getting such diseases. The reason why people get schizophrenia is still a puzzle and confused researchers and patients, such as gene mutation, environmental factors, and trauma which can lead to this disease. The normal treatment is still the medicines like anti-schizophrenia drugs. The first-generation anti-schizophrenia-drugs (FGAs) include chlorpromazine, sulpiride, perphenazine, and haloperidol. The second-generation anti-schizophrenia (SGAs) include clozapine, risperidone, olanzapine, quetiapine, amisulpride, ziprasidone, and aripiprazole. The FGAs drug is less effective than the SGAs. Now, researchers are still developing the treatment of schizophrenia and new medicines. The results of the clinical antipsychotic trials of intervention effectiveness (CATIE), cost-utility of the latest antipsychotic drugs in schizophrenia study (CUtLASS), and The European first episode schizophrenia trial (EUFEST) shown that the medical treatments are becoming more and more reliable but still need to be developed targets toward different genes [1]. Psychological treatments are also important to cure the patients and the time patients were treated is an important thing to consider. This paper first introduces psychological intervention and mainly discusses the FGAs and SGAs.

2. The psychological method

2.1. Questionnaire

Before diagnosis in most hospitals, researchers will first ask the potential patients to fill out a questionnaire to test whether they have mental health problems. There are many kinds of questionnaires to ensure the patients get the whole check before diagnosis. The questionnaire includes Mental Illness in America and the Positive and Negative Syndrome Scale. The question here is whether someone will write down or click the choice which they do not feel and cheat the researchers and also the researchers do not know what is the real thing the patients think. In this case, the patient will be diagnosed that they are well and get deeper and deeper into the illness.

2.2. The psychological method of treating schizophrenia

The psychological method in treating schizophrenia has special advantages when the patients are not diagnosed. The study showed that for mild schizophrenia, the mean effect sizes of three psychological interventions during 12-months follow up show that for positive and CBT (cognitive behavioral therapy) 95% confidence interval is 0.30-0.54 [2]. For severe schizophrenia, the combination of medicine and psychological method will be the better way to treat it. The study shows that, if the patient with severe schizophrenia and with the treatment of CBT and medication methods, in the end, they will get the knowledge that which kind of situation will lead them to get the psychotic episodes and also the patients know how to decrease this kind of time and then avoid that [3]. Therefore, we can know that when researchers try to treat schizophrenia, the psychological method is a great way to use and have great effects on both mild and severe schizophrenia, which meant that researchers in the future need to do more research and experiments to know which kind of treatment will be the most effective.

2.3. Animal-assisted therapy (AAT)

Pet therapy is a new way to treat patients without medicines or use in an adjuvant way. This therapy will help people get love or get warmness or become better. One of these reasons for Animal-assisted therapy is dogs or cats can give love to them without any consideration or for their reasons, so patients maybe get sympathy (one of the symptoms of schizophrenia is loss of sympathy), and get love from their dogs and cats or some other animals. Therefore, they will get some treatments this way and then give themselves the courage in living and fighting with diseases. The patient's onset period would not have sympathy and cannot feel loved or feel warm. But people who love cats and dogs before getting illnesses will want to love them for the second time. They may want to love them again and want to accompany them for the rest of their lives. Therefore, they will become better to some extent. This will be a good start that they want to love others and this is the first step for them to become a normal people. However, some patients will still not find normal lives. Therefore, in this time, other methods will need to be used to cure adjuvant [4]. The study shows that Social skill programs (SSP) will help the people who have schizophrenia to have “model learning”, and give the patients the “general molecular skill” and “molar skills” [5]. The SSP increases the patients’ ability in social performance and releases stress and difficulty. Another study showed that after finishing the AAT therapy, the participants told the researchers that they receive an improvement in domestic and health activities by using the Independent Living Skills Survey [6]. Therefore, the researchers conclude that it is helpful to use AAT for patients who have schizophrenia in rehabilitation.

2.4. The determination of the number of network layers

BP neural network is back propagating, mainly composed of three parts: input layer, middle layer and output layer. The number of nodes in the input and output layers is relatively easy to determine, but the determination of the number of nodes in the hidden layer is a very important and complex problem.

3. Medication

3.1. First generation anti-schizophrenia-drugs (FGAs)

FGAs has effects on patient who have schizophrenia. For several years of research, researchers found that for the patient who is onset after the suitable treatment, about 75% of the patients can be cured clinically. In addition, this study also shows that the effect appearing for prognosis's critical point is whether people will get appropriate treatment although the disease has the fluctuating condition and less damage to nerve function. Thus, if the patient tricks the researchers, the patient will miss the golden time for treating schizophrenia. The research shows that patients need to be treated as early as enough; using one medicine to treat first; Use the same medicine first. treat differently for different methods; put our attention to the side effects.

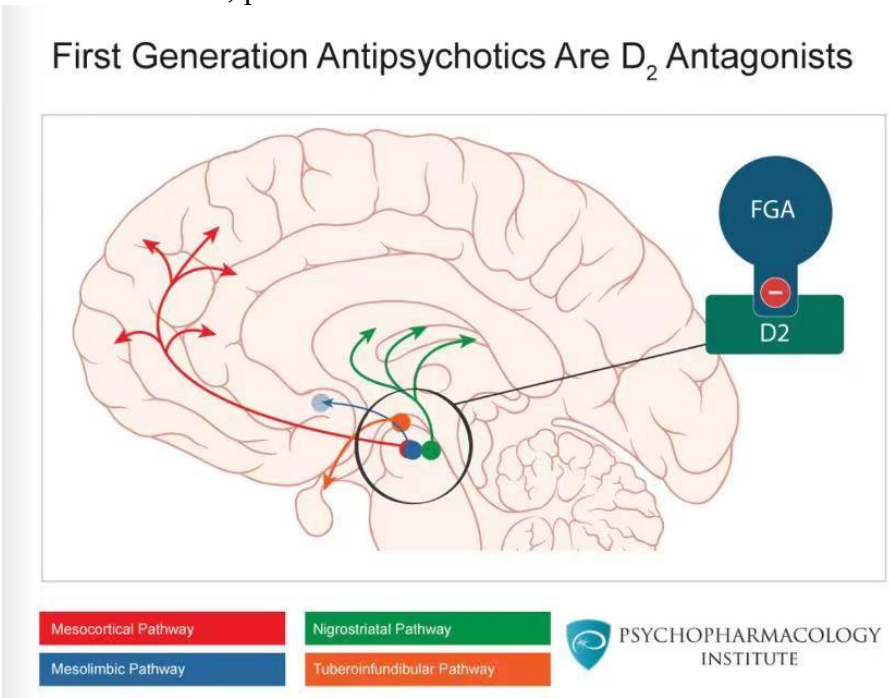


Figure 1: Schematic diagram of FGAs action [7]

FGAs include chlorpromazine (CPZ), perphenazine, haloperidol, clozapine, and many other medicines. The article will introduce the effects of the FGAs on these three specific medicines.

The study showed that CPZ can help patients think in a normal way, reduce the possibility of nervousness, and act as a participant in their daily lives [8]. CPZ has a great effect on patients and also has some side effects. The study shows that CPZ will lead to the pigmentation of skin for the patients who are used CPZ for a long time and after the patient replaces the CPZ with clozapine, paliperidone, and aripiprazole. Thus, researchers know that CPZ has a great effect on many patients but also has many problems, like side effects and individual differences for them. Many studies have also shown that CPZ should not be used widely. The following article will talk about the SGAs can be used to replace FGAs as a better method for treating schizophrenia.

Perphenazine has many hard side effects. The study showed that Perphenazine is a substantial first-pass effect and has only 40% bioavailability. This study also showed that perphenazine has no better or worse effects compared to other anti-schizophrenia medicines. The researchers found that the results of the first-generation anti-schizophrenia medicines have similar effects and also all of them have different and hard side effects [9].

Clinically, However, FGAs can lead to the symptoms of depression. The researchers said that for the people who have schizophrenia anxiety 41%, irritability 31%, insomnia 28%, depression 22%, suicide 9%, and Affective symptoms occur in 50% to 80% of patients in the acute stage, 33% in the chronic hospitalization stage, and about 40% in the early stage of the disease. For the high cured

percentage, FGAs still have great effects on patients who have schizophrenia, but also have different side effects, so the researchers need to use FGAs carefully.

According to different chemical structures, they contain serotonin-dopamine antagonists and different acting receptor-targeted antipsychotics. Most FGAs are related to phenothiazine and are all found that they have different degrees of dopamine, like D1-D5, histamine, and cholinergic receptor antagonism. Neuroleptics include some syndrome, like psychomotor slowing, emotional quieting, and effective indifference. At first, the researchers use this as a sign of treatment well, but after many years of clinical experiments, they found that these kinds of signs are not necessary. The common FGAs are chlorpromazine, sulpiride, perphenazine, and haloperidol. FGAs have more side effects and are less effective than second-generation anti-schizophrenia medicines. The study shows that there are about 70 kinds of side effects including extrapyramidal symptoms, anticholinergic effects, and even lead death [10]. Also, another study showed that cardiovascular side effects influence the most participants and account for about 56.3%; sedation and CNS effects account for about 49.6%, and extrapyramidal side effects account for about 38.0%. In addition, the study showed that 97.7% of the participants who developed FGAs had medication-induced side effects [11]. Patients who have FGAs get the experience of more than one side effect up to 50-60%. These side effects have a large percentage of induced people, so this means that researchers did poorly in the past and need to develop more effective medicines for patients to treat.

3.2. Second generation anti-schizophrenia medicine (SGAs)

SGAs have a great effect on treating schizophrenia for most people and also can reduce the risk of getting side effects. After many years of research, researchers found that SGAs for the patients prevent side effects to some extent. SGAs are D2-5-HT2 receptor antagonists and the research has shown that SGAs will influence either positive symptoms or negative symptoms. Furthermore, this kind of disease can be used widely and will have less elicited extrapyramidal responses. This study also shows that SGAs have been replaced by FGAs in a large number of people and are also the first choice for researchers to use. Furthermore, SGAs have different target acceptors and have many kinds of medicines, so SGAs can give patients individual choices. This study also showed that EPS: Appropriate drugs should be selected first. The first-generation antipsychotics are the most likely to cause EPS. Among the second-generation antipsychotics, risperidone and paliperidone are higher in order, and aripiprazole and ziprasidone are higher in order. Ketones were second, olanzapine and quetiapine less, and clozapine almost none. When EPS occurs, first switch to a drug with a lower incidence, and if necessary, use other drugs, such as tetrabenazine tablets; if it is still ineffective, try combining vitamin E, vitamin B6, and donepezil. However, the guidelines do not recommend the use of anticholinergic drugs, which may worsen symptoms, and there is clinical controversy. Metabolic abnormalities: Increased body weight and abnormal glucose and lipid metabolism have become issues that need attention in drug treatment, which seriously affect the compliance of patients with medication and increase the risk of cardiovascular disease and diabetes. Therefore, due to monitoring metabolic indicators such as blood glucose and blood lipids during the medication period, early prevention is required. The latest research suggests that metformin is effective in controlling weight gain caused by antipsychotic drugs, and also has clinical curative effects on abnormal blood sugar and blood lipid metabolism. Anti-schizophrenia drugs may have many adverse reactions, including endocrine disorders, cardiovascular adverse reactions, sedative effects, salivation, thermoregulation disorders, anticholinergic adverse reactions, liver function damage, epilepsy, blood system Changes, etc., clinically should be alert to these adverse reactions, and timely treatment.

Clozapine is one kind of medicine for treating schizophrenia. After it is used for many years, researchers found that Clozapine has many side effects and also has some good points for patients. One research said that in 100 hospitalized schizophrenia patients, the side effects occurred in the percentage 73 of all patients. The study also shows that the liver enzyme will increase and the amount of other side effects is small. Therefore, the study shows that the patient who has the clozapine for a long time is safe and will have efficiency [12]. Another study showed that clozapine can cause many

blood problems, and also will cause heart rhythm, such as QT prolongation. This study also showed that clozapine will also increase the risk of getting anticholinergic effects [13].

Olanzapine is also one kind of medicine for treating schizophrenia. Of its great effects on patients, now, more and more researchers want to use them as the first medicine to treat schizophrenia. The study shows that this kind of medicine can help people have a great mind when they are thinking and also will prevent hallucinations. The study also showed that Olanzapine can restore the balance of specific natural substances in the brain. Some researchers use this medicine first and for many patients, it is the right way to treat and they will not miss the golden time in treating schizophrenia [14]. Always, researchers will give the patients a small dose first and then add the dose gradually. The study showed that it is easy to get side effects, so the researchers should carefully add the dose.

Solian is a kind of medicine that can be used for treating schizophrenia. The study shows that Solian has greater effects on treating schizophrenia than olanzapine and is greater at the percentage of 11%; also, Solian has fewer effects on treating schizophrenia than clozapine and is less at the percentage of 25%. The study showed that solian is the better choice for treating patients who have had schizophrenia. Some studies showed that solian will increase the risk of triggering granulomatous lobular mastitis (GLM) [15]. Solian will increase the secretion of prolactin. After the accumulation of the dose of solian, the medicine will lead to the swollen breast and then lead to GLM. GLM also has many other side effects, like inflammatory arthritis, arthralgias, episcleritis, and erythema nodosum. Today, in China, researchers still have no idea about treating GLM. Some method of treating GLM is using traditional Chinese medicine. Researchers still need to find more great ways to treat GLM which is one of the side effects of having solian.

For now, SGAs are still in has great future and need to be replaced by better treatment methods. Schizophrenia treatment with the right medication way will give more and more opportunities to the patients to get well. Because of the limited methods, researchers can use, new medicines should be found and help more and more people become better and live as normal and healthy people. The following article will introduce one new treatment method which is used now.

4. Medicaid enterprise certification toolkit (MECT)

MECT is a new way to treat schizophrenia and also for other kinds of mental diseases, like depression. After these years try, the researchers found that it is useful for treating schizophrenia. The study showed that patients with medicine combined with the MECT have great effects on their symptoms [16]. Also, MECT can lead to headaches and anxiety. MECT can cause transient degenerative memory deficits and memory loss within 30 minutes of seizures. If researchers do more MECT for patients, this kind of memory loss and memory damage will occur. The study also showed that if patients get MECT two to three times, this action will not occur. To some extent, these kinds of diseases just occur for less time, but researchers still can try to use this method to treat patients.

5. Conclusions

Studies have shown that first-generation anti-schizophrenia drugs and second-generation anti-schizophrenia drugs have different efficacy and side effects. In patients with schizophrenia, FGAs can lead to depressive symptoms such as anxiety, irritability, insomnia, suicidality, and affective symptoms in 50 to 80 percent of patients, the researchers said. SGAs are very effective in the treatment of schizophrenia and have gradually replaced FGAs. The target receptors of SGAs are different, and there are many kinds of drugs, so SGAs can give patients individualized choices. However, SGAs can also cause cardiovascular adverse reactions, sedation, salivation, thermoregulation disorders, anticholinergic adverse reactions, liver damage, epilepsy, and changes in the blood system. These adverse reactions should be alerted clinically. For the past experiments, researchers found that SGAs is better than FGAs and will have less side effects on patients. More and more methods should be found for the future treatment to cure more and more people which will also

save more families. Therefore, researchers still need to put their efforts on getting a more straightforward method to treat patients who have schizophrenia. Also, these straightforward medicines will help many patients do not miss their treatment golden time.

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