World Journal of Environmental Biosciences

Available Online at: **www.environmentaljournals.org**

Volume 10, Issue 2: 72-74

https://doi.org/10.51847/AL9OalvTxP

ISSN 2277- 8047

A Review on Schizophrenia Diagnosis and Management Approach

Sharifa Mohammed Omar Khormi[1*], Mona Ali M Qahtani[1], Bashaer Hadi A Khormi[1], Khalid Mousa Q Kulaybi[1], Reem Mohammed Y Kariri[1], Ibtihal Hassan A Hadi[1], Fahd Saud A Almesned[1], Khalid Mohammed Altuwayjiri[2], Haitham Mohammed Saeed[2]

[1]Eradah Hospital for Mental Health, Jazan, Saudi Arabia.
[2]Faculty of Medicine, Qassim University, Qassim, KSA.

ABSTRACT

Schizophrenia is a severe mental illness commonly encountered during clinical practice. The article overview provides an overview of the epidemiology, clinical characteristics, investigations, and management of schizophrenia to establish the basis for understanding the disorder and the treatment. This review article is aimed to highlight the recent research findings to improve clinical understanding. The 1st theory considered is the effect of genetic and early-life environmental risk factors in altering neurologic development to predispose the patient to the disorder and its prodromal symptoms. The 2nd theory impacted the cortical excitatory-inhibitory imbalance development of the -ve diseases and cognitive signs. The factors related to psychological role, dysfunction of subcortical dopamine, and psychosocial stressors are considered the third and final theory in developing the +ve symptoms of the disorder. The databases searched for studies were Medline, Pubmed, Embase, NCBI, and Cochrane of patients who developed schizophrenia. The incidence, etiology, and management options were analyzed. Schizophrenia presents with complex manifestations caused by multifactorial etiologies. Nonetheless, the fundamental characters in neurological circuits have been acknowledged as progressive neurosciences, precisely the brain's frontal, temporal, and mesostriatal regions that incorporate the improvement of both +ve and –ve intellectual symptoms. The exact mechanism was used to operate current pharmacological treatments, Flupentixol, that contribute to their adverse effects. However, the circuit mechanisms discussed a potential cure to target the particular benefit in signs domains, which did not serve by the existing medicines.

Keywords: *Schizophrenia, Diagnisis, Management, Evaluation*

Corresponding author: Sharifa Mohammed Omar Khormi
e-mail ✉ Shosho19992@gmail.com
Received: 10 April 2021
Accepted: 30 June 2021

INTRODUCTION

The functional, psychological disorder dealt with hallucination, delusions, behavior deteriorations, and thoughts believed to categorize as schizophrenia. The signs in schizophrenia are mainly divided into two categories: the +ve characters that incorporate hallucinations and thought disorders and the –ve signs, which encompass speech poverty, loss of motivation, and anhedonia (McCutcheon *et al*., 2020). The investigation associated with these issues is rendered as clinical. It is made after rolling out other causes of psychosis and taking a complete psychiatric history (McCutcheon *et al*., 2020). Schizophrenia correlates with the broader population related to low life expectancy and a 5-10% higher risk of suicidal attempts (Hjorthøj *et al*., 2017).

This review aims to discuss schizophrenia from various angles, pathophysiology, signs and symptoms, and management to make it simple for the physician to identify it and treat it accordingly.

Epidemiology

Schizophrenia affects people worldwide. For decades, it has been believed that schizophrenia has a lifetime morbidity risk of 1% across time, gender, and geography. The studies suggested that all populations and relevant exposures be ubiquitous and environmental factors in conferring risk are unnecessary. McGrath and his colleagues obtained a multiple m-analysis on the same view of the destabilized risk (McGrath *et al*., 2008). The team found that the rough estimates of an incidence amongst M/F are 15 and 10 per 100.000 population per year; the risk morbidity of an entire life is approximately 0.7% and the occurrence of 4.6 per 1000 (Van Os & Kapur, 2009). The diagnostic rate criteria incorporating different psychotic disorders that were not specified or applied were conservative, like brief psychotic disorder, delusional, and psychosis, which are 2-3 fold higher (Van Os & Kapur, 2009). Nonetheless, McGrath established a verse majority of the document explaining the distinctive investigations or other statistical differences throughout the incidence and the factors that dealt with etiology and exposure almost five-time or more (Van Os & Kapur, 2009).

MATERIALS AND METHODS

Regarding the inclusion principles, the articles had been selected primarily based on the inclusion of one of the following topics: schizophrenia, control, and assessment. The Articles selection was performed by PubMed software through inputting subsequent data have been in the Mesh (("Schizophrenia" (MESH)) & ("Assessment" (MESH)) or ("Control" (MESH)).

Exclusion principles articles were all different, no longer having a topic as their principal endpoint. Around ninety publications have been selected as the most clinically applicable out of 1,202 articles listed within the preceding decennium, and their complete texts had been assessed. Thirty-one (31) of the ninety have been incorporated after an intensive examination. Additional studies and publications have been discovered using the identified and related research reference lists. Professional consensus suggestions and observational remarks have been introduced wherein applicable to assist practicing physicians investigate schizophrenia most actually and practically viable.

RESULTS AND DISCUSSION

Pathophysiology

Three possible hypotheses explain the pathophysiology of the mental issue. Firstly, the disturbance associated with neurochemicals and predictions debates that the instability of $C_{10}H_{12}N_2O$, C4H9NO2, C8H11NO2, and GLU leads to the psychiatric signs and symptoms of the sickness (Mueser & Jeste, 2011). It suggests that the four-mesocortical pathways are incorporated in the manifestations of mental issues. The $C_8H_{11}NO_2$ predictions are associated with excessive D2 receptors activation to the +ve signs of the illness by the mesolimbic pathway; on the contrary, the nigrostriatal path lower levels of dopamine are thought to cause motor signs by the effect on the extrapyramidal system (Mueser & Jeste, 2011). The story of $C_8H_{11}NO_2$ associated with dopaminergic result path of m-cortical is believed to lead to –ve signs of schizophrenia (Mueser & Jeste, 2011). Worsening of +ve and -ve signs in schizophrenia using NMDA receptor antagonists illustrates evidence showing glutaminergic hypoactivity's potential effects. In contrast, the development of schizophrenia has been withdrawn from part of serotonergic hyperactivity (Stahl *et al*., 2013). Schizophrenia suggests from other hypotheses that it is a neuro-developmental illness proved by the abnormalities found in the cerebral structure. The motor's mental impairments in patients predate the illness onset, and the lack of gliosis suggests in utero changes.

On the contrary, the neuroanatomical theory emphasizes the alterations seen in MRI and PET scans. Schizophrenia volume appeared to have a reduction in grey matter (Vita *et al*., 2012). Hippocampus and frontal lobes modifications potentially contribute to various mental and memory damages associated with the illness (Vita *et al*., 2012).

Evaluation

s previously described, schizophrenia is a chronic disorder with various symptoms without pathogenic symptoms. The diagnosis of schizophrenia is established via assessing the patient's specific signs, as indicated by the (DSM-5) (Patel *et al*., 2014). The DSM-5 signifies that "the criteria f diagnosis for schizophrenia active-phase signs and symptoms cover two-more persistence, the signs prolong for one month with each plays a significant portion of either hallucinations, delusions, disorganized speech or catatonic behavior.

In addition, the qualifying signs must be delusions, incoherent speech, or hallucinations of one or more of the negative symptoms (Patel *et al*., 2014). Moreover, the patient exhibits a reduced level of functioning regarding work, interpersonal relationships, or self-care; the DSM-5 states that to warrant a diagnosis of schizophrenia. Continuous signs of schizophrenia must also be for at least six months, including the one month of active-phase symptoms noted above (American Psychiatric Association, 1980). To distinguish the necessary comprehensive differential diagnosis of disorder from different mental health conditions incorporating catatonic features with depressive disorder with psychosis, OCD, schizophreniform, body dysmorphic, schizoaffective disorder, and PTSD (American Psychiatric Association, 1980). Signs incorporate delusions timing, and the manic severity Schizophrenia can be distinguished from these comparable situations through a decisive evaluation of a prolonged period of the diseases. Moreover, the clinician must confirm that the presenting signs re not a outcome of substance abuse or another medical issues (American Psychiatric Association, 1980).

Management

Almost all antipsychotic drugs available in the clinical settings for schizophrenia derive their effectiveness through DRD2 blockade, Since the serendipitous discovery of chlorpromazine over 50 years ago. Clozapine is the most potent in efficacy among a group of antipsychotics, including **Clozaril**, which binds and influences not only DRD2 but also other neurotransmitter receptors, such as 5HT-2R (Owen *et al*., 2016). The risk of agranulocytosis and neutropenia in the UK account for (1-3%), is advisable to use Clozaril to those who have failed to respond to other antipsychotic and further monitoring of blood is required (Leucht *et al*., 2012). The hallucinations of auditory and delusions remain acute, and long-term drug-related treatments are relatively essential in decreasing +ve signs. Nonetheless, the outcome is not productive to diverse vital clinical characteristics of schizophrenia, a –ve signs and mental dysfunction, which are considered vitally related to practical impairment than +ve signs (Leucht *et al*., 2012). Acute adverse effects incorporating overweight, activity disorders, and sedation are distinctive and contribute to poor observance. Nonetheless, indications have shown that lengthy maintenance therapy with drugs related to antipsychotics effectively prevents relapse of psychosis signs (Leucht *et al*., 2012).

Moreover, Individual reaction is frequently idiosyncratic and challenging to expect a considerable amount of patients who demonstrate no, or at paramount limited, the reaction in constructive signs with contemporary antipsychotic drugs. Innovative, so-called second-generation antipsychotic drugs can be conclusive in handling psychotic signs with lesser movement disorders but carry an advanced risk of cardio-metabolic adverse effects. Therefore, choosing the optimum antipsychotic is practical and stabilities individual assistances with costs and risks. Clozapine is active in around 60% of previously therapy-refractory cases, but it is under-prescribed evidence (Laursen *et al*., 2014). The active management of schizophrenia necessitates pharmacotherapy to be entrenched within a framework of resilient psychological and social support, While antipsychotic medication remains the cornerstone of control (Bentall, 2003).

Approaches to improve adherence and vocational and educational support and rehabilitation require a multi-disciplinary approach involving various healthcare professionals and agencies delivered in a community-care setting. Specialist early intervention services, which focus on those experiencing their first psychotic episode and the following three years, are available in many developed countries and are popular with service users and carers (The Schizophrenia Commission, 2012). These have beneficial effects

on outcomes in the first few years, but their long-term impact remains uncertain120. Current UK NICE guidelines on Psychological treatments have been mandated. They recommend that everyone with schizophrenia should be offered cognitive-behavioral therapy (CBT) and family intervention as well as antipsychotic medication (Bentall, 2003). CBT's degree of efficacy and cost-effectiveness in schizophrenia is controversial, and there is little evidence that it influences underlying psychological mechanisms. However, a role for CBT is justified by evidence that various potentially mutable psychological mechanisms increase the risk of specific symptoms. One possibility is that the effectiveness of CBT depends upon non-specific factors such as the relationship quality between the therapist and the patient (therapeutic alliance), and there is evidence to support this regarding schizophrenia (Goldsmith *et al*., 2015). Clinical control additionally focuses upon bodily health: mainly pre-emptive measures that include a nutritional recommendation, drug abuse, workout and smoking cessation, and surveying of cardiac and risk factors related to metabolic (Van Os & Kapur, 2009). Care is provided through a multi-disciplinary group of mental health experts in essential and auxiliary group settings and specializes in either health or social care. In recent years, the notion of the result has been undoubtedly poorly challenged by using potential research results, and there may be an exquisite miscellaneousness with relatively desirable outcomes visible in 20–50% of cases (Van Os & Kapur, 2009).

Nonetheless, whilst individuals with schizophrenia live autonomously at the health center, many require persevering with assistance from both services and relatives. Furthermore, the mortality rate is significantly elevated. The risk of about 6.5% in a lifetime for suicide is extended 12-fold in comparative menace. Mortality of 126 is acquainted from top natural reasons, particularly cardiovascular problems, which is the most substantial component contributing to the Ten–Twenty yearly discount life expectancy. The rationales of this are believed to encompass factors incorporating smoking and different way of living, and the most suitable remedy of physical problems in schizophrenia patients, but additionally aspect outcomes of pharmacological therapy especially cardio-metabolic. Numerous trails to lessen the excess mortality are ongoing (Nordentoft *et al*., 2011).

CONCLUSION

Schizophrenia is a complicated disease that desires to set off therapy at the primary symptoms of psychosis. Clinicians ought to regard the prospective for lack of adherence and therapy-affiliated detrimental consequences whilst growing a sweeping therapy plan. Patients can enhance their adaptive behavior through convenience through intercession, including medications and pharmacological control. It is encouraged that succeeding studies will cope with intervals in therapy and probably a remedy for schizophrenia.

ACKNOWLEDGMENTS: None

CONFLICT OF INTEREST: None

FINANCIAL SUPPORT: None

ETHICS STATEMENT: None

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