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Insights of Schizophrenia

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Commentary Article

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ABSTRACT

Schizophrenia is a psychological disorder, classified separately from other disorders because no other psychiatric condition has evoked such diverse opinions. Substance abuse is a common concern of the family and friends of people with schizophrenia. Smoking, alcohol and illicit substance use are major causes of morbidity and mortality in patients with schizophrenia. The present commentary presents a brief information on Schizophrenia

Schizophrenia is a psychological disorder, classified separately from other disorders because no other psychiatric condition has evoked such diverse opinions. Schizophrenia is characterized by the inability to separate reality from a non-reality and generally appears in adolescence or early adulthood, although, it can emerge at any time in life.

Schizophrenia patients often experience non-existent stimuli that create perceptions of things that do not exist, such as voices and may have different symptoms like: delusions, disorganized speech, hallucination, agitation, social withdrawal, and bizarre behaviors. 0.5%-1.5% of the population who are diagnosed with schizophrenia, many will chronically suffer distressing and dysfunctional delusions [1].

DIFFERENT TYPES OF SCHIZOPHRENIA

The following illustrations are the different types of schizophrenia are defined according to the most significant and predominant characteristics present in each person at each point in time [2].

Paranoid schizophrenia is characterized by auditory hallucinations and delusions about persecution or conspiracy. However, unlike those who have other subtypes of the disease, these individuals show relatively normal cognitive functioning.

Disorganized schizophrenia is a disruption of perspectives, to such an extent that every day habits (e.g., showering, brushing teeth) are impaired. Sufferers often display inconsistent feelings i.e., they might laugh at a tragic event and their speech and actions seems to be disorganized.

Catatonic schizophrenia includes an unsettling influence in movement. Some may quit moving (catatonic stupor) or experience drastically expanded development (catatonic excitement). Additionally, these people may expect odd positions, ceaselessly rehash what others are stating (echolalia) or copy someone else's development (echopraxia).

Undifferentiated schizophrenia includes a few manifestations from the above sorts, yet the indications don't precisely fit the criteria for alternate sorts of schizophrenia.

Residual schizophrenia is diagnosed when an individual no more shows side effects or these manifestations aren't as extreme.

Lifetime risk of schizophrenia is 1%, with an annual incidence of about 15-20 individuals in every 100,000 of population.

Schizophrenia can have an overwhelming effect on patients and their families, major complications include the following [3]:

- Suicide – 5-10% of deaths
- Depression - occurs in 50% of cases, often after an acute episode
- Homelessness – 30-35% of homeless
- Crime: 4-fold increase in acts of violence compared with the general population. These patients are more frequently victims of both violent and nonviolent crimes.
- Substance abuse

Substance abuse is a common concern of the family and friends of people with schizophrenia. Smoking, alcohol and illicit substance use are major causes of morbidity and mortality in patients with schizophrenia [4]. Research has shown that the relationship between smoking and schizophrenia is complex. The prevalence of cigarette smoking is higher in patients with schizophrenia (80%) compared to the general population (20%) and to mentally ill patients (50%) worldwide.

Recent results suggest that smoking and associated alcohol and drug use might be important confounding variables in neuroimaging studies of schizophrenia. Using serum cotinine level as an objective measure of smoking severity we were able to observe the effect of smoking (or a factor associated with smoking severity) on neuronal activation. Activation of frontal lobe and left precuneus (BA7) during a cognitive processing task (MSIT) was related to smoking severity in alcohol dependent patients with schizophrenia [5].

The prevalence of smoking is exceptionally high (70% to 80%) within the schizophrenia population compared to other psychiatric disorders (50%) and the general population (21%) [6]. Social factors like unemployment, low educational attainment, peer influence and lack of smoking cessation treatment in mental health systems may also contribute to the increased risk of smoking in this population [7]. Similarly, it has been observed that smoking within this population helps these individuals cope with stress and boredom and it has been posited that nicotine may be used in this population to overcome side effects of variable anti-psychotic medications. Although people with schizophrenia may smoke to self-medicate their symptoms, smoking has been found to interfere with the response to antipsychotic drugs. Several studies have found that schizophrenia patients who smoke need higher doses of antipsychotic medication.

Neuronal pathways in the brain regions involved in schizophrenia are the mesolimbic system, the prefrontal cortex and the hippocampus. In a schizophrenic patient, dopamine and serotonin hyperactivity and hypoactivity of presynaptic inhibitory neurotransmitters (GABA and glutamate) have been reported [8,9]. In the prefrontal cortex, D1 dopamine hyperactivity and M4 acetylcholine hypoactivity was found. An antagonistic interaction between D1 dopaminergic and M4 muscarinic cholinergic neurons has also been described. The alteration of some neuropeptides, such as neurotensin, cholecystokinin and tachykinins is also reported.

In a recent study, it is reported that in the brains of patients with schizophrenia, the lectin-positive SPD was observed in the molecular layer of the dentate gyrus of the hippocampal formation, without exception, regardless of previous medication of antipsychotics [10]. The molecular basis of lectin-positive SPD formation of schizophrenia, possibly linked with apoptotic process, and may also related to neurodevelopment should further be elucidated. This leads for further studies of lectin pathology as well as lectin physiology to establish novel methods for diagnoses and treatment of neuropsychiatric illnesses like schizophrenia.

Schizophrenia is treated using organic compounds extracted from the natural resources like *Hericum erinaceum* (HE), a unique mushroom for its cognitive function improving actions. Amyloban[®]3399, a product made of amycenone, a standardized extract of HE containing hericenones and amyloban is currently being tested for safety as a health food supplement. It has been reported that Amyloban[®]3399 increases mental alertness, encourages positive behavior, and improves mood and attentiveness to one's surroundings, thus, increasing learning and motivation, while promoting interactions with others. It is hypothesized that Amyloban[®]3399 may be beneficial for treating primary cognitive deficits and negative symptoms of schizophrenia [11].

Usually Schizophrenia is treated using Cognitive Behaviour Therapy (CBT), Acceptance and Commitment Therapy (ACT), Supportive Psychotherapy, and Compliance Therapy [12]. A number of studies examining the effectiveness of CBT for positive symptoms of schizophrenia have claimed that CBT provides significant results. A meta-analysis by Zimmermann, et al. revealed that randomized controlled trials of CBT (sometimes with the added benefit of single blind procedures) are able to elicit significant benefits [13]. Sarin et al. notes that CBT for individuals with schizophrenia had better outcomes if the intervention involved 20 sessions or more, which is perhaps a reflection of the severity of the disorder, as well as the time needed to induce long-term change [14]. Psychosocial

interventions like social skills training, vocational rehabilitation, family psychoeducation etc., are suggested to the patients of schizophrenia.

This short commentary, although not comprehensive, endeavors to highlight the insights of schizophrenia which is complicated and stressing the need of progress in this particular area of research.

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