Schizophrenia

Schizophrenia is a serious, devastating psychiatric disorder with several clinical presentations, treatment response, and courses of illness which greatly alters how a person thinks, perceives, feels, and behaves. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), schizophrenia is referred to the schizophrenia spectrum (Sadock, 2015).

**Clinical presentation**

Five subtypes of schizophrenia based on DSM-IV were consist of paranoid, disorganized, catatonic, and residual, but in DSM-5 these subtypes are not included. Clinical presentation of schizophrenia consists of a wide range of symptoms (Tandon, Nasrallah, & Kesavamurthy, 2009) including changes in perception, emotion, cognition, thinking, and behavior (Bizarro) with various expression among patients and over time, but the effect of the illness is severe and long lasting (Sadock, 2015) and have a negative effect on patients’ social and occupational functions (Tandon et al., 2009). Some psychopathological studies have simplified the schizophrenia symptoms into the positive symptoms (experiences which are added on to a person’s usual experience) such as delusions, hallucinations, disorganized speech, and grossly disorganized behavior or negative symptoms (symptoms that indicate reduction of a capacity) such as flat affect, avolition, and alopecia. Moreover, prominent hallucinations or delusions (reality distortion) are usually present at least for 6 months. Sleep disturbances are prevalent in patients with schizophrenia (Kamath, Virdi, & Winokur, 2015). Neurological disturbances, catalepsy, and metabolic disturbances are physical manifestations associated with schizophrenia. Most neurological disturbances such as extrapyramidal symptoms (EPS) consist of tremor and bradykinesia, acutely dystonias, akathisia (a subjective sense of restlessness or actual restlessness), or tardive dyskinesia (which includes abnormal peri-oral and other movements) are induced by antipsychotic medications (Torrey, 2002). Schizophrenia is associated with diabetes, hyperlipidemia, and hypertension. Some antipsychotics cause weight gain and diabetes (Kohen, 2004).

**Diagnosis**

Diagnosis of schizophrenia is based on the psychiatric history and mental status examination. There is no single laboratory test or brain imaging for schizophrenia (Sadock, 2015). The diagnosis is based on DSM-V criteria which is based on the presence of positive and negative symptoms, coupled with social or occupational dysfunction, for at least 6 months in the absence of another diagnosis that would better account for the presentation.

**Prognosis**

Schizophrenia is a chronic disorder in which over the 5 to 10-year period after the first psychiatric hospitalization of patients, about 10 to 20 percent of them experience a good outcome while more than 50 percent experience a poor outcome. Range of relapse is between 10 to 60 percent, and about 20 to 30 percent of all patients are able to live normally (Sadock, 2015). Patients who have a negative family history of schizophrenia experience a good social and occupational adjustment prior to the onset of symptoms, insight of symptoms, suddenly onset of disorder especially in older age, and a personal or family history of mood disorders have a good prognosis. Patients with schizophrenia have a high rate of substance abuse, and those with substance abuse have their first hospitalizations at earlier ages, more frequent hospitalizations, and more interpersonal and family discord. Patients with severe psychotic disturbances have a higher likelihood of aggressive behavior than those with fewer psychotic symptoms; Cardiovascular diseases and suicide are the most common causes of death in patients with schizophrenia. These patients also smoke more than patients affected by other mental disorders (Schulz et al., 2007).

**Treatment**

Treatment of schizophrenia is a holistic approach, but paying attention to each patient’s needs is crucial. Although antipsychotic medications are the main treatment for schizophrenia, psychosocial interventions (for patients and their families) can augment the clinical improvement. Patients with schizophrenia benefit more from the combined use of antipsychotic drugs and psychosocial treatment than from either treatment used alone (Sadock, 2015). There are two generation of antipsychotic drugs. The first-generation drugs are more effective on positive symptoms with more extrapyramidal side effects than second generation. The second-generation are more effective on negative symptoms with higher metabolic side effects (Kane & Correll, 2010). In patients with schizophrenia, psychosocial therapies include a variety of methods to increase social abilities, self-sufficiency, practical skills, and interpersonal communication. When antipsychotic strategies involve work, school and relationship goals are essential in creating a plan of care. Schizophrenia is a progressive disorder with emergent treatment resistance in most cases (Catts & O’Toole, 2016). Exercise (R mortar et al., 2017) and circuit training therapy (Rim et al., 2017) have been developed as therapies for persons with schizophrenia. Family therapy is an important intervention in schizophrenia because expressed emotions in family members is a robust predictor of relapse (O’Connor, 2016). The original goal of family psycho-educational intervention is decreasing families’ high expressed emotion, improving social and role functioning of patients, and enhancing family well-being (McFarlane, 2016).

**Etiology**

The exact mechanisms of schizophrenia is unknown (Seikari et al., 2016), however, several abnormalities in different parts of brain have been observed in patients with schizophrenia such as lateral and third ventricular enlargement, reduction in cortical volume, reduction in cortical gray matter especially during the earlier stages of the disease. Furthermore, patients with schizophrenia have lower levels of phosphomonoester and inorganic phosphate and higher levels of phosphodiester (Sadock, 2015). Several hypotheses assume a link between schizophrenia and bad regulations of the dopamine, glutamate, and serotonin receptor pathways in a presynaptic level. This process could occur through vessel recruitment, docking, membrane fusion, and recycling, leading to efficient neurotransmitter delivery at the synapse which impacting postsynaptic signal transduction via several neurotransmitters in key brain regions (Elphug, Sinclair, & Hahn, 2016). Excessive nitric oxide (NO) production, an intra- and intercellular messenger in the brain, may contribute to the pathology of schizophrenia (Potsikas, 2016). The evidence which confirm the relationship between vitamin D deficiency and schizophrenia is insufficient (Adamson et al., 2016).

**Who is at risk for schizophrenia?**

Schizophrenia is a complex multifactorial psychiatric disorder involving genetic and environmental factors (He et al., 2016). Delivery complications, infections during pregnancy, heavy cannabis use in adolescence (Maki et al., 2005), and head injury are risk factors for schizophrenia (Otsokova et al., 2014). Epidemiological data depict a high incidence of schizophrenia after prenatal exposure to influenza. Also, the prevalence of schizophrenia is higher in cities with populations more than 1 million people (Sadock, 2015). In Canada, high latitude and a large and growing immigrant population are two major risk factors for schizophrenia (Catts & O’Toole, 2016).