SCHIZOPHRENIA

Etiology & Statistics

- Schizophrenia is a mental disorder which does not have a clearly defined etiology, though many theories have been raised.
- Genetic studies indicate that there is a ten times greater incidence if one has a biological relative with the disorder.
- Research has demonstrated through brain imaging and post mortem evaluation that there have been abnormalities of the Limbic system, basal ganglia, and frontal cortex.

- Some abnormalities may lie in the fetal developemental period with abnormal cell migration.
- The time of year has surprisingly shown to affect the prevalence as well. According to Kaplan and Sacock those born in January through April in the northern hemisphere are at great risk.
- International geographic studies have shown an increased prevalence in various areas leading researchers to theorize infectious processes play a role.

Etiology & Statistics

- The incidence vary from 1.0% to 1.5% in the generalized population and all socioeconomic groups except within the industrialized countries there is a higher increase in lower socioeconomic groups. This is known as downward drift hypothesis.
- There appears to be equal distribution among men and women with the only variation in age of onset. Men tend to demonstrate schizophrenic symptoms earlier (15-25 year of age) than women (25-35 years of age).

Symptoms

- There are frequent prodromal behavioral symptoms experienced by patients with schizophrenia which include social withdrawal, loss of interest in school or work, deterioration in self care, anger outbursts, and bizarre behavior.
- Schizophrenia has what are called **positive symptoms** and **negative symptoms**.

Symptoms

Positive symptoms and Negative symptoms are described in the DSM-IV criteria as follows:

- **Positive symptoms** – excess or distortion of normal function. These would include psychotic symptoms (like paranoia and hallucinations).
- **Negative symptoms** – restriction of range and expression of normal emotion, fluency and productivity of thought and speech and initiation of goal directed behavior.
**Diagnosis**

**Diagnostic considerations must be met**

- **Criterion A:** 2 or more positive or negative symptoms (like delusions, hallucinations or grossly disorganized or catatonic behavior) each present for a significant portion of time during a one-month period or less if successfully treated.

- **Criterion B:** Social/occupational dysfunction

- **Criterion C:** Duration: at least 6 months

- **Exclusions:** Schizoaffective / Mood Disorder, contributing substance/general medical condition exclusion and pervasive developmental disorder

---

**Diagnosis**

**Criterion A:**

- Positive symptoms
  - Delusions – erroneous beliefs usually involving misinterpretation of perception or experiences (examples: paranoia, referential thinking)
  - Hallucinations – abnormal sensory perceptions (like visual or auditory hallucinations)

- Negative symptoms
  - Disorganized speech – loose associations, tangential or word salad
  - Grossly disorganized or catatonic behavior – includes agitation, catatonia, poor ADL’s and hygiene
  - Others – like affective flattening, alogia (reduced speech) or avolition (lack of ability to initiate or persist in goal directed activity)

---

**Diagnosis**

**Criterion B:** Social / occupational dysfunction

- A general decline of most major areas of personal functioning
- For a significant portion of the time since the onset of the disturbance one or more major areas of functioning such as work, interpersonal relations, or self care are markedly below the level prior to the onset of symptoms.

---

**Diagnosis**

**Criterion C:** Duration: at least 6 months

- Continuous signs of the disturbance persisted for at least 6 months
- This period must include at least one month of symptoms or less if successfully treated that meet Criterion A and may include periods of prodromal or residual symptoms.
- During these periods, signs of the disturbance may be manifested by only negative symptoms or two or more symptoms listed in Criterion A in an attenuated form.

---

**Diagnosis**

**Exclusions**

D. Schizoaffective and Mood Disorder exclusion: Schizoaffective Disorder and Mood Disorder with psychotic features have been ruled out because:

1) No major depressive, manic, or mixed episodes have occurred concurrently with active-phase symptoms or
2) If mood episodes have occurred during active-phase symptoms, their total duration has been brief, relative to the duration of the active and residual period.

---

**Diagnosis**

**Exclusions**

E. Substance/general medical condition exclusion: The disturbance is not due to the direct physiological effects of either of these (for example sedation)

F. Relationship to a Pervasive Developmental Disorder: If there is a history of autistic disorder or another pervasive developmental disorder, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least one month.
### Subtypes of Schizophrenia

There are subtypes of schizophrenia as listed:

1. **Paranoid type**
2. **Disorganized type**
3. **Catatonic type**
4. **Undifferentiated type**
5. **Residual type**

### Subtypes of Schizophrenia

- **Paranoid type** - (see also Positive symptoms)
  - Involves delusions and/or hallucinations which are persistent.
- **Disorganized** - erroneous beliefs usually involving misinterpretation of perception or experiences (usually paranoia, referential thinking)
- **Catatonic** - abnormal sensory perceptions (usually visual or auditory hallucinations, though there are others)

### Subtypes of Schizophrenia

- **Disorganized type** - (see also Negative symptoms)
- Disorganization is seen in speech, behavior, and associated with a flat or inappropriate affect.
- Disorganized speech – loose associations, tangential “word salad”
- Poor ADL’s and hygiene
- Avolition (the inability to initiate or persist in goal directed activity)

### Subtypes of Schizophrenia

- **Catatonic type** - peculiarities of voluntary movement like motor immobility with stupor.
- There may be excessive motor activity that appears purposeless and not influenced by external stimuli.
- Extreme negativism as demonstrated by goalless resistance to all instructions or maintenance of a rigid posture against attempts to be moved.
- Peculiarities of voluntary movement. Examples include may inappropriate or bizarre postures, stereotyped movements or prominent grimacing.
- Echolalia or echopraxia may or may not be present.

### Subtypes of Schizophrenia

- **Undifferentiated type** - Type of schizophrenia in which the symptoms meet Criterion A but are not met for the subtype of paranoid, disorganized or catatonic type.
- **Residual type** - Shows the absence of prominent delusions, hallucinations, disorganized speech, or catatonic behavior. There is evidence of the illness as seen by negative symptoms, specifically two or more as listed in the Criterion A for Schizophrenia.

### Subtypes of Schizophrenia

- **Schizoaffective Disorder** - demonstrates prominent psychotic features; however, it is closely related to the Affective Disorders as well. It is typically a period of time during which there is either Major Depression, a manic episode, or a mixed episode in conjunction with symptoms which meet Criterion A for Schizophrenia.
Differential Diagnosis

> Prior to determining the diagnosis of the above mental disorders, one must rule out a number of conditions.
> The differential diagnosis includes psychotic disorder due to a general medical condition/delirium or dementia.
> Others include substance-induced psychotic disorder or delirium, mood disorders with psychotic features, mood disorders with catatonic features, and brief psychotic disorder.

Treatment

Biopsychosocial

> Treatment for Schizophrenia and the related mental illnesses follows the same protocol as any other medical disorder treatment following the biopsychosocial process.
> The most common type of medications used to treat Schizophrenia are the neuroleptics. There are the dopamine receptor antagonists which are the older antipsychotics that have been used to treat psychotic symptoms for many years. Examples here would be haloperidol and chlorpromazine.
> However, there have been a number of side effects which have been very disturbing for patients as a result led to noncompliance on their part (like Tardive Dyskinesia and sedation to name but a few).

Treatment

The Atypical Antipsychotics

> The atypical antipsychotics include Clozauril and Risperidone, Olanzapine, Quetiapine, Ziprasidone and Aripiprazole.
> These represent a new class of medications in that they are effective in the treatment of Schizophrenia and help psychotic (positive) symptoms but also helpful with the negative symptoms.
> While it is beyond the course of this lecture it should be noted that they have characteristics of the older anti-psychotic medications without most of the side-effects though they have all been implicated in weight gain and associated problems.
> There are some qualities suggestive of the anti-depressant medications and they are very helpful with mood disorders.

Treatment

> Quetiapine has oral formulations only. It is generally well tolerated though frequent medication adjustments are often initially needed.
> Ziprasidone has both oral and IM forms and is not reported to cause weight gain or sedation.
> Aripiprazole is a new medication. It is oral and is not reported to cause weight gain or sedation.

Treatment

Biopsychosocial

> Various types of therapy, including behavioral, family-oriented, group, and individual psychotherapy may be helpful for patients with schizophrenia.
> Case management - the individuals will often need help with relatively common and complex problems (like housing and finances) is very common and useful.
> Efforts involve integrating their behavior and activities into society as much as possible, utilizing the previously mentioned therapies.
> In most cases no single intervention is satisfactory in producing results and the combination of interventions yields the best result. Hence the term biopsychosocial process.
In Conclusion

- Schizophrenia is a mental disorder which does not have a clearly defined etiology.
- Though it represents a small number of the population it is a severely disabling disorder with its symptoms grossly affecting function of the individual.
- Though there are several subtypes treatment is similar.
- Differential diagnosis is essential.
- Medications are important as are various psychosocial interventions.
- Continued research may help better define the etiology of schizophrenia in addition to the increased research in searching for better psychopharmacology.
A 27-year-old female is brought to the emergency ward by the local police because she has been harassing her neighbors. Her family arrives shortly afterward and appears very concerned. The police report that the young woman's apartment manager called because she was banging on all her neighbors' doors and screaming in the stairwell. Upon examining the patient's apartment, the police found the place to be filthy and malodorous, with rotting garbage and food in the kitchen. The windows were sealed and covered with dark curtains, and there were several televisions and computers in the living room, all turned on at the same time. The patient's family reports that for the past year or so she has seemed increasingly odd, dissociating herself from family activities, and she had given up a well-paying job as a computer system administrator. In addition, she had abruptly ended a long-term romantic relationship for no particular reason. On mental status examination the young woman is disheveled and wearing several layers of dirty clothes. She appears wary and guarded. Her speech is normal in rate, volume, and production. She is conversant, and explains that she has been defending herself against aliens who want to use her as a specimen. She believes that she began picking up on hidden transmissions in her E-mail at work, revealing an alien conspiracy, perhaps involving the CIA. She states that she left her job to monitor these hidden transmissions full time and that she has been hiding in her apartment because they know she is on to them. She ended her recent relationships because she felt that the aliens would harm the people she cared about. She denies substance use or any medical symptoms. She reports that she has been eating and sleeping well, and that her mood is good. She denies hearing voices. Diagnostic testing, including drug screen, CBC, chemistry panel, and brain MRI are all normal. The most likely diagnosis is:

a. Schizophrenia
b. Bipolar disorder
c. Major depression
d. Alcohol abuse
e. Paranoid personality disorder

The most likely subtype of schizophrenia in this patient is:

a. Paranoid
b. Catatonic
c. Disorganized
d. Undifferentiated
e. Residual

26. If the patient were suffering from a psychotic disorder due to substance abuse, which of the following substances might produce this syndrome?

a. Amphetamines
b. Benzodiazepines
c. Opiates
d. Nicotine
e. Caffeine

27. Which negative symptom of schizophrenia is most prominent in this patient?

a. Affective flattening
b. Alogia
c. Asociality
d. Atrophy
e. Avoidance

28. Which positive symptom of schizophrenia is most prominent in this patient?

a. Hallucinations
b. Delusions
c. Bizarre behavior
d. Dishevelment
e. Anxiety
An 18-year-old college student is brought to the emergency room by the campus police due to creating a disturbance on campus. On examination he has auditory hallucinations, agitation, and rapid, incoherent speech. The length of time that he has had the symptoms is unknown. Substance abuse history is unknown. The diagnosis could be all of the following except:

a. Schizophreniform disorder
b. Schizoaffective disorder
c. Generalized anxiety disorder
d. Bipolar disorder
e. Substance-induced psychotic disorder

The most effective agent for treating this condition would be:

a. Buspirone
b. Sertraline
c. Flumazenil
d. Dextroamphetamine
e. Olanzapine

The patient’s mother is contacted prior to initiating treatment. You explain that a psychosis is present and that initiation of an antipsychotic is the treatment. She says that she is worried about long-term side effects because an uncle of hers was treated with stilazine for many years and now has strange, slow movements of his upper body and mouth. Of the following antipsychotics, which has the highest risk of causing tardive dyskinesia?

a. Haloperidol
b. Risperidone
c. Clozapine
d. Quetiapine
e. Olanzapine

A 24-year-old man with a history of schizophrenia presents with a fever of 102°F, shakiness, chills, and rigors. He was well until a few days ago when he returned from an unplanned trip across the country by train. He had missed a weekly CBC that he had been receiving since beginning a new antipsychotic medication 6 weeks ago. A site CBC reveals a white blood cell count of 0.2. The most likely antipsychotic agent the patient has been taking is:

a. Risperidone
b. Olanzapine
c. Clozapine
d. Quetiapine
e. Thioridazine