



Schizophrenia and its Possible Cause

Why in News

Recently, the **Schizophrenia Research Foundation (SCARF)** and **Jeevan Stem Cell Foundation, Chennai** have carried out a pilot study on people of specific ethnicity with [schizophrenia](#).

- The study finds an **association of specific alleles** (variants of specific genes) **with the disease**.

Schizophrenia

- It is the descriptive term for a **group of psychotic disorders in which personal, social and occupational functioning deteriorate** as a **result of disturbed thought processes, strange perceptions, unusual emotional states, and motor abnormalities**.
- It is a **debilitating** (making someone very weak and infirm) disorder. The **social and psychological costs** of schizophrenia are **tremendous**, both to patients as well as to their families and society.
- **Onset:** It typically begins in **late adolescence** or **early adulthood**.
- **Symptoms:**
 - **Positive Symptoms:** These are **pathological excesses** or **bizarre additions** to a person's behaviour like delusions, disorganised thinking and speech, heightened perception and hallucinations and inappropriate affects.
 - **Negative Symptoms:** These are **pathological deficits** and include poverty of speech, blunted and flat affect (Showing less or no emotions), loss of volition (inability to start or complete a course of action) and social withdrawal.
 - **Psychomotor Symptoms:** Less spontaneous moves or making odd grimaces (extremely distorted and particular facial expression) and gestures.
- **Causes:**
 - **Schizophrenia's cause is not exactly known** yet. There are various studies among groups of varied ethnicities across the world, on the possible causes and other relations.
 - These **studies have shown associations of the disease with different alleles** related to the **Human Leukocyte Antigen (HLA)**.
 - HLA is an important part of the immune system and related to a **group of genes on chromosome six**.
 - HLA genes are **extremely variable** and are very **different across human populations**.
 - However, the **specific allele** that was found to be associated with schizophrenia **varied from group to group**.
- **Treatment:**
 - **Therapy and support** can help people learn social skills, cope with stress, identify early warning signs of relapse and prolong periods of remission.

Key Points

▪ Findings of the Current Study:

- It holds that HLA is important for the proper functioning of the immune system and its **variations can lead to immunological abnormalities.**
- In **autoimmune diseases**, when the body creates **antibodies against the NMDA receptors** in the brain, these antibodies disrupt normal brain signalling and cause brain swelling or encephalitis affecting both men and women and can lead to schizophrenia.
- The **N-methyl-D-aspartate (NMDA) receptor** is a glutamate receptor and ion channel protein **found in nerve cells** and is **important for memory functions.**
- Researchers found a **higher frequency of HLA class I alleles** in individuals with schizophrenia.
- Individuals carrying these alleles **could be susceptible** to schizophrenia.
- They also found a **negative correlation with some alleles** which were found in **lower frequency** in individuals with schizophrenia.
- These could be **protective alleles** in schizophrenia.
- For the first time, the **amino acids level in HLA molecules** among the patients were also studied.
- Researchers held that the **reasons or causes for schizophrenia are not entirely clear**, but **perhaps selection and 'memory' of past selection pressures** (infections) play a role in its onset.
- However, there is a need for further studies of the exact factors causing the disorder. The occurrence of different alleles itself is not a problem but finding the exact allele causing it, is a challenge.
- Earlier studies had indicated that **different alleles may be involved in different ethnic groups.** For example, studies in Saudi Arabia, Tunisia and Japan point to involvement of different alleles responsible for risk factor to schizophrenia.

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