I. INTRODUCTION:

ANTIPSYCHOTIC DRUGS

There are a range of medications that are used for some types of mental disorder. Antipsychotics are a group of medicines which are used for the treatment of mental health such as schizophrenia, or mania caused bipolar. They can also be used to treat severe depression and severe anxiety. Antipsychotics are also called as major tranquillizers. There are two main types of antipsychotic drugs:

1) Typical – These are older drugs. These are also called first-generation antipsychotics

2) Atypical – These are newer drugs. These are also called second-generation antipsychotics. They are available as tablets, capsules, liquids and depot injections (long-acting). They come in various different brand names.

Older antipsychotics are in use since the 1950s, while newer antipsychotics were developed in the 1970s onwards. It was originally thought that the newer medicines would have fewer side-effects than the older. But, we now know that they can also cause quite a few side-effects. They are a range of medications that are used for some types of mental distress or disorder mainly schizophrenia and manic depression (bipolar disorder). They can also be used to help severe anxiety or depression.

Schizophrenia: Schizophrenia is a mental disorder often characterized by abnormal social behaviour and failure to recognize what is real. Schizophrenia is a mental and complex illness that affects about 1% of the population in the world. Although family, twin and adoption studies have strongly supported that genetic factors play important roles in the etiology of schizophrenia, the patients’ shows mainly two types of psychotic symptoms: “positive” and “negative”. The positive symptoms include delusions, hallucinations, while the negative symptoms include social withdrawal with affective flattening, poor motivation, and apathy. These symptoms reflect a psychotic disturbance in schizophrenia patients.

Misconceptions about schizophrenia and facts:- People with schizophrenia are split personalities but the fact is that they are just away from the realities Schizophrenia is
rare but the fact is that it is observed one in hundred. People with schizophrenia are
dangerous but the fact is that they may be neither violent nor dangerous

**Early signs of schizophrenia:**

- Feeling extremely optimistic and irritable
- Sleeping very little but feeling highly energetic
- Jumping quickly from one idea to other
- Talking rapidly
- Fragmented thinking

**CHOOSING AN ANTIPSYCHOTIC DRUG** - It cannot be predicted that how well a
particular person will respond to a particular drug even whether a newer, or older drug,
will be more helpful. It can take time, negotiation and ‘trial and error’ to find the best
antipsychotic for a particular person.

**DRUG SELECTED FOR STUDY: OLANZAPINE AND PALIPERIDONE**

**NEED OF STUDY OF OLANZAPINE**

During the last six decades, lots of efforts have been made to discover effective
medicines for the schizophrenia. Currently, five atypical antipsychotic drugs (APDs)
such as clozapine and its four related drugs (olanzapine, quetiapine, risperidone and
ziprasidone) are the most frequently used treatments for schizophrenia in the world they
have important advantages symptoms, mood symptoms, improved tolerability and
apparent reduction of the risk of extra pyramidal side effects. Clozapine is a unique
antipsychotic drug. Patients with schizophrenia who showed no response to any other
antipsychotic drug treatments may still respond to clozapine.

**NEED OF STUDY OF PALIPERIDONE:** Schizophrenia requires consistent, long
treatment, it is very common to patients that they discontinue treatment. The
discontinuation result to disease progression, thus no adherence with treatment plays
major concerned. Paliperidone is approved for constant rate over twenty four hour
period. Study of paliperidone is necessary to explore the tolerability, safety and treatment response of flexible doses.

**OLANZAPINE:**

Structure:

![Olanzapine structure](image)

Chemical Class: Thiobenzodiazepine

Molecular Formula: C_{17}H_{20}N_{4}S

Melting Point: 195°C

**PALIPERIDONE**

Structure:

![Paliperidone structure](image)

Chemical Class: Benzioxazole

Molecular Formula: C_{33}H_{27}FN_{4}O_{3}

Melting Point: 168-173°C