



A COMPARATIVE STUDY ON EFFICACY OF ATYPICAL ANTIPSYCHOTICS IN THE MANAGEMENT OF POSITIVE AND NEGATIVE SYMPTOMS IN SCHIZOPHRENIA AT TERTIARY CARE HOSPITAL

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Abstract:

INTRODUCTION

Schizophrenia, it is a serious mental disorder which affects the person's ability to behave properly. It is characterized by an array of symptoms including delusions, hallucinations, disorganized speech or behavior, and impaired cognitive ability. People with this disorder loses touch with reality.

AIM AND OBJECTIVES

The main aim of the study is to compare the efficacy of the different Atypical antipsychotics in the management of Positive and Negative symptoms in Schizophrenia at Tertiary Care Hospital, Kurnool.

Here we will determine which drug is more effective to treat positive symptoms and which drug is more effective to treat negative symptoms.

METHODS

Total of 120 patients were included. A comparative study was performed. Statistical method such as ONE-WAY ANOVA TEST (i.e., F test) was performed by using PANSS

RESULTS AND DISCUSSION

Out of 120 patients: Baseline patient information is collected regarding the positive and negative symptoms and the score was evaluated by using the PANSS. Medication is prescribed according to the symptoms of the patient. The medication was prescribed for 2 weeks, after 2 weeks the patient should report to the doctor. Whether the symptoms tend to decrease or not it is evaluated by using PANSS and the readings are noted. If there is any necessity of increasing the dose it can be done according to the guidelines.

CONCLUSION

According to this study both Olanzapine and Quetiapine can treat positive symptoms as well as negative symptoms but these both drugs are more superior to treat positive symptoms whereas, Risperidone was used to treat positive symptoms only and Amisulpride was used to treat negative symptoms at low doses at higher doses Amisulpride can also treat positive symptoms

INDEXTERMS – SCHIZOPHRENIA, POSITIVE AND NEGATIVE SYMPTOMS SCALE (PANSS)

1. INTRODUCTION

Schizophrenia, it is a serious mental disorder which affects the person's ability to think, feel, and behave properly. It is characterized by an array of symptoms including delusions, hallucinations, disorganized speech or behavior, and impaired cognitive ability. People with this disorder lose touch with reality. They may hear voices which others can't. It carries a lifetime risk of approximately 1%. Early onset of the disease occurs between an age group of 15 to 30 years of age, and its chronic course makes this a particular disabling disorder for patients and their family. Schizophrenia symptoms are categorized into three they are **Positive symptoms, Negative symptoms, Cognitive symptoms**. It is a chronic psychiatry disorder with a heterogenous genetic and neurological background that influences early brain damage. It is not common as other mental diseases; approximately 7-8 individuals out of 1000 will have this disorder. People with schizophrenia often have problems like doing well in society, at work, at school, and in relationships. They might feel frightened and withdrawn and could appear to have lost touch with reality. Schizophrenia is a word used to describe a mental disorder which has a spectrum of symptoms including alterations in perception, thoughts, and sense of a self-decrease in violation, psychomotor slowing and displays of antisocial behavior. This lifelong disease can't be cured but can be controlled with proper treatment.

2. AIM AND OBJECTIVES

The main aim of the study is to compare the different the efficacy of Atypical antipsychotics in the management of Positive and Negative symptoms in Schizophrenia at Tertiary Care Hospital, Kurnool. The study entitled as comparative study on efficacy of atypical antipsychotics to manage Positive and Negative symptoms in patients with schizophrenia at Tertiary Care Hospital, Kurnool., Aims at achieving the objectives of:

- Determine the effectiveness of different atypical antipsychotics to manage Positive and Negative symptoms by using the PANSS (Positive and Negative Syndrome Scale) in Psychiatry Department at Tertiary Care Hospital, Kurnool.
- Here we will determine that which drug is more effective to treating Positive symptoms and which drug is more effective to treat Negative symptoms.

3. METHODOLOGY

PLACE OF STUDY: Government General Hospital, Psychiatry Department, Kurnool, 1000 bedded teaching Hospital.

PERIOD OF STUDY: The study period was 5 months i.e., from January 2024 to May 2024

STUDY POPULATION: 120 Patients fit into inclusion criteria, both males and females from the Psychiatry Department, Government General Hospital, Kurnool.

STUDY DESIGN: A comparative study

SOURCE OF DATA: Patient Data Collection Proforma, PANSS (Positive and Negative Syndrome Scale)

DATA COLLECTION PROFORMA INCLUDE: Demographic details, Chief complaints, ICD10 Diagnosis, Total duration illness, Family history, Personal history, Baseline treatment, 1st follow up, 2nd follow up, 3rd follow up, Treatment plan, PANSS

INCLUSION CRITERIA

- Patients diagnosed with only Schizophrenia were included in the study.
- Patients of age ≥ 18 years were included in our study.
- Both out patients and In patients were taken into consideration.
- Either gender is considered.
- Only Atypical anti psychotic drugs (olanzapine, Risperidone, Quetiapine, Amisulpride) were only taken in our study.

EXCLUSION CRITERIA

- Patients who were receiving medications other than Allopathic were excluded in our study.
- Patients of age > 60 years were excluded.
- Patients with other complicated diseases like Heart failure, Kidney failure were excluded.

4. RESULTS

A total 120 patients were enrolled in this study are presented to the outpatient as well as inpatient department.

4.1 AGE AND GENDER WISE DISTRIBUTION

A total of 120 patients are presented to outpatient and inpatient department, the percentage distribution of the study population showed those 49 (40.8%) females and 71(59.2%) males which are represented in the table. Total distribution of patients with age group shows that majority of patients were found in between the age group 28-37 years 43 patients (36%), followed by 18-27 years 27 patients (23%), 48-57 years 25 patients (21%), 38-47 years 24 patients (20%) were represented in table 4.1.

TABLE 4.1- AGE AND GENDER WISE DISTRIBUTION

GENDER	18-27 YEARS	28-37 YEARS	38-47 YEARS	48-57 YEARS	TOTAL
FEMALE	8	23	7	11	49
MALE	20	20	17	14	71
TOTAL	28	43	23	25	120

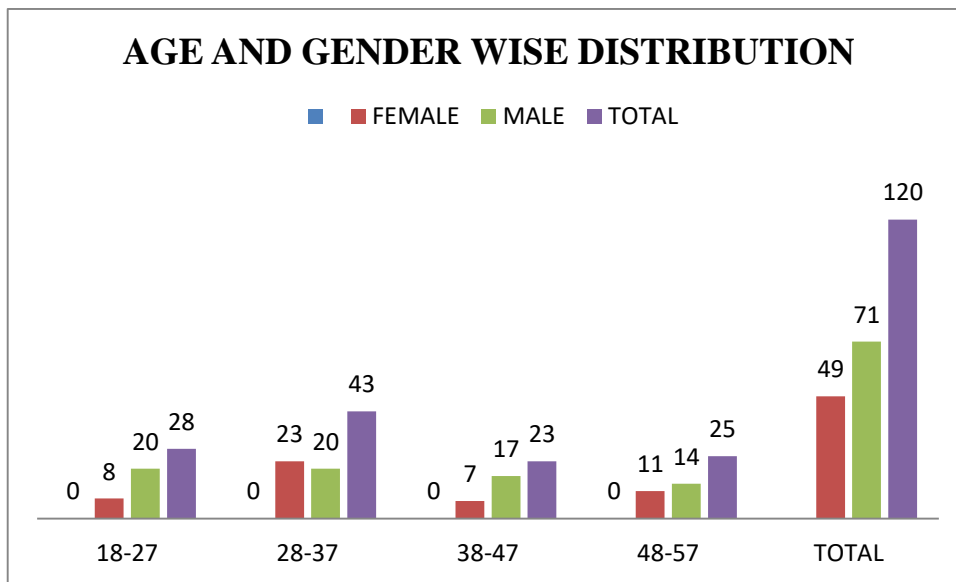


FIG 4.1 AGE AND GENDER WISE DISTRIBUTION

Results denote the effect of Drugs (Olanzapine, Quetiapine, Amisulpride, and Risperidone) on positive and negative symptoms of schizophrenia. The decrease in the score is denoted as improvement in the decrease of symptoms.

4.2 Effect of Olanzapine on Positive scale:

TABLE 4.2- EFFECT OF OLANZAPINE ON POSITIVE SCALE OF PANSS

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	PVALUE
Baseline	30	26.966	3.489	52.2645	<0.001
1 st followup	30	23.566	3.276		
2 nd followup	30	20.133	3.07		
3 rd follow up	30	16.366	3.899		

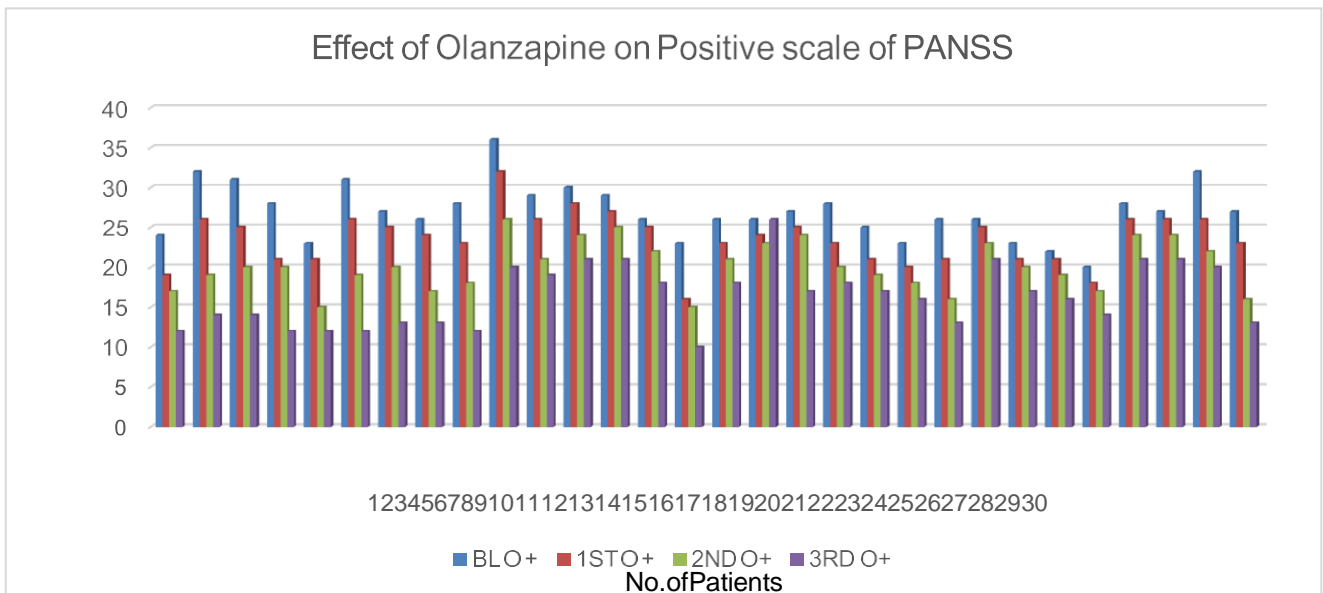


FIG 4.2-EFFECT OF OLANZAPINE ON POSITIVE SCALE OF PANSS

4.3 Effect of Olanzapine on Negative scale of PANSS

TABLE 4.3- EFFECT OF OLANZAPINE ON NEGATIVE SCALE OF PANSS

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	20.5	4.974	13.8967	<0.001
1 st followup	30	18.233	4.492		
2 nd followup	30	15.966	3.448		
3 rd follow up	30	14.166	2.913		

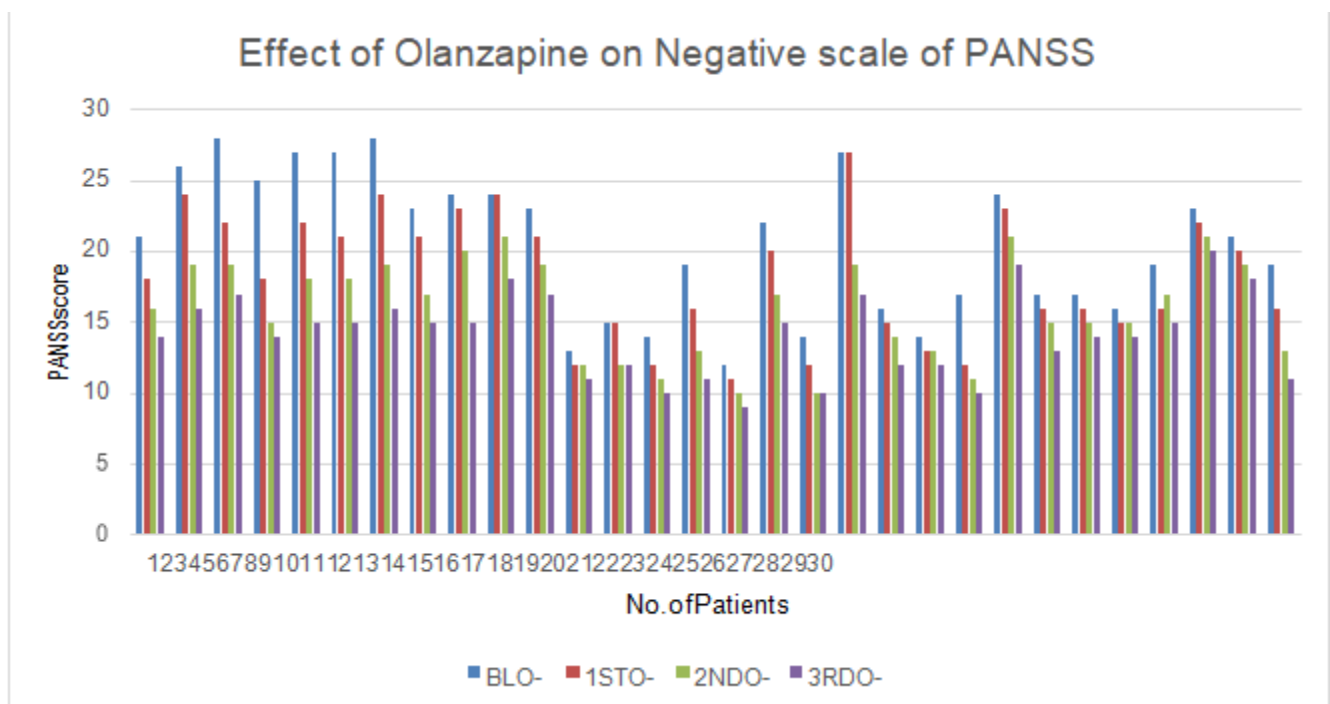


FIG 4.3EFFECT OF OLANZAPINE ON NEGATIVE SCALE

4.4 Effect of Quetiapine on Positive scale:

TABLE 4.4- EFFECT OF QUETIAPINE ON POSITIVE SCALE

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	28.633	4.139	47.1472	<0.001
1 st followup	30	25.166	3.948		
2 nd followup	30	21.0	4.185		
3 rd follow up	30	16.333	4.649		

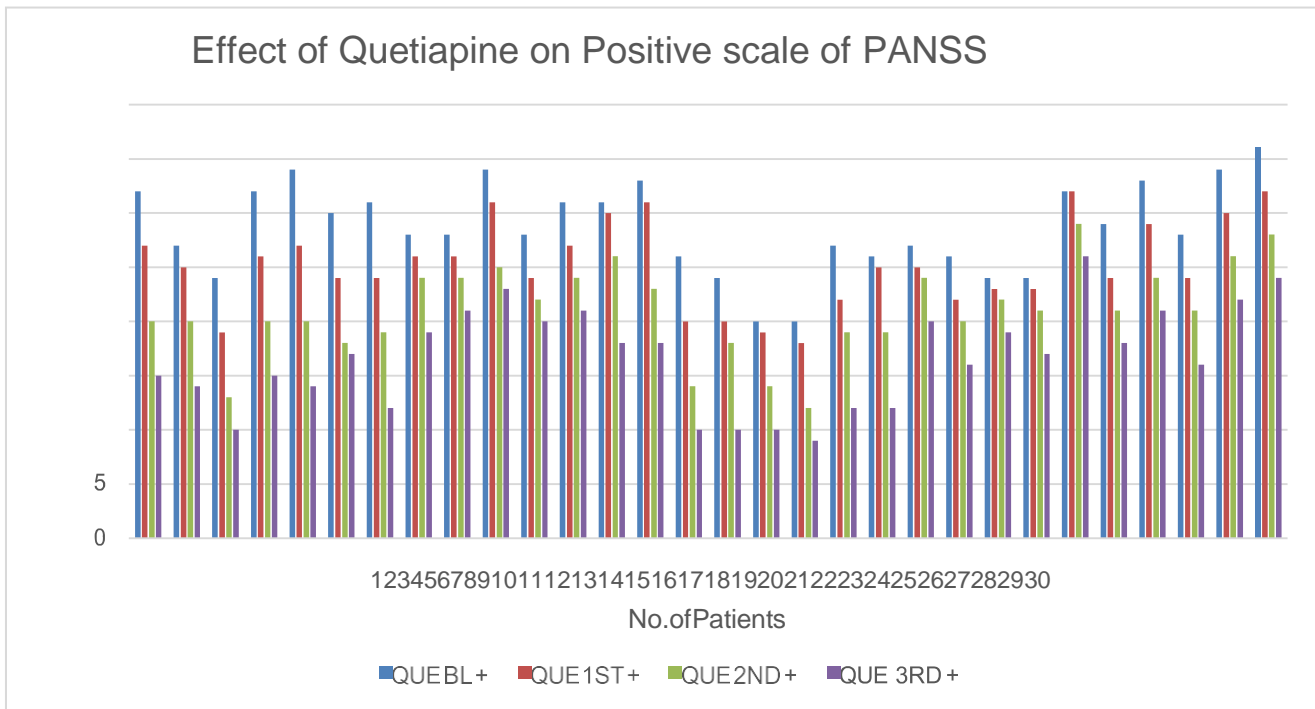


FIG 4.4- EFFECT OF QUETIAPINE ON POSITIVE SCALE OF PANSS

4.5 Effect of Quetiapine on Negative scale

TABLE 4.5- EFFECT OF QUETIAPINE ON NEGATIVE SCALE

GROUP	N (SAMPLE)	MEAN	STANDDDARD DEVIATION	FSTAT	P VALUE
Baseline	30	19.733	2.778	20.411	<0.001
1 st followup	30	18.9	2.783		
2 nd followup	30	17.0	1.505		
3 rd follow up	30	15.733	1.257		

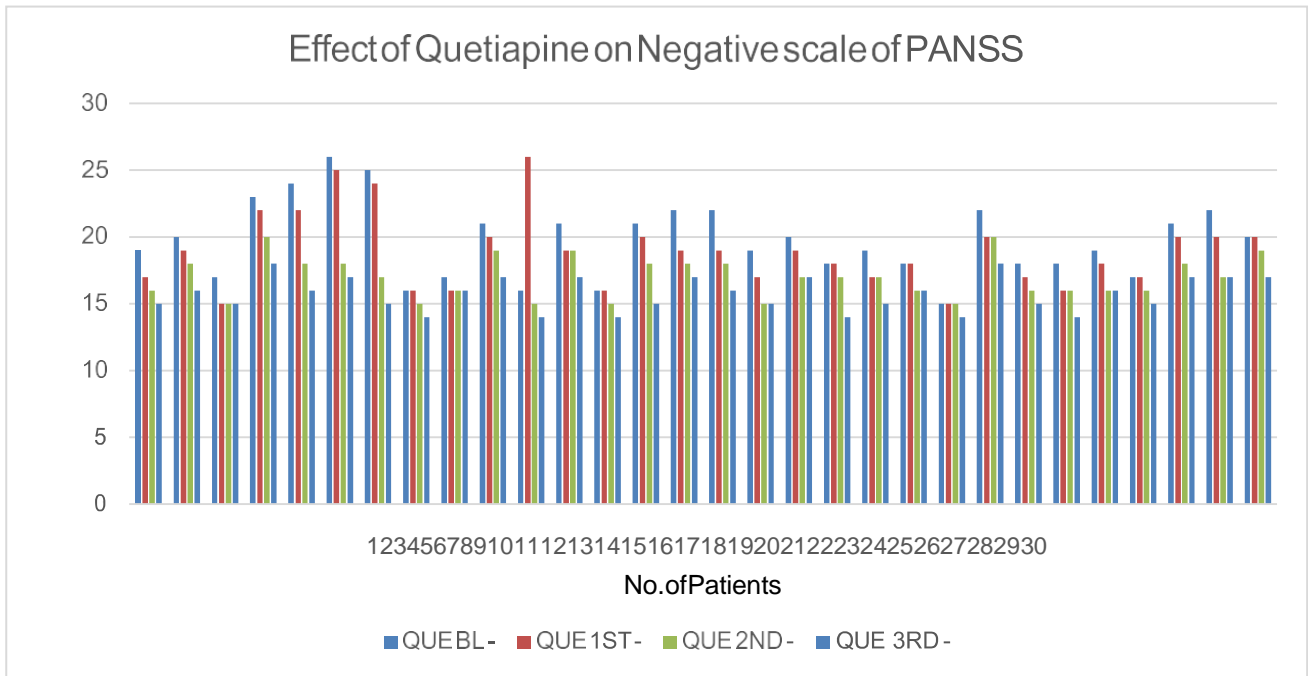


FIG 4.5- EFFECT OF QUETIAPINE ON NEGATIVE SCALE OF PANSS

4.6 Effect of Amisulpride on Positive scale:

TABLE 4.6- EFFECT OF AMISULPRIDE ON POSITIVE SCALE

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	21.032	3.321	9.03215	<0.001
1 st followup	30	19.838	3.001		
2 nd followup	30	18.677	2.495		
3 rd follow up	30	17.541	2.263		

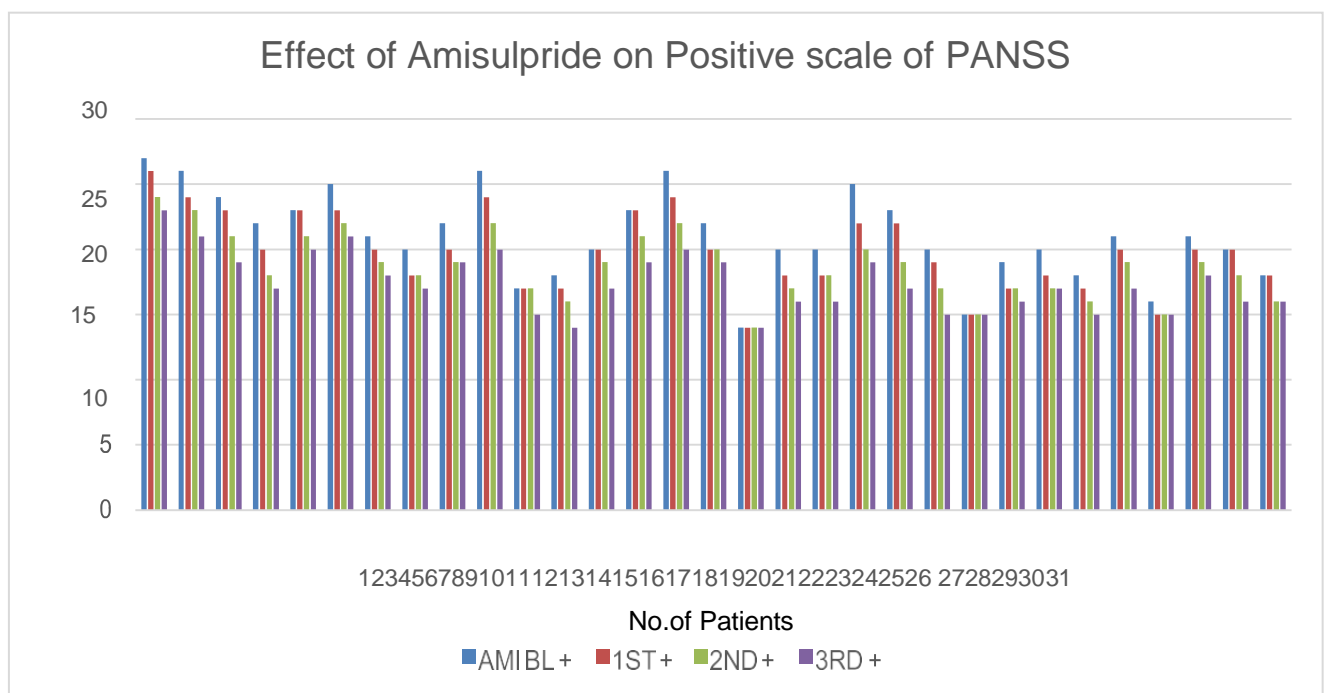


FIG 4.6- EFFECT OF AMISULPRIDE ON POSITIVE SCALE

4.7 Effect of Amisulpride on Negative scale:

TABLE 4.7- EFFECT OF AMISULPRIDE ON NEGATIVE SCALE

GROUP	N(SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	31.064	3.501	69.4036	<0.001
1 st followup	30	26.612	3.593		
2 nd followup	30	21.935	3.492		
3 rd follow up	30	19.129	3.222		

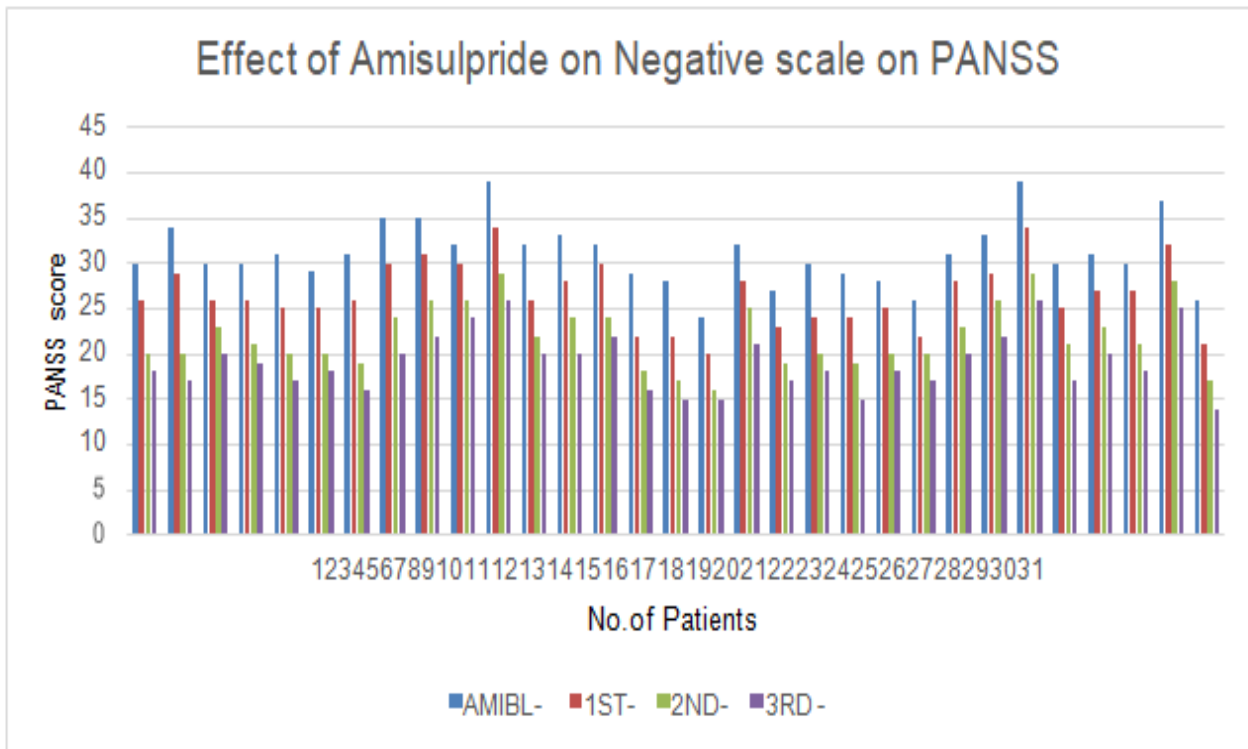


FIG 4.7 EFFECT OF AMISULPRIDE ON NEGATIVE SCALE ON PANSS

4.8 Effect of Risperidone on Positive scale:

TABLE 4.8 EFFECT OF RISPERIDONE ON POSITIVE SCALE

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	28.633	4.303	30.1858	<0.001
1 st followup	30	25.333	4.22		
2 nd followup	30	22.266	4.456		
3 rd follow up	30	18.433	4.368		

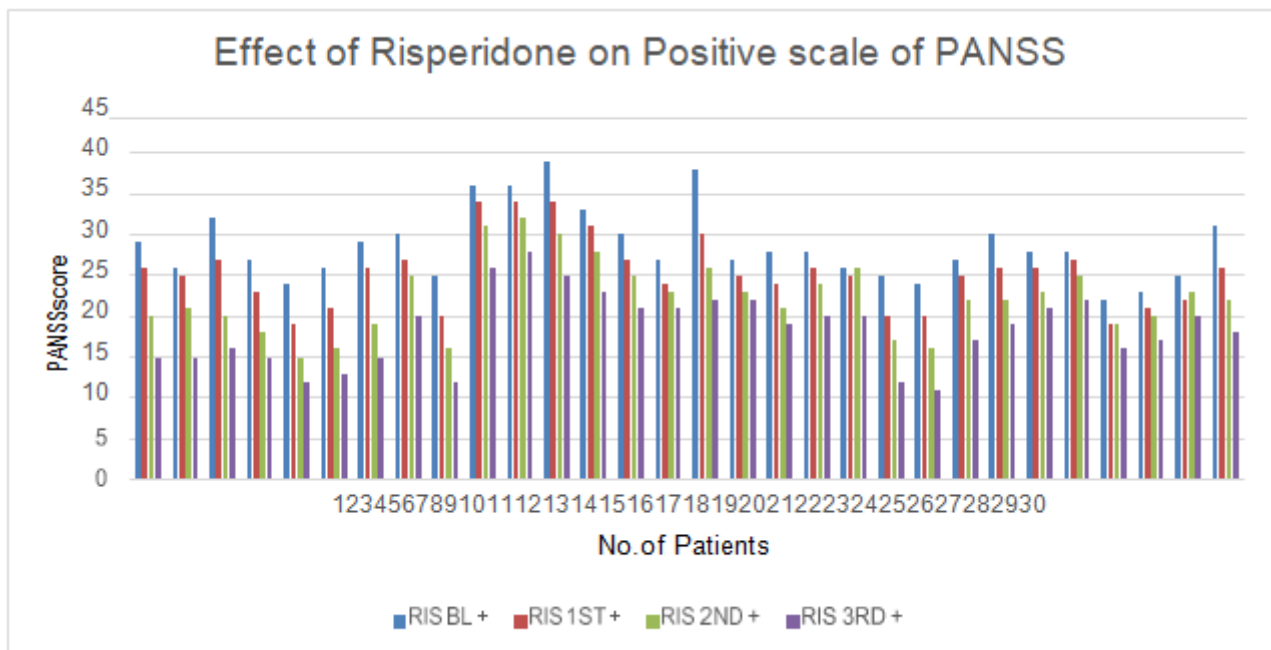


FIG 4.8 EFFECT OF RISPERIDONE ON POSITIVE SCALE OF PANSS

4.9 Effect of Risperidone on Negative scale:

TABLE 4.9 EFFECT OF RISPERIDONE ON NEGATIVE SCALE

GROUP	N (SAMPLE)	MEAN	STANDARD DEVIATION	FSTAT	P VALUE
Baseline	30	17.366	4.537	5.64079	0.001
1 st followup	30	16.233	4.423		
2 nd followup	30	14.566	3.49		
3 rd follow up	30	13.533	3.104		

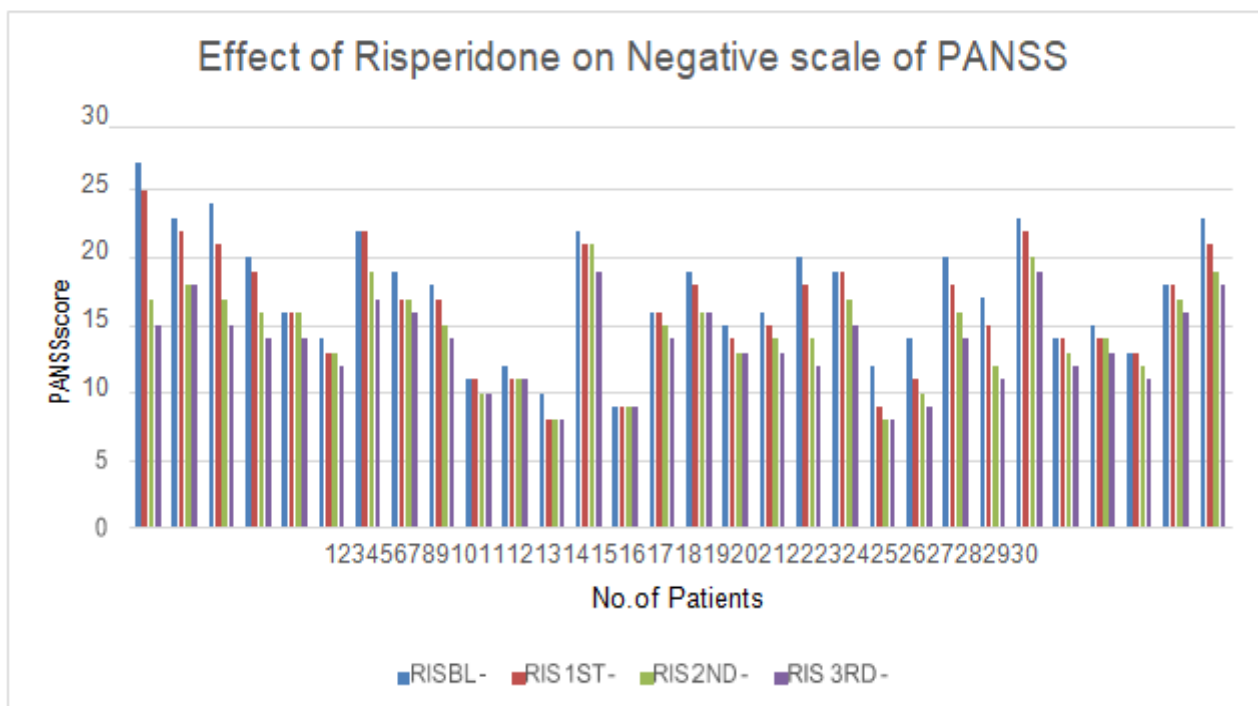


FIG 4.9 EFFECT OF RISPERIDONE ON NEGATIVE SCALE OF PANSS

4.10 PANSS RATING FORM

		Absent	Minimal	Mild	Moderate	Moderate severe	Severe	Extreme
P1	Delusions	1	2	3	4	5	6	7
P2	Conceptual disorganization	1	2	3	4	5	6	7
P3	Hallucinatory behavior	1	2	3	4	5	6	7
P4	Excitement	1	2	3	4	5	6	7
P5	Grandiosity	1	2	3	4	5	6	7
P6	Suspiciousness /Persecution	1	2	3	4	5	6	7
P7	Hostility	1	2	3	4	5	6	7
N1	Blunted affect	1	2	3	4	5	6	7
N2	Emotional withdrawal	1	2	3	4	5	6	7
N3	Poor rapport	1	2	3	4	5	6	7
N4	Passive or Apathetic social withdrawal	1	2	3	4	5	6	7
N5	Difficulty in abstract thinking	1	2	3	4	5	6	7
N6	Lack of spontaneity and flow of conversation	1	2	3	4	5	6	7
N7	Stereotyped thinking	1	2	3	4	5	6	7
G1	Somatic concern	1	2	3	4	5	6	7
G2	Anxiety	1	2	3	4	5	6	7
G3	Guilt feelings	1	2	3	4	5	6	7
G4	Tension	1	2	3	4	5	6	7
G5	Mannerisms and Posturing	1	2	3	4	5	6	7
G6	Depression	1	2	3	4	5	6	7
G7	Motor retardation	1	2	3	4	5	6	7
G8	Uncooperativeness	1	2	3	4	5	6	7
G9	Unusual thought content	1	2	3	4	5	6	7
G10	Disorientation	1	2	3	4	5	6	7
G11	Poor attention	1	2	3	4	5	6	7
G12	Lack of judgement and Insight	1	2	3	4	5	6	7
G13	Disturbance of volition	1	2	3	4	5	6	7
G14	Poor impulse control	1	2	3	4	5	6	7
G15	Preoccupation	1	2	3	4	5	6	7

G16	Activesocialavoidance	1	2	3	4	5	6	7
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5. DISCUSSION

The study was conducted in Psychiatry Department at Government General Hospital, Kurnool over a period of 6 months i.e., from December 2020 to May2021.

Schizophrenia is a chronic psychiatric disorder with a heterogeneous genetic and neurobiological background that influences early brain development and is expressed as a combination of psychotic symptoms such as hallucinations, delusions and disorganization and motivational and cognitive dysfunctions. Symptoms of schizophrenia are divided into three categories they are Positive symptoms, Negative symptoms, and Cognitive symptoms. In this study we were discussing about the management of Positive and Negative symptoms of schizophrenia by using the Atypical antipsychotics.

Out of 120 patients 30 patients received Olanzapine, 30 patients received Quetiapine, 30 patients received Amisulpride, and 30 patients received Risperidone respectively. The patients were evaluated as

- Baseline patient information is collected regarding the positive and negative symptoms and the score was evaluated by using the PANSS.
- Medication is prescribed according to the symptoms of the patient
- The medication is prescribed for 2 weeks, after 2 weeks the patient should report to the doctor
- If the symptoms tend to decrease or not it is evaluated by using PANSS and the readings are noted. If there is any necessary of increasing of dose it can be done according to the guidelines.
- 1st followup i.e., after 2 weeks from Baseline
- 2nd follow up after 3 weeks from 1st followup
- 3rd follow up after 4 weeks from 2nd followup. The patients were evaluated on PANSS (Positive And Negative Syndrome Scale)

Effect of Olanzapine on Positive and Negative symptoms:

- The baseline score percentage of Olanzapine on positive scale is 55% and it is reduced to 29.8% at 3rd follow up.
- The baseline score percentage of Olanzapine on negative scale is 41.83% and it reduced to 33.86% at 3rd follow up.
- From the above information in our study, Olanzapine can treat both positive and negative symptoms but when compared with negative symptoms percentage Olanzapine has higher efficacy to treat positive symptoms than negative.

Effect of Quetiapine on Positive and Negative symptoms:

- The baseline score percentage of Quetiapine on positive scale is 58.34% and it is reduced to 27.99% at the 3rd follow up.
- The baseline score percentage of Quetiapine on negative scale is 40.27% and it is reduced to 39.06%
- From the above information in our study, Quetiapine is more effective to treat positive symptoms than negative symptoms.

Effect of Amisulpride on Positive and Negative symptoms:

- The baseline score percentage of Amisulpride on positive scale is 42.92% and it is reduced to 40.86% at the 3rd follow up.
- The baseline score percentage of Amisulpride on negative scale is 63.39% and it is reduced to 30.17%
- From the above information in our study, Amisulpride is more effective to treat negative symptoms than positive symptoms.

Effect of Risperidone on Positive and Negative scale:

- The baseline score percentage of Risperidone on positive scale is 58.43% and it is reduced to 31.56% at the 3rd follow up.

- The baseline score percentage of Risperidone on negative scale is 35.44% and it doesn't change at all.
- From the above information in our study, Risperidone is used to treat positive symptoms.

6. CONCLUSION

In this study atypical antipsychotics were used to treat Positive and Negative symptoms of schizophrenia. The drugs that were used in this study are Olanzapine, Quetiapine, Amisulpride and Risperidone. Olanzapine treats both positive and negative symptoms, but the decrease of positive symptoms is more superior to the negative symptoms. Quetiapine treats both positive and negative symptoms, but it tends to treat positive symptoms more effectively than negative symptoms. Amisulpride treats negative symptoms at low doses but at higher doses it can also treat the positive symptoms as well. Risperidone treats positive symptoms.

According to this study both Olanzapine and Quetiapine can treat positive symptoms as well as negative symptoms but these both drugs are more superior to treat positive symptoms whereas, Risperidone was used to treat positive symptoms only and Amisulpride was used to treat negative symptoms at low doses at higher doses amisulpride can also treat positive symptoms.

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