ORIGINAL RESEARCH

A study on Clinical profile of cases of schizophrenia

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ABSTRACT
As extrapyramidal side effects of typical antipsychotics compelled clinicians to move towards the atypical ones, these newer, so- called novel agents have brought with them a gamut of adversities,the various metabolic side effects. The study will include 120 patients, both indoor and outdoor, suffering from schizophrenia, diagnosed using the ICD-10 criteria. The patients will be grouped into three categories, i.e. control group and two study groups, control group having 30 patients and study groups with 45 patients each. The average weight gains in the three drug groups show a mean of 61.8 in the Haloperidol group with a mean average increase of 2.9 kgs over a period of 18 months, as compared to mean increases in weight with Olanzapine being 14.6 kgs and for Risperidone 10.9 kgs. All the three groups have significant p-values(<0.0001) for increase in weight over the 18 month period.

Keywords: Schizophrenia, Risperidone, Olanzapine

INTRODUCTION

Old is the existence of psychosis and varied are its presentations. Efforts to understand this enigma, as well as to treat the sufferer have been puzzling humanity since time as old as the problem itself. So far, trials have been done with innumerable options including a number of pharmacological agents starting from those of ancient days through typical antipsychotics to atypical ones in later times. But problems came hand-in-glove with each of these options. As extrapyramidal side effects of typical antipsychotics compelled clinicians to move towards the atypical ones, these newer, so- called novel agents have brought with them a gamut of adversities,the various metabolic side effects.[1]

Prior to 1952, there was no generally applicable, effective pharmacological treatment of psychotic illness. In the early 1920s, sleep treatment with barbiturates was introduced. Insulin coma therapy was introduced by Manfred Sakel in 1927. Prefrontal lobotomy was proposed as a treatment for serious mental illnesses by Egas Moniz in 1935. The use of frontal lobotomy was common prior to the introduction of effective antipsychotics. Psychosurgery was abandoned as a treatment for schizophrenia after the introduction of effective antipsychotic medications. Convulsive therapies were developed after it was observed that some patients improved after a seizure. Drugs such as camphor and pentylenetetrazole were used initially to induce seizures but were abandoned after UgoCerletti and LucioBini proposed the use of electroconvulsive therapy in 1937.[2,3]

The first effective antipsychotic medications were probablyderived from extracts of the rauwolfia plant. Reserpine, the most potent of the rauwolfia alkaloids, was isolated in India in 1931 by Drs. Salimuzzaman Siddiqui and RafatHussain Siddiqui. Almost around the same time Drs. GananathSen and Kartick Chandra Bose reported its effective use in treatment of psychosis.[4]

The discovery of chlorpromazine in the early 1950s by Charpentier may be the most important single contribution to the treatment of psychiatric illness. Laborit, a surgeon in Paris, noticed that administering chlorpromazine to patients prior to surgery resulted in an unusual state in which they seemed less anxious regarding the procedure. In 1952 he convinced Jean Delay and Pierre Deniker and other psychiatrists to administer chlorpromazine to psychotic and excited patients. Chlorpromazine was effective in reducing hallucinations and delusions as well as excitement. It also caused adverse effects that resembled Parkinsonism.[5]

Subsequently, thioridazine, fluphenazine, haloperidol and other first generation antipsychotics were developed. All of these agents used to act through the same Dopamine D2 receptor blockade, and though they differed in their potency and their adverse effect profiles, they differed little in terms of effectiveness.[6] Clozapine, thefirst effective antipsychotic with negligible extrapyramidal side effects was discovered in 1958 and first studied in the 1960s. Risperidone, olanzapine, quetiapine, ziprasidone and other agents discovered subsequently with affinity for both dopamine and serotoninreceptorsexhibitedminimalextrapyramidalsideeffects.These newer agents came to be known as the second-generation antipsychotics and gradually replaced largely older drugs as the standard treatments for psychoses.[7,8]

METHODOLOGY

INCLUSION CRITERIA

1. Adult males/females of age between 18 and 60 years, who are cases of schizophrenia diagnosed as per the ICD-10 criteria.
2. Only physically active patients will be included (patients are considered to be physically active if they regularly engaged in an aerobic type of activity at least twice per week for 20 min; these these activities included walking, jogging, swimming or garden/yard work).

EXCLUSION CRITERIA

1. Patients who had received prior antipsychotic medication in the last 6 months.
2. Patients having any of the five features of metabolic syndrome, patients having any type of cardiovascular disorder, whether under treatment or not, and known patients of diabetes (even if having fasting blood sugar controlled below 110 mg/dl by any diabetic medication) will be excluded.
3. Patients with history of co-morbid substance abuse, pregnant patients, patients having family history of diabetes and patients having co-morbid chronic medical illness will also be excluded.

PROCEDURE

All new persons attending out- patient department with the diagnosis of first episode drug naive schizophrenia as per ICD-10 diagnostic criteria. Metabolic parameters like BMI, Waist/Hip ratio, Lipid Profile, Fasting blood sugars, and Blood Pressure will be taken before onset of drug treatment and after 18 months.

The study will include 120 patients, both indoor and outdoor, suffering from schizophrenia, diagnosed using the ICD-10 criteria. The patients will be grouped into three categories, i.e. control group and two studygroups., control group having 30 patients and study groups with 45 patients each.

Thirty patients will be given conventional antipsychotics and 90 will be given second-generation antipsychotics, including risperidone and olanzapine.

RESULTS

Table 1: Age distribution of Haloperidol group

Age (in Years)	No. of Subjects	Percentage%
19 to 27	9	30.00
28 to 37	6	20.00
38 to 47	6	20.00
48 to 57	5	16.67
58 to 66	4	13.33
Total	30	100.00

Table 2: Age distribution of Olanzapine group

Age (in Years)	No. of Subjects	Percentage%
18 to 26	17	40.48
27 to 35	11	26.19
36 to 44	2	4.76
45 to 53	6	14.29
54 to 62	4	9.52
63 to 71	2	4.76
Total	42	100.00

Table 3: Age distribution of Risperidone group

Age (in Years)	No. of Subjects	Percentage
19 to 27	14	34.15
28 to 36	6	14.63
37 to 45	7	17.07
46 to 54	7	17.07
55 to 63	0	0.00
64 to 71	7	17.07

Total	41	100.00

The gender distribution in three groups, haloperidol with 33.4% females and 66.4% males; olanzapine with 52.4% females and 47.6% males; risperidone with 41.5% females and 58.5% males. The p value for gender distribution is p= 0.262. Statistically not significant, implying that there is no gender bias in the sample collection.

Table 4: The association between genders for the drugs haloperidol, olanzapine and risperidone

Gender	Male	Female	Total	P-value
Haloperidol	20	10	30	
Olanzapine	20	22	42	0.262
Resperidone	24	17	41	
Total	64	49	113	

Socioeconomic status was classified into lower,middle and upper and thedistribution amongst the groups was statistically not significant with a p value,p = 0.237.

Table 5:Association between socio drug groups economic statuses for the three

Socio-economic status	Lower	Middle	Upper	Total	P-value
Haloperidol	18	10	2	30	
Olanzapine	16	20	6	42	0.237
Resperidone	14	22	5	41	
Total	48	52	13	113	

Table6:ComparisonbetweenbaselineandAfter18monthsfortheparameterweight (in Kgs) among thegroups Haloperidol,Olanzapine andRisperidone.

Groups	Minimum	Maximum	Mean	Sd	P-value
Hal - bl	45	78	58.87	9.73	
Hal- a18m	46	89	61.8	11.45	<0.0001
Ol -bl	47	76	59.05	7.77	
Ol- a18m	53	94	73.62	9.43	<0.0001
Res -bl	50	79	60.88	7.43	
Res- a18m	53	93	71.83	8.82	<0.0001

Table 7:Comparison between baseline and After 18months for theparameterBMIamongthegroupsHaloperidol,OlanzapineandRisperidone.

Groups	Minimum	Maximum	Mean	Sd	P-value
Hal -bl	18	27.6	20.96	2.44	
Hal- a18m	18.4	32	22.02	3.35	<0.0001
Ol -bl	16.6	26.9	21.54	2.21	
Ol- a18m	19.4	33.3	26.91	3.07	<0.0001
Res -bl	19.1	27.6	22.75	2.03	
Res- a18m	20.1	33.2	26.92	3.12	<0.0001

DISCUSSION

Comparison between the metabolic derangements starting from parameters weight and BMI to changes in blood pressures all show significant changes in both the atypical drugs Olanzapine and Risperidone. The derangements in inter-group comparisons between Olanzapine(26%) and Risperidone(22%) again show greater derangements with Olanzapine comparatively for overall development of Metabolic syndrome.[9]

The average weight gains in the three drug groups show a mean of 61.8 in the Haloperidol group with a mean average increase of 2.9 kgs over a period of 18 months, as compared to mean increases in weight with Olanzapine being 14.6 kgs and for Risperidone 10.9 kgs. All the three groups have significant p-values(<0.0001) for increase in weight over the 18 month period. Previous studies on antipsychotic use leading to weight gain show rapid increases in weight within the first few months of initiating therapy with atypical drugs, that may not reach a plateau even after 1 year of treatment. In one prospective,double blind study, olanzapine was found to increase weight twice as that of Risperidone.[10]

Mean changes in BMI over the 18 months period is also significant with a p-value <0.0001, for all the three drug groups, more so again for the atypicals compared to haloperidol. Previous similar studies show large amounts of intra-abdominal fat have been found to be associated with adverse metabolic

consequences. Limited data suggest that in humans, mostof theweight gained is fat. One study found that peoplewith schizophrenia have more than three times as much intra-abdominal fat as controls matched for age, gender and lifestyle and that 6 months oftreatment with either olanzapine or risperidone, although increased body mass index, did not significantly increase visceral fat stores.[11,12]

CONCLUSION

Atypical antipsychotic drugs both risperidone and olanzapine cause significant rise in weight and body mass index.

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