COMPARISON OF THREE TREATMENT REGIMES IN SCHIZOPHRENIA[1]

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SUMMARY

90 schizophrenic patients in three regimes of thirty patients each, were treated for a period of three weeks with haloperidol alone, E.C.T. alone and E.C.T.+haloperidol in combination respectively. Rating them on R. P. scale (Rockland and Pollin, 1965) & Disability Rating Scale (Gautam, 76) showed that the E.C.T.+haloperidol receiving group was significantly better on several measures on day 8 & day 15 and also had an earlier onset of beneficial responses on "Affect & Mood" & on scores of "General appearance and behaviour". However, at the end of three weeks these differences disappeared and the three groups did not differ significantly.

Cerletti and Binni (1938) produced therapeutic fits by passing an electric current through two electrodes placed on forehead and a comparatively safe, convenient and painless method of convulsive therapy was made available.

The role of electric shock therapy in affective disorder is relatively an established one but its role in treatment of schizophrenic illnesses is still not very clear. Part of the cloudiness comes from conflicting opinions based on personal experiences or uncontrolled or relatively retrospective studies. But it is certain that with the advent of neuroleptics, E. C. T. as a treatment in schizophrenia was pushed down as a preferred treatment.

Sargent and Slater (1963) held that E. C. T. should be given concurrently with the drugs right from the beginning. May (1968) demonstrated that E. C. T., if given alone, though more effective than milieu therapy or psychotherapy was considerably less effective than either drug therapy or drug therapy plus psychotherapy. Unfortunately May (1968) has not addressed himself to the more pertinent question of the superiority of E. C. T. and drug combination over drugs alone.

It is said that for acutely disturbed hospitalised schizophrenic patients the drugs are the most effective treatment but whether adding E. C. T. to drugs is beneficial is not very clear. Klein & Davis (1969) advised E. C. T. if there is a lack of response to psychotropic drugs after six weeks. Such a course would be unadvisable if E. C. T. and drugs act synergestically.

The question whether adding E.C. T. to neuroleptic drugs has any superiorty over drugs alone or E. C. T. alone has not been paid much attention. Janakiramaiah *et al.* (1981) compared E. C. T., chlorpromazine combination with chlorpromazine only and concluded that E. C. T. receiving group was significantly better on several measures at second week and also had an earlier onset of beneficial responses on affect and mood. However, at the end of six weeks these differences disappeared and on clinical global impression of improvement the two groups did not differ significantly.

COMPARISON OF THREE TREATMENT REGIMES IN SCHIZOPHRENIA Studies on the effect of various treatment regimes on Psychotic symptoms and Psychiatric Disability are very few. The present study is an attempt in this direction and has the following aims.

1. Comparison of effect of E. C. T., E. C. T. with Haloperidol and haloperidol alone on Psychotic Symptoms.
2. Comparison of effect of E. C. T., E. C. T. with Haloperidol and haloperidol alone on Psycniatric disability.

MATERIAL AND METHODS

To fulfil above aims a prospective study was conducted at Psychiatric Centre Jaipur. The study group comprised of 90 schiozphrenic patients, which included 30 patients who received only E. C. T. (Direct Method), two more group of equal number of patients having similar illness characteristics and symptomatology were included for the purpose of comparison out of which one group received only haloperidol (15 m.g. in divided doses) and the other received haloperidol (15m. g. in devided doses) + E. C. T. (Direct Method). The patients were randomly assigned to one of the three treatment regimes.

The following criteria were adopted for taking cases.

1. Definite diagnosis of Schizophrenia according to ICD-9 by two qualified Psychiatrists independently (agreement was 98%).
2. Age range between 18 to 50 years.
3. Cases having no organic pathology.
4. Cases having no history of indulgence in intoxication since 6 months.
5. Not having affective illness.

As research tool, a proforma was specially designed to carry out this study. It comprised of identification data, socio-demographic data, personal characterstics including premorbid personality, characterstics of illness observed by Psychiatrists. Psychiatric Disability Rating scale

(Gautam, 1976). Symptom Rating scale in Psychotic Patients (Rockland and Pollen, 1965) and Composite Diagnostic Checklist of Schizophrenia (Overall et al., 1979).

After preliminary screening of the patients who had been diagnosed as schizophrenics were sent for routine investigations like total leucocytic count, Differential Leucocytic Count, Erythrocytic Sedimentation Rate, Haemoglobin estimation, urine examination & Electro Cardiogram. In cases where some organic pathology was suspected, tests like V. D. R. L., E. E. G., Skiagram and other relevent tests were carried out and proved organic cases were excluded from the study.

Assessment: The Psychiatric condition of the patients was assessed on Rockland (1965) Symptom Rating scale on Psychotic patients and Psychiatric Disability Rating scale (Gautam, 1976). Psychotic symptom rating scale has 16 items. The first ten of them are bipolar and was shown to give a reliable and valid measure of the Psychotic Symptom of schizophrenic patients. The assessment on this scale was done initialy on day 8, then day 15 and on day 22. The person making the assessment remained blind to the patients treatment. Psychiatric Disablity Rating scale has 15 items and it is a 4 point scale from 0 to 3, 0-no disability, 1-mild disability, 2-moderate disability, 3-severe disability. The assessment was done similarly on day 8, then on day 15, and on day 22.

To determine the significance of differences among the three treatment groups with respect to changes in the scores of Rockland Psychotic Scale & Disability Rating Scale from initial to day 8, day 15 and day 22. Analysis of covariance-one way classification was used. Secondly the significance of change within batch of two groups compared to initial scores was

determined by D. R. T. test (Dunken range test).

OBSERVATIONS

From the observation made in the present study it becomes evident that all the three regimes are effective in the treatment of schizophrenia. There appears to be some differences in rate of recovery and the effect on specific areas of mental state.

From table 1 it can be inferred that total (positive & negative) initial scores on Psychotic Symptom Rating scale of all the three groups are similar indicating that the groups had similar severity of illness before the commencement of therapy. With one week treatment there is reduction in scores of patients of all the three groups but the group receiving combination (drug + E. C. T.) had considerably less score (p < .001 in positive scores and p < 0.01 in negative scores). The same trend continues in the second week, however, by the end of three weeks all the three groups had similar scores indicating that the amount of reduction in severity of symptoms at the end of three weeks times out to be the same with any of the three treatment regimes while the global effect of combined (E. C. T.+Drug) is quicker than the other two regimes.

While examining the effects of three treatment regimes on various areas of mental state i. e. General appearance and behaviour, Thought and Thought processes & Affect and mood (Tables 2, 3, 4) it has

TABLE 1. *Differences among the three groups on whole scale positive and negative mean scores on Rockland Psychotic Symptom Rating Scale.*

Variable	Initial score	Score on day 8	Score on day 15	Score on day 22
Total positive scores				
E.C.T.+Drug	44	17.3	10.2	5.9
E.C.T. alone	44.3	27.3	15.6	7.7
Drug alone	43.0	31.9	19.3	8.7
$F_{2,87}$	0.73	9.48	4.11	2.56
p	N.S.	.001	.05	NS
Total negative scores				
E.C.T.+Drug	25.04	10.1	4.8	3.5
E.C.T. alone	23.8	16.8	7.2	4.7
Drug alone	23.2	20.3	12.0	7.0
$F_{2,87}$	.62	5.71	5.26	3.45
p	NS	<.01	<.01	<.05

TABLE 2. *Differences among three treatment groups on mean scores of "General appearance"*

Variable	Initial score	Scores on day 8	Scores on day 15	Scores on day 22
Positive score				
E.C.T.+Drug	10.3	4.0	1.6	1.2
E.C.T. alone	11.3	5.1	4.5	1.5
Drug alone	11.6	5.5	5.5	1.5
$F_{2,87}$	0.57	1.02	3.98	.33
p	NS	NS	0.5	NS
Negative score				
E.C.T.+Drug	19.9	7.9	4.0	3.3
E.C.T. alone	18.5	14.0	5.7	4.0
Drug alone	18.1	15.4	8.4	5.8
$F_{2,87}$	0.37	3.88	3.37	1.62
p	NS	<.05	<.05	NS

TABLE 3. *Differences among the three groups on mean scores of "Thought & Thought processess"*

Variable	Intial score	Score on day 8	Score on day 15	Score on day 22
Postive *Score*				
E.C.T. + Drug	28.7	12.5	7.8	4.3
E.C.T. alone	28.2	20.0	9.3	5.8
Drug alone	26.0	22.0	10.6	6.0
$F_{2,87}$	0.39	3.17	2.27	2.66
p	NS	<05	NS	NS

TABLE 4. *Differences among the three groups on mean scores of "Affect & Mood"*

Variables	Initial score	Score on day 8	Score on day 15	Score on day 22
Positive score				
E.C.T.+Drug	5.0	1.8	.8	.4
E.C.T. alone	4.8	2.2	1.8	.8
Drug alone	5.4	4.4	3.2	1.2
$F_{2,87}$	.39	3.64	5.23	3.19
p	NS	.05	.01	.05
Negative score				
E.C.T.+Drug	5.14	2.2	.8	.2
E.C.T. alone	5.3	2.8	1.5	.7
Drug alone	5.1	4.9	4.0	2.2
$F_{2,87}$	0.23	3.17	5.02	3.51
p	NS	.05	.01	.05

been observed that though all these areas show significant improvement with all the three regime by the end of three weeks, there is considerable effect with combined treatment on negative scores of General appearence and behaviour (i. e. reduced motor activity, decreased facial expression, non-involvement with examiner, neglected appearence and dress & reduced speech etc.)in the very first week of the treatment, while this comes later with the other two regimes (Table 2). The effect on "Affect and mood" of the treatment regimes (Table 4) shows that the combined treatment is most effective on day 8, drug alone being not so effective on day 8 but when compared the scores of initial v/s day 15 (Table 6) all the three groups show significant decrease in the positive scores of affect and mood while the negative scores of affect and mood show significant reduction only by the end of 3 weeks. The effect on thought and thought processes (Table 3) is very quick with the combined regimes (on day 8)as compared to other two regimes (day 15).

Looking at the initial, day 8, day 15 and day 22 scores on Psychiatric Disability Rating Scale (Table 5) it is evident that disability cause, because of psychiatric illness, was also of similar nature since there was no statistical difference in the initial mean scores. On day 8 assessment, the combined (E. C. T.+Drug) treatment has shown a comparatively rapid reduction of psychiatric disability. However disability become less with other two treatment regimes also. By the end of three weeks

TABLE 5. *Scores on Disability Rating Scale.*

Variable	Initial score	Score on day 8	Score on day 15	Score on day 22
E.C.T.+Drug	66	24	8	3
E.C.T. alone	64	32	16	4
Drug alone	62	36	17	8
$F_{2,87}$	1.19	3.58	4.92	6.02
p	NS	.05	.01	1.01

TABLE 6. *Change on total scores & its scores on different variables of Psychotic Symptom Rating Scale from initial scores with in group and over time.*

Variable	Initial v/s day 8	Initial v/s day 15	Initial v/s day 22
Total positive score			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.001	<.001	<.001
Drug alone	<.001	<.001	<.001
Total negative score			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.001	<.001	<.001
Drug alone	<.05	<.001	<.001
Score on mood			
Positive score			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.05	<.05	<.001
Drug alone	<.10(NS)	<.05	<.001
Negative score			
E.C.T.+Drug	<.01	<.001	<.001
E.C.T. alone	<.01	<.001	<.001
Drug alone	<.10(NS)	<.10(NS)	<.01
Appearence & Behavior			
Positive score			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.01	<.01	<.001
Drug alone	<.01	<.001	<.001
Negative score			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.05	<.001	<.001
Drug alone	<.05	<.001	<.001
Thought & thought process			
E.C.T.+Drug	<.001	<.001	<.001
E.C.T. alone	<.01	<.001	<.001
Drug alone	<.05	<.001	<.001

there is a marked reduction in psychiatric disability with all the three treatment groups.

DISCUSSION

In our study a few important findings have been obtained. All the three treatment regimes are effective in reducing psychotic symptoms and psychiatric disability in schizophrenic patients. Some parameters show rapid response to a combination of E. C. T. and haloperidol as compared to others. For example the abnormality in the negative scores of General appearence and behaviour have shown rapid response to E. C. T.+Drug as compared to the other two regimes. With drugs alone, the negative scores of General appearence and behaviour and Affect and mood do not show sufficient response till day 8 and day 15 respectively. However by the end of 3 week there is a significant improvement in the clinical status of the patients on these parameter comparable to the other two regimes. So, it may be concluded that addition of Electro Convulsive Therepy to drug treatment improves the rate of recovery. However, by the end of 3 weeks the other two regimes also have a comparable clinical effect in schizophrenia. Our findings confirm the findings of Janakiramaiah *et al.* (1981).

REFERENCES

CERLETTI, U., AND BINI, L. (1938). L' Elettro-shock. Arch. Gen. Neurol. Psichiatr. Psicoanal., 19, 226.

GAUTAM, S. (1976). Psychiatric disability rating scale (unpublished).

JANKIRAMAIAH, N.; SUBBA KRISHNA, D. K. (1981). E. C. T., Chlorpromazine combination compared with chlorpromazine only, in schizophrenia. Ind. J. Psychiat., 23 (3), 230.

KLEIN, D. F. & DAVIS, J. M. (1969). Diagnosis and drug treatment of psychiatric disorders. Baltimore : William and Willkins.

LAWRENCE, O., KOLB, (1977). Noyes' Modern clinical psychiatry. Seventh edition, W. B. Saunders company, Philadelphia, U.S.A.

MAY, P. R. A. (1968). Treatment of schizophrenia. New York : Science House.

OVERALL, E. J., HOLLISTER, L. E., (1979). Comparative evaluation of research diagnostic criterion of schizophrenia. Arch. Gen. Psychiat.. 36, 1198.

ROCKLAND, L. H. AND POLLIN, W. (1965). Quantification psychiatric mental status. Arch. Gen. Psychiat., 12, 23.

SARGANT, W. AND SLATER, E. (1963). An introduction to the physcial method of treatment in psychiatry. Baltimore : William & Wilkins.