A Comparative Study of the Efficacy of Bilateral and Unilateral Electroconvulsive Therapy with Thioridazine in Acute Schizophrenia

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SUMMARY

A study of 100 South Sotho males, suffering from schizophrenia, was done. They were treated with thioridazine and either bilateral or unilateral ECT.

The double-blind trial showed no real difference in the post-ECT restlessness or in the therapeutic efficacy of the 2 methods. Both, however, produced definite improvement of the schizophrenic disorder.

The efficacy of bilateral electroconvulsive therapy (ECT) has been well established. Since unilateral ECT was introduced by Impastato and Pacella, comparative studies of the 2 methods have produced contradictory results.

In 1968 a review of the existing literature by Strain and associates attempted to explain this on the basis of methodological shortcomings.

In previous studies the patients were either depressed or from a mixed diagnostic group.

This investigation was undertaken to compare the effects of bilateral and unilateral ECT, in combination with a phenothiazine, in acutely schizophrenic patients.

PATIENTS AND METHODS

This double-blind trial consisted of 100 South Sotho males, an African ethnic group, on their first admission to a psychiatric hospital. They were all certified as mentally disordered and treated in the same ward at Oranje Hospital, Bloemfontein, during early 1971.

All patients had a thorough physical examination to exclude organic factors.

They were diagnosed as schizophrenic using Bleuler's criteria as validated for the Sotho tribe by Hurst, alternately assigned to 2 groups. They were then rated (A) on the 'Brief Psychiatric Rating Scale—BPRS' (Overall and Gorham) by a psychiatrist, and independently by a trained psychiatric nurse, on the 'Nurses Observation Scale for Inpatient Evaluation—NOSIE 30', described by Honigfeld, Gillis and Klett.

One group of 49 patients received bilateral ECT, and the other group of 51 patients unilateral ECT on the non-dominant hemisphere. Applying Abrams' method to determine cerebral dominance, all patients in the unilateral ECT group proved to be right-handed and received unilateral ECT to the right hemisphere, using the electrode positioning of Lancaster and associates. The bilateral ECT was administered with the electrodes in the conventional frontotemporal position.

Electrical current was supplied by an Ectron machine as described by Fleminger and associates and the total time the current passed, was recorded. All patients received ECT daily on 8 consecutive days, concurrently with thioridazine 100 mg twice daily. Bilateral convulsions occurred on all occasions. No anaesthetic was administered.

During the first 30 minutes after ECT the maximum degree of motor restlessness of every patient was recorded on a 5-point scale—'Psychomotor Restlessness Rating Scale'—ranging from 'none' scored as 1, to 'very severe' scored as 5.

After the last ECT, the dosage of thioridazine was increased to 100 mg thrice daily. This dosage was maintained, and no other medication was given, until the 14th day after the last ECT, when each patient was again rated (B) on 'BPRS' and 'NOSIE 30' by the same investigators.

RESULTS

The recorded total length of time that the current was switched on, during both bilateral and unilateral ECT, varied from 2.9 seconds to 3.2 seconds, with a mean of 3.036 seconds. The coefficient of variation, being 4.64%, is small enough not to invalidate the further results.

In both the 'BPRS' and 'NOSIE 30' the total score of each test was used as an indication of the severity of the illness. The higher the score the worse the illness.

In both the 'BPRS' and 'NOSIE 30' the total score of each test was used as an indication of the severity of the schizophrenic disorder; the higher the score the worse the illness.

In Table I, when comparing the first ratings of both groups, no statistically significant difference was found on application of the Student's t-test. The difference in the severity of the illness between the 2 groups is therefore not significant.

Table II again shows no significant difference between the second ratings of the 2 groups. The 2 types of ECT are therefore equally effective in the treatment of schizophrenia.

Date received: 9 November 1971.
TABLE I. COMPARISON BETWEEN THE FIRST RATINGS OF THE TWO GROUPS APPLYING STUDENT'S t-TEST

<table>
<thead>
<tr>
<th>Brief Psychiatric Rating Scale</th>
<th>Nurses Observation Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unilateral</td>
<td>Bilateral</td>
</tr>
<tr>
<td>Mean scores</td>
<td>n</td>
</tr>
<tr>
<td>54,2745</td>
<td>51</td>
</tr>
<tr>
<td>54,2244</td>
<td>49</td>
</tr>
</tbody>
</table>

TABLE II. COMPARISON BETWEEN THE SECOND RATINGS OF THE TWO GROUPS APPLYING STUDENT'S t-TEST

<table>
<thead>
<tr>
<th>Brief Psychiatric Rating Scale</th>
<th>Nurses Observation Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unilateral</td>
<td>Bilateral</td>
</tr>
<tr>
<td>Mean scores</td>
<td>n</td>
</tr>
<tr>
<td>28,9607</td>
<td>51</td>
</tr>
<tr>
<td>28,0612</td>
<td>49</td>
</tr>
</tbody>
</table>

Table III presents the comparison between the first and second ratings of each group. Here a highly significant difference was found in both ‘BPRS’ and ‘NOSIE 30’, indicating that both unilateral and bilateral ECT are effective in the treatment of schizophrenia when combined with thioridazine.

This was also borne out by the over-all clinical impression in both groups together. At the end of the trial 67% of the patients had improved very much, 22% had improved slightly and 11% showed no improvement or became worse.

Fig. 1, plotted from the mean restlessness scores after each ECT, clearly shows very little difference in the restlessness of the 2 groups during the postictal phase and is emphasized by overlapping at the 8th ECT. There is however a general tendency to increased restlessness with more ECT in both groups.

**DISCUSSION**

This clinical trial, conducted on a double-blind basis, established bilateral ECT and non-dominant unilateral ECT as being equally effective, when combined with thioridazine in the treatment of acute schizophrenia. Both groups received 8 ECTs on a once-daily basis, and were rated after the same interval on 2 different objective rating scales without showing a significant difference in the improvement of the schizophrenic disorder of the 2 groups. This does not support the findings of other studies, that a greater number of unilateral ECTs is likely to be...
required to achieve the same therapeutic effect than with bilateral ECT. This may be due to a cumulative effect of daily ECT.

The diagnostic criteria for admission to the trial were established in advance and the 2 patient groups were clinically homogeneous.

All patients were treated in the same ward under the same conditions, and no other psychotropic or physical medication was administered during the trial. Only a small variation in the time that the electrical current was administered, was recorded.

An attempt was made to record the motor restlessness component of postictal confusion, without clouding of consciousness by an anaesthetic, as suggested in previous studies, but results were inconclusive.

No attempt was made to measure memory impairment due to the lack of suitable tests in the Sotho language.

Due to the high incidence of schizophrenia and the inherent chronicity of the disease, further research into the clinical application of unilateral ECT, in this illness, needs encouragement.

I should like to thank Major-General E. C. Raymond, Secretary for Health, for permission to present this paper; Dr R. A. Keet, Superintendent at Oranje Hospital, for permission to do the trial and for his assistance with the investigation; the Staff at Oranje Hospital for co-operating and making the study possible; and Professor A. Rietsma and his associates, at the University of the Orange Free State, for the statistical analysis.

REFERENCES


Spontaneous Rupture of the Uterus Due to Placenta Percreta

A CASE REPORT

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SUMMARY

A case of rupture of the uterus at approximately 28 weeks' gestation due to placenta percreta is described. The difficulties in the diagnosis and treatment are discussed.


Placenta percreta is a very rare complication of pregnancy. Millar states that the incidence of placenta creta is about 1 in 8 000 booked cases and of these 7% are percreta. Spontaneous rupture of the uterus due to placenta percreta is extremely rare, the incidence being 15.1%. The aetiology is obscure. Evidence suggests that the main predisposing factor is decidua deficienty. The decidua is not present or is very poorly developed. The trophoblastic tissues appear completely normal histologically. The superficial muscle layers show varying degrees of hyalinization. In incomplete abortion where there is difficulty in removing chorionic remnants at evacuation of the uterus, a morbid adherence of the placenta can be suspected.

CASE REPORT

A woman of 28 years, para 3, gravida 8, was admitted to the hospital on 1 April 1970. She gave a past history of 3 normal deliveries and 4 early abortions. She had undergone an appendicectomy 10 years previously. She could not remember the date of her last menstrual period, but the cycle was usually regular. She complained of pain in the lower abdomen of some