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Side Effects of Somatic Therapies in Depression: A Double Blind Comparison of ECT & Imipramine

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Abstract

In a double blind randomised study comprising ECT and imipramine, ECT was found to be superior as it caused fewer subjective side effects than imipramine. Some of the side effects were common to both treatment methods. ECT did not cause detectable organic brain damage.

Key words -
ECT,
Imipramine,
Depression,
Side effects

Although depressives recover equally well with either ECT or antidepressants the former produces its effect quicker [1], [2]. Even the feared cognitive deficits produced by ECT have been shown to be transient [2], [3]. Since memory impairment may be function of the depressive syndrome [4], [5] improving with treatment, a comparison on this parameter, with another antidepressant seems mandatory. Subjective side effects can influence compliance [6] and thus warrant attention too. Subjective side effects have been compared between ECT and drug treated group of depressives in a large multicentred trial [7]. The trial does not indicate if any one treatment method causes relatively fewer subjective side effects. The next two studies [8], [9] although not comparison studies, have shown that the subjective side effects are reported with ECT, however the number of side effects is small. Fink [10] has pointed out that risks of ECT should be compared with antidepressants as the latter have potential cardiac toxicity and suicide potential, besides the many anticholinergic side effects. The clinical superiority of ECT over antidepressants will be strengthened if ECT is less hazardous with respect to side effects.

Method

A detailed description of the sample is given elsewhere [2]. Out of 32 endogenous depressives who entered the trial 8 had to be dropped out. The remaining 24 completed the 12 week trial achieving a clinical recovery of over 75 per cent reduction of their initial scores on the Hamilton Rating Scale for Depression (HRSD) [11]. There were 13 drug treated patients and 11 ECT treated patients (age range 22 - 66 years, 11 males). The allocation had been random following consent. The groups were comparable with respect to relevant clinical variables including initial scores on HRSD. The author who was the assessor was blind to the treatments administered till the end of 6 months.

One group received modified bilateral ECT 3 per cent in the first two weeks and one each at the end of 3rd, 4th, 6th, 8th and 12th weeks, along with placebo capsules.

Another group received identical imipramine capsules 75 mgm per day in the first and 12th week and 150 mgm per day in between. They also received the simulated ECT (thiopentone, succinylcholine and atropine) in the regimen described for the first group

Besides the assessment of severity of depression on HRSD, an organic brain dysfunction battery [12] was administered pretrial. This battery gives a composite score of organic brain dysfunction.

A check list of 24 side effects was constructed based on the commonly mentioned side effects for tricyclics as well as ECT (Appendix). This and HRSD were administered at the end of each of first 4 weeks and at the end of 6th, 8th and 12th weeks. Each reported symptom received a score of one if it certainly post dated the current treatment. Mere worsening of the scores of the items on HRSD, included also in the checklist was not scored. These assessments were done at least 48 hours after the last ECT. The organic brain dysfunction battery was administered at the end of 3 months (12 Weeks).

Results

That ECT produced quicker results although the final outcome was identical to that of imipramine has been reported [2].Two out of the 8 patients dropped out had disabling side effects demanding discontinuation of the treatment. One ECT treated patient switched over to mania, while one imipramine treated patient developed severe postural hypotension.

ECT treated patients reported significantly fewer side effects than those treated with imipramine, throughout the trial except at the end of the first week (fig 1). The common side effects reported with each treatment is indicated in table-1. No significant relationship emerged between the HRSD scores and organic brain dysfunction. The mean composite scores of organic brain dysfunction were not significantly different at pretrial assessment (ECT-7.66 ± 3.17 drug -8.04 ± 2.91). So also the mean scores in either group did not change significantly at the post trial assessment (ECT-7.35 ± 2.37, drug 8.27 ± 2.35).

Mean ±SEM number of side effects in the patient groups. Except at the end of week 1 differences were statistically significant at all assessments. The mean number of side effects were compared between groups using independent sample 't' test. ($p < 0.05$ wk 1, $p < 0.001$ wk 2, wk 3 & wk 4, $p < 0.01$ wk 6, wk 8 & wk 12)

Table I - Percentage of patients reporting side effects in the drug (D) and ect group (E) Symptoms deleted were infrequent

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Discussion

When two equally effective somatic therapies for depression, ECT and imipramine were compared

with respect to side effects, striking differences emerge. ECT proved superior to imipramine, as it caused fewer side effects. Like in an earlier study [7]., some side effects were common to both treatments, which is interesting. Some side effects of ECT like memory impairment and headache were also reported with imipramine, whereas some side effects of imipramine like drowsiness and constipation almost never occurred with ECT. The role of anaesthetic agents cannot be overlooked at the moment.

Thus this study essentially demonstrates that ECT is superior to imipramine as it causes fewer subjective side effects. It also produces no detectable organic brain dysfunction.

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Appendix

Side Effect Symptom Checklist

Side Effect Symptom Checklist

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