

ECT IN MENTALLY RETARDED SUBJECTS WITH PSYCHIATRIC ILLNESS

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ABSTRACT

The mentally retarded subjects show a much higher prevalence of full range of psychiatric disorders than the non-retarded population. Whereas the role of psychotropic drugs in such patients is well discussed, the reports on the use of ECT are scarce. Many psychiatrists dealing with the mentally retarded psychiatric patients are reluctant to consider ECT due to lack of adequate experience. We report five mentally retarded patients with different psychiatric disorders who were successfully treated with ECT after failing adequate trials of pharmacotherapy. No disproportionately higher adverse events on account of mental retardation were observed. ECT need to be favorably considered in mentally retarded persons with psychiatric morbidity especially when treatment with psychotropic drugs either fail or is intolerable.

Key words: Mental retardation, I/Q assessment,ECT

Various studies till date have reported the prevalence of psychiatric disorders in mentally retarded subjects in the range of 30% to 40% (Lund 1985; Iverson & Fox 1989; Hand 1993; Newman et al., 1996). Such patients show the full range of psychiatric disorders in the diagnostic classification (MacLean, 1993), but behavioral disorders, psychosis and autism are seen at a higher rate (Salvador Carulla et al., 2000). Whereas the role of psychotropic drugs and behavioral-intervention has been well discussed for the management of psychiatric morbidity in the presence of mental retardation, the effectiveness of ECT in such patients is an understudied area (Bebchuk et al., 1996). To our knowledge, a total of around 25 cases have been reported during the last about 2 decades.

In the early eighties, a few case reports regarding the usefulness of ECT in mentally retarded psychiatric patients appeared in the psychiatric literature. Bates & Smeltzer (1982) successfully treated the life threatening self injurious behaviour of a severely mentally retarded adult with a course of 12 bilateral ECT after the failure of intensive behavioural management and pharmacotherapy. Guze et al., (1987) reported a 21 year old man with mild mental retardation, cerebral palsy and bipolar illness who had vegetative symptoms and disorganized behaviour before starting ECT. but developed manic symptoms after the first treatment. ECT was continued and there was a good improvement at the end of eighth treatment and later the patient was put on a combination of ECT & Lithium after

the recovery of acute episode.

In the late eighties and nineties, many cases of mentally retarded subjects with depressive illness who were treated successfully with ECT after the failure of antidepressants were reported by various authors. Kearns (1987) and Goldstein & Jensvold (1989) successfully used ECT to treat delusional depression in two mentally retarded patients (single case reports) who failed to respond to drugs. In both cases, the patients were in their late sixties. Successful use of ECT to treat resistant depression in patients with Down syndrome have been described by Warren et al. (1989), whose three out of five such patients responded to ECT. Similarly, Lazarus et al., (1990) successfully treated two patients of severe depression with Down syndrome who failed to respond to antidepressant drugs. Out of them, one patient, a 50 year old women had recurrent depression and was treated with an average of 8 ECT during six of fifteen hospitalizations. Psychotic depression developing after a surgical procedure in a moderately retarded male was treated successfully with ECT after the failure of pharmacotherapy by Karvonis et al.(1992). Puri et al. (1992) employed maintenance ECT to prevent the recurrence of episodes of psychotic depression in a mildly mentally retarded adult male when different drug regimens failed.

Besides depression, severe behavioural abnormalities and atypical affective illness have been successfully treated with ECT in mentally retarded patients. Merrill (1990) reported a profoundly retarded woman with affective disorder who had atypical symptoms and showed dramatic improvement with a course of ECT after failing to respond to neuroleptics, antidepressants and lithium. Snowdon et al., (1994) successfully controlled continuous screaming with ECT in an elderly woman with mild mental retardation who screamed for increasingly prolonged periods despite the use of various psychotropic drugs for four months. Bebbuck et al. (1996) reported a profoundly retarded male in whom various diagnoses including dementia, major depression and mixed bipolar illness were considered to explain the severe behavioral abnormalities. He

eventually stabilized with maintenance ECT after failing to respond to various neuroleptics, anxiolytics, antidepressants and mood stabilizers.

In recent year, more reports of maintenance ECT for treating various psychiatric disorders in mentally retarded patients have appeared. Chanpattana (1999) successfully combined neuroleptics with maintenance ECT over a period of 6 to 18 months for the treatment of three mentally retarded treatment resistant schizophrenic patient. Thuppal & Fink (1999) successfully treated psychiatric illness in five mentally retarded patients after the failure of adequate pharmacotherapy. Two patients had catatonia, two schizoaffective disorder and one had bipolar illness. Out of five, four patients received maintenance ECT.

From the above review, it is clear that ECT is an effective method of treatment in mentally retarded patients when pharmacotherapy fails. In the earlier case reports, the issue of any disproportionate side effects of ECT due to mental retardation was not clearly discussed. However, in recent year, lack of such side effects and safety of ECT in mentally retarded patients have been emphasized (Thuppal & Fink, 1999; Chanpattana, 1999). Because of lack of experience, many psychiatrists treating mentally retarded subjects resist the use of ECT (Thuppal & Fink, 1999). Therefore, there is a need to share the experience and add to the existing literature on this topic.

Case 1: Mr.D.K., a 19 years old unmarried male from rural background of northern India was brought to the outpatient department of our institute with a history of one month duration marked by disturbed sleep, wandering tendency, disruptive behavior and unprovoked anger-outbursts. There was no past or family history of any psychiatric disturbance. The patient could not go to school and acquired no formal education. He was assisting his father in agricultural work before becoming symptomatic. Systemic examination was unremarkable. Mental status examination revealed that the patient was very excited, shouting at the top of his voice and becoming angry on minor provocation.

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The patient was admitted and was initially put on injectable antipsychotics which had to be stopped after 2 days because of severe extra pyramidal symptoms. He was put on olanzapine which was hiked up to 10 mg per day and could not be hiked further because of excessive sedation and postural hypotension. As there was not much improvement, sodium valproate was added upto 1200 mg per day. Despite six weeks of treatment, there was not much change in his condition. Eventually, it was decided to give a trial of ECT. His all medications were discontinued and informed consent was obtained from the mother and the patient was put on bilateral ECT on thrice a week regime. After 4th ECT, there was good improvement. The patient became more cooperative, his aggressive behavior disappeared and it was possible to engage him in meaningful interview. The mental status examination revealed that he had grandiose ideas, cheerful affect and auditory hallucinations. A diagnosis of manic episode with psychotic features was made. After two more ECT, he stabilized and was put on a combination of lithium and olanzapine. After another month, his I/Q assessment was done which showed a composite I/Q of 58 putting him in the category of mild mental retardation. He was discharged after a total of 3 months hospitalization and at the time of discharge, he was put on a regime of lithium carbonate 1200 mg/day (Serum lithium- 0.8meq/lit) and olanzapine 5 mg per day. The antipsychotic was tapered off and withdrawn during the subsequent follow-ups and the patient was maintaining well on lithium alone till last seen after about one year of hospitalization.

Case 2: Mr. SNK, a 23 years old male from rural background of West Bengal was brought to OPD of our institute with 3 days old history of disturbed sleep, running away from home, crying and laughing to self, spitting and removing clothes in public and at time assaulting the family members. He was the 3rd among 4 sibs who were healthy. There was no family history of psychiatric illness, substance abuse or epilepsy. The patient had a past illness of similar symptoms about 05 years back for which he was treated with a course of 10 ECT after failing a course of various

antipsychotics. His personal history revealed that he was the product of a vaginal delivery conducted at home without any complications. However his motor and speech milestones were delayed and he started speaking at the age of 6 years but eventually could acquire the full speech. But he could never go to school and during the last hospitalization, his IQ assessment showed a composite IQ of 42 which put him under the category of moderate mental retardation.

Physical examination was unremarkable. Mental status examination revealed that he was unkempt and was very irritable. He was seen to be muttering to self and showed a tendency to catch hold of others and at time became aggressive without any apparent provocation. It was not possible to engage him in a meaningful MSE. A diagnosis of unspecified psychosis with moderate mental retardation was made. Because of severe management problems and problem with oral medication, he was initially put on injectable antipsychotics, but he developed severe extra pyramidal side effects with even a moderate dose of typical antipsychotics. Subsequently, he was given a trial of atypical antipsychotics (Olanzapine up to 20mg/day) but there was no response even after 4 weeks. Ultimately, a decision was taken to put him on ECT and a course of twice per week bilateral ECT was started and the patient showed good response after the 6th treatment. His laughing and muttering to self decreased and he did not show any spitting or disinhibited behavior. He was able to take care of himself with minimal help from the ward staff. After two more ECT he was put on Olanzapine 10 mg per day along with maintenance ECT every fortnightly which was tapered to once a month after the discharge. Till last seen, he is living with his family and helps the father manually in the fields and does not require any help for personal upkeep. He is receiving Olanzapine 10mg per day and maintenance ECT once per month for the last 08 months on outpatient basis.

Case 3: Mr. J. S., a 26 years old unmarried Sikh gentleman from urban background of Punjab was brought to our institute with 2 weeks duration of illness marked by decreased sleep, increased

talk, increased appetite, overspending and sexually disinhibited behaviour. The patient was known to have subnormal intelligence from childhood but was able to help in running the family business.

His father was reported to have alcohol dependence and had a manic episode about 10 to 12 years back after which he left the house and never returned. Mr.JS had past history suggestive of a depressive episode in 1998 and a manic episode in 1999, which were treated by some private psychiatrists, the details of the treatment were not available. For the present episode the patient was treated with typical antipsychotics as per the prescription available with the family members.

The physical examination revealed that the patient had mild extra pyramidal symptoms due to drugs and mental status examination revealed that he was restless, hyperactive, very talkative and had grandiose delusions and cheerful affect. He had disinhibited behaviour and was trying to catch hold of the female staff and expose his genitals. A diagnosis of bipolar affective disorder, 3rd episode (currently manic) with psychotic features with mild mental retardation was made. In view of the extrapyramidal side effects he was put on Risperidone upto 6 mg per day and Sodium Valproate, which was built up to 2000 mg/day. After 2 weeks of treatment with this regime the patient did not show much improvement and was a management problem in the ward. It was decided to give a trial of electro convulsive therapy. Thrice a week regime of bilateral ECT was started after stopping all drugs. After the 6th treatment, the patient started showing improvement, his hyperactivity came down, sleep improved and he no longer exhibited any disinhibited behaviour. After a total of 8 ECT it was stopped and he was put on Sodium Valproate which was built up to 1500 mg/day and Risperidone upto 4 mg per day with good effect. The patient maintained improvement and the IQ assessment done after one month showed a composite IQ of 62. He was discharged after two months of hospitalization. During follow up after 1 month, his antipsychotics were tapered off and stopped and Sodium

Valproate was continued. Another follow up after 4 months of hospitalization showed that the patient was maintaining well on 1500 mg of Sodium Valproate and was helping in the family business.

Case 4: Mr.R.K., an 18 years old unmarried male, a pan shop owner from rural background of Jharkhand was brought to our institute with a history of one and a half months duration marked by decreased sleep, excessive talks, tall claims and irritable mood. Apart from that he was consuming cannabis for the last 4 years but was without any behavioral problems. Mr.R.K.was the product of a full term normal delivery conducted at home without any complications. All his milestones were within normal limits. He attended the primary school but could not study after the 4th standard. In the early childhood, the family members came to know that the patient was of subnormal intelligence. At the same age, he was also diagnosed to be suffering from bilateral sensory neural deafness. There was history suggestive of schizophrenia in one elder brother and history suggestive of mental retardation in one paternal aunt.

Apart from bilateral sensory neural deafness, his physical examination was unremarkable. The mental status examination revealed that Mr.RK was very excited and was having a very cheerful affect and grandiose delusions. A diagnosis of manic episode with psychotic features with comorbid cannabis abuse with mild mental retardation was made. Initially the patient was put on injection haloperidol and oral Sodium Valproate, which was built up to 1000 mg per day but he developed severe gastrointestinal upset and ataxia due to which Sodium Valproate was reduced to 800 mg per day, but there was not much improvement in 2 weeks. So, Sodium Valproate was withdrawn and lithium was added up to 1200 mg per day with serum lithium level of 0.96 meq/lit but there was not much improvement in 3 weeks time. Later all his medications were stopped and he was put on a course of bilateral ECT on thrice a week regime. After the 5th ECT the patient showed remarkable improvement. He was given a total of 7 ECT and subsequently was put on 1200 mg/

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TABLE
CLINICAL DETAILS OF FIVE MENTALLY RETARDED PATIENTS HAVING VARIOUS PSYCHIATRIC DISORDERS TREATED WITH ECT

Age	Level of MR	Diagnosis	Frequency (HZ)	Duration (Seconds)	Stimulus Dose		Total No. of ECT in Acute Phase	Main-tenance ECT	Concurrent medication
					Current Mille-amperes	Pulse width Mille-seconds			
19	Mild (IQ=58)	Manic episode with psychotic features.	40-70	0.6 to 1.0	500 to 700	0.8 to 1.2	6	No	Nil
23	Moderate (IQ=42)	Unspecified Psychosis	50 to 70	0.6 to 1.4	500 to 800	0.8 to 1.4	18 (during 2 episodes)	Yes	Olanzapine 10mg/day (with maintenance ECT only)
26	Mild (IQ=62)	Bipolar affective disorder currently manic with psychotic features (3 rd episode)	50 to 70	0.6 to 1.2	500 to 700	0.8 to 1.2	8	No	Nil
18	Mild (IQ=68)	Manic episode with psychotic features with comorbid cannabis abuse	40 to 70	0.5 to 1.0	500 to 700	0.8 to 1.2	7	No	Nil
30	Mild (IQ=54)	Recurrent Depression	50 to 80	0.8 to 1.6	500 to 800	0.8 to 1.4	22 (during 2 episodes)	Yes	Imipramine 100mg/day

day of lithium and 5mg of olanzapine per day with good effect. The patient was discharged on this regime after another month of hospitalization. At the time of discharge, his IQ assessment showed an IQ of 68. After discharge, he came for follow-up after one month and then after 3 months of index hospitalization and was maintaining well on lithium carbonate only.

Case 5: Mr.M.P. was a 30 years old married Hindu male from semi-urban background of Eastern India. He was the 2nd of 2 siblings and was a known case of mental retardation since childhood. He had no formal education and was assisting his father in agriculture. He presented to outpatient

department of our institute with history of 5 months duration marked by markedly decreased talk, poor self care, decreased food intake and markedly reduced sleep. His activity level was markedly reduced and he was spending most of the time sitting or just lying in the bed and was seen crying many times without any reason. During the last 1 week, his food intake was markedly reduced. There was history of a similar episode of psychiatric illness about 4 years back which was treated by a course of 12 ECT. There was family history of mental retardation with behavioral problems in the mother, who died about 5 years back at the age of 45.

Systemic examination revealed an emaciated person who had fever (Temp. 38.5°C) and there were crepitations on the right side of chest in the axillary and infrascapular regions. Mental status examination revealed that the patient spoke in very soft voice and cried many times during the interview and expressed feelings of worthlessness and expressed death wishes. A diagnosis of recurrent depression with mental retardation was made. For his physical problem, a chest X-ray was ordered which revealed a patch of pneumonitis in the right lung, which was treated with clarithromycin 250 mg on BID basis for 7 days on the advice of a physician. For his psychiatric condition, he was put on imipramine which was built up to 150 mg/day but could not be increased further due to anticholinergic side affect. There was not much change after 3 weeks apart from mild improvement in sleep and appetite and he continued to express death wishes. Because of the previous experience and because of constantly poor food intake and death wishes, it was decided to give a trial of ECT. The patient was put on a regime of twice per week bilateral ECT. The patient showed gradual improvement and after the 6th ECT, his food intake was adequate, sleep was normal and he was talking with the staff and mixing with other patients, although his affect was still depressed and some ideas of worthlessness were also present but he no longer expressed death wishes. He received 4 more ECT and according to the family members assessment, returned to the premorbid level. His IQ assessment was carried out six weeks after the complete recovery, which revealed a composite IQ of 54. He was discharged on a regime of imipramine 100 mg/day and maintenance ECT on twice a month basis initially, which was made once a month after 4 more treatments. The patient was maintaining well on this regime till last follow up about 7 months after the index hospitalization.

DISCUSSION

Table shows the clinical details of five patients with mental retardation and different psychiatric disorders treated with ECT, which are

reported above. In all cases, the informed consent was obtained from the guardians before every ECT treatment. None of the cases developed prolonged seizure, prolonged apnoea or any other 'on the table' complications with ECT. In the presence of mental retardation, especially if it is more than mild, it becomes difficult to demonstrate objectively whether any immediate or long lasting cognitive side effects due to ECT are occurring or not. However, thorough physical, neurological and mental status examination before starting ECT and subsequently after each treatment did not reveal any disproportionately higher adverse consequences with ECT on account of mental retardation.

In the earlier years of ECT use, concern was raised regarding the possibility of 'brain damage' due to ECT. However, with demonstration of advantages of adequate oxygenation during ECT in sixties, ECT has become one of the very safe and effective methods of psychiatric treatment. After an extensive review of literature on cognitive side effects, animal studies, post mortem studies and brain imaging studies, Devanand et al. (1994) concluded that there is no credible evidence that ECT causes structural brain damage & though at times, spotty memory loss for events immediately surrounding the ECT may persist for a longer duration, but by and large, ECT induced cognitive deficits are transient in nature.

To treat psychiatric and behavioral disturbances in mentally retarded individuals, psychotropic drugs are widely used and at times, their use is excessive (Clarke et al., 1990). Since such patients are usually prone to develop side effects even in low doses, and at times, the illness does not respond to pharmacotherapy, it is imperative to explore the efficacy and safety of other treatment methods like ECT in them. The reluctance of many psychiatrists treating the mentally retarded patients to consider the use of ECT seems to be unjustified. The reported systemic effects as a direct result of ECT e.g. minimal memory impairment (Lazarus et al., 1990) weakness and incoordination (Merrill, 1990) and prolonged seizures (Thuppal & Fink, 1999) are extremely rare and their occurrence in mentally

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retarded population does not seem to be more common as compared to the general population. No scientific evidence is available to conclude that mental retardation poses any special risk to the use of ECT and by and large, the published literature indicate that ECT is not only efficacious but quite safe in persons with mental retardation (Thuppal and Fink, 1999).

In conclusion, we would like to emphasize that ECT need to be favorably considered in mentally retarded individuals with concurrent psychiatric disorders, especially when adequate trials of pharmacological agents either fail or are intolerable.

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