

Electroconvulsive Therapy in Rehabilitation: The Hong Kong Experience

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Introduction by the column editors: Persistent psychotic symptoms can intrude on an individual's cognitive and psychosocial functioning and interfere with that person's active and constructive participation in social and vocational rehabilitation. Amelioration or elimination of intrusive positive and negative symptoms of psychosis is the major task for clinicians during the acute phase of schizophrenia. Successful treatment permits the patient to transition into stabilization and recovery phases, when psychosocial rehabilitation can take primacy (1).

The introduction of clozapine has enlarged the proportion of individuals with schizophrenia whose psychotic symptoms can be controlled (2), but symptoms remain refractory in a large number of patients. One largely unexplored alternative for treating individuals who are chronically disabled is electroconvulsive therapy (ECT). Already known for its efficacy in treating affective disorders, its effectiveness in treating schizophrenia—although more limited—has been documented over more than five decades (3,4). ECT has been found to be partic-

ularly effective in treating first-episode cases in which affective and catatonic symptoms are manifested and in 20 to 50 percent of treatment-resistant cases, including those in which the patient was nonresponsive to clozapine (5–8). Without continuation and maintenance ECT, however, results are usually short-lived (4,7,9).

Tang and Ungvari have used ECT in an attempt to increase the responsiveness to psychosocial rehabilitation of patients who have treatment-refractory schizophrenia. They describe their experiences with ECT at a facility in Hong Kong, where long-term hospitalization is still the norm for a sizable proportion of patients with chronic schizophrenia. ECT is more compatible with the biological view of schizophrenia that is prevalent in Asian countries; hence it has greater cultural congruence and acceptability among consumers and families in China than in the United States.

Unlike other developed countries—but like much of Asia—Hong Kong has not undertaken large-scale deinstitutionalization of persons with serious mental illness. Lack of tolerance for psychiatric illnesses and underdeveloped community care in Hong Kong, coupled with the fragmentation of traditional family structure and meager social security allowances, have hindered the reintegration of severely disabled psychotic patients into the community.

The general trend in the development of rehabilitation and communi-

ty care development in Hong Kong has been for patients who respond well to antipsychotic drugs to be relocated to community facilities or returned to live with their families. However, patients who are chronically psychotic and do not respond to treatment—mainly patients with schizophrenic disorders—usually remain in long-stay hospitals and wards. A sizable subset of these patients have prominent positive and negative symptoms and remain resistant not only to both conventional and atypical antipsychotic drugs but also to psychosocial interventions.

The management of patients with treatment-refractory schizophrenia has thus fallen to the rehabilitation units in psychiatric hospitals, such as ours at Shatin Hospital. The composition of the patient population on our 166-bed unit is typical of such units. The mean±SD age of our patients is 47±14 years, and the mean duration of illness is 22±11 years. Eighty-eight percent of the patients suffer from schizophrenia, and of those, 70 percent are treatment resistant according to the criteria of Kane and associates (1).

The treatment for patients who do not respond to neuroleptics is to systematically augment the use of benzodiazepines, antidepressants, dopamine agonists, and carbamazepine before administering atypical antipsychotic agents—olanzapine, risperidone, and clozapine. Unfortunately, less than 30 percent of our patients respond sufficiently to these protean measures to allow their transfer to community residential settings.

Along with intensive somatic treatment, a highly structured, intensive

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psychosocial treatment program is offered six hours a day on weekdays and three hours on Saturday. Psychosocial interventions combine traditional occupational therapy—ranging from simple manual tasks to craft work, industrial training, and clerical work skills training—with elements of social skills training, attempts at cognitive-behavioral therapy for persistent hallucinations, and various recreational activities.

Over the past two years, we have implemented the basic conversation skills module and the recreation for leisure module of the social and independent living skills model (2) in an effort to progress from traditional psychosocial occupational therapy to more effective skills training (3). The community reentry module of the model will be implemented in the near future.

Use of ECT at Shatin Hospital

Because even a modest alleviation of symptoms by any treatment modality would contribute significantly to the rehabilitation of this severely disabled group of patients, we offer ECT to all patients who qualify for such treatment and who have exhausted all the available pharmacological treatment options. Our expectation, which we clearly communicate to our patients, is not full recovery or even a symptom-free state, but some improvement in rehabilitation-related areas.

The effectiveness of an extended course of ECT—up to 20 sessions, often followed by continuation and maintenance ECT for patients with intractable schizophrenic psychoses—has been recognized since the early 1940s (4). It was not until recently, however, that modern psychiatry rediscovered ECT for the treatment of schizophrenia, particularly first-episode cases in which the patient manifests affective, schizoaffective, and catatonic symptoms (5). It has been estimated that about 6.5 percent of patients who receive ECT in the United States are diagnosed as having schizophrenia (6). Similar figures have been reported in Australia (7) and Scandinavia (8); however, in Transkei, South Africa, the corresponding figure was 82 percent (9).

Case reports and case series have

demonstrated that combining ECT with antipsychotic medication is effective for 20 to 50 percent of treatment-resistant patients, including those with schizophrenia who do not respond to clozapine (10–13). Unless ECT treatment is maintained, however, the results are usually short-lived (5,12,14). To our knowledge, no controlled studies addressing the value of ECT—including continuation ECT—in treatment-resistant schizophrenia have been published, and no data are available on the prevalence of treatment-refractory patients treated with ECT.

Methods

In 1999 and 2000 we identified 41 patients on our unit who had treatment-refractory schizophrenia and were physically fit for ECT. Of the 13 patients who gave written informed consent for ECT, we have treated eight—six men and two women. Bilateral ECT was administered three times a week using a MECTA SR-1 machine, with electroencephalographic monitoring for adequate seizure duration and in accordance with the guidelines issued by the American Psychiatric Association (15). In the absence of controlled trials of ECT for treatment-refractory schizophrenia, we relied on what clinical experience we could glean from the literature (5,13,16–18) to estimate the number of ECT sessions that might be required for our patients. We decided to aim for a maximum of 20 sessions for each patient, with an ongoing assessment of the risks and benefits after each session.

Treatment outcome was measured by the patients' performance in work, daily living, and social functioning. Symptoms were assessed with the Brief Psychiatric Rating Scale (BPRS), the Scale for the Assessment of Negative Symptoms (SANS), and the Global Assessment of Functioning (GAF), which were administered two to four days before and after the course of ECT treatment. (Possible scores on the BPRS range from 0 to 108, with lower scores indicating fewer and less severe psychiatric symptoms. Possible scores on the SANS range from 0 to 120, with lower scores indicating fewer negative symptoms. Possible scores on the

GAF range from 1 to 100, with lower scores indicating poorer functioning.)

Results

The mean \pm SD age of the eight patients in our sample was 40.3 \pm 8.8 years, the mean duration of illness was 18.0 \pm 7.3 years, and the mean duration of the current hospitalization was 6.6 \pm 3.4 years. One patient withdrew consent after the second ECT session, and another withdrew after the third session. Neither patient gave a specific reason for withdrawing. A third patient refused further treatment after the eighth session, claiming that God's voice had advised him to stop this therapy. Although improvement was already noticeable in a fourth patient, treatment was stopped because bradycardia (50 beats per minute) occurred after the 12th session. Two of the remaining four patients received 15 ECT sessions, and two received 20 sessions. Except for the bradycardia, no side effects were observed in any of the patients.

For the six patients who completed at least eight ECT sessions, the mean \pm SD score on the BPRS dropped from 23 \pm 8.4 to 20.2 \pm 14.9, and the mean score on the SANS dropped from 82 \pm 30.1 to 70.3 \pm 27.7. The mean score on the GAF for their patients rose from 31.7 \pm 4 to 38.3 \pm 14.7.

Although these changes in test scores were not robust from a psychometric point of view, improvements in occupational and social functioning—such as increased participation in occupational activities, more attention to appearance, and a relaxed attitude toward other patients—for four of the six patients were observed even by staff members who initially expressed doubts about the value of ECT.

Case vignettes

Mr. A

Mr. A, a 49-year-old man diagnosed as having schizophrenia, had been continuously hospitalized since 1987. His illness was characterized by intractable, persistent auditory hallucinations and persecutory delusions. In addition, he was permanently apathetic, with blunted affect, poor self-care, and social withdrawal to the extent of lacking spontaneous speech. Although he attended occupational

therapy regularly, he was extremely slow and inattentive at work, and his productivity was negligible.

Mr. A underwent 12 bilateral ECT sessions over a period of one month, at which point he developed heart block and bradycardia, and ECT was suspended. After the course of ECT, improvement in Mr. A's negative symptoms was noted—he had better eye contact, more self-care, greater interest in his surroundings, spontaneous smiling, and the ability to converse for up to five minutes. His performance at occupational therapy improved significantly, even though his positive symptoms were as prominent as ever. He refused continuation of ECT treatment, and his social and occupational functioning showed deterioration after two months.

Ms. A

Ms. A, a 49-year-old widow, had a 20-year history of schizophrenic illness characterized by irrelevant speech, emotionally charged persecutory delusions, command hallucinations, and repeated suicide attempts. She was impulsive, neglected self-care, and had minimal social interactions. Over the previous six years, these symptoms had prevented her from being discharged or even from leaving the psychiatric unit.

After a course of eight ECT sessions, Ms. A's command hallucinations subsided, but her persecutory delusions persisted. After a second course of 12 ECT sessions, administered three months later, Ms. A was symptom free for the first time in six years. Continuation ECT of one session every other week was begun, with a gradual increase to one-month intervals between sessions. A low dosage of an antipsychotic drug was administered concomitantly.

Six months after the start of continuation ECT supplemented by low-dosage antipsychotic medication, Ms. A remained free of any positive or negative symptoms, her behavior was conventional, and her mood remained stable and optimistic. She was energetic and alert, and cognitive tests showed no evidence of impairment. After several successful trials of living at home, she now lives independently in the community. More-

over, she started dating and wished to contact her long-abandoned sons. To help handle the emotional burden of adjusting to her new interpersonal relationships, she is currently receiving individual supportive psychotherapy, and she may participate in social skills training. Her success has greatly inspired other patients and staff alike.

Conclusions

The administration of ECT in conjunction with psychosocial interventions—an admittedly unusual combination—has given our rehabilitation unit a biopsychosocial orientation. Noticeable improvement in some of our patients after several years of demoralizing stagnation not only was a great relief for the patients themselves, but it also boosted staff morale and gave them more hope and enthusiasm for their work. Nonmedical staff eventually accepted ECT as a therapeutic option for carefully selected clients.

Afterword by the column editors:

Although its use is controversial among clinicians and stigmatized in the media, ECT may be among the most efficacious treatments in psychiatry (12), including for schizophrenia (4). Individuals who have unremitting, intrusive levels of psychotic symptoms that have been refractory to one or a combination of conventional and novel antipsychotic medications are faced—along with their families, clinicians, and systems of care—with the problem of what to do next. Rather than defer, exhaust, or waste efforts at psychosocial rehabilitation, practitioners might be well advised to consider ECT, especially in combination with antipsychotic drugs for maintenance treatment. The report from Hong Kong by Tang and Ungvari in this month's Rehab Rounds, along with other naturalistic case series, suggests that a substantial number of patients with treatment-resistant schizophrenia may benefit from treatment with the combination of maintenance ECT and antipsychotic medication. Patients who are unwilling or unable to undergo ECT may opt for a trial of transcranial magnetic stimulation, a treatment that has shown promise for refractory auditory hallucinations (15).

Two examples from our practice echo the positive response to ECT re-

ported in naturalistic case series. A 41-year-old lawyer had been disabled for 12 years by persistent and frequent hallucinations and delusions that resisted all types and combinations of antipsychotic and adjunctive drugs. His vocal apparatus and arms and hands were controlled by “people living in another part of the city who use electromagnetic waves to make me say things I do not want to say, to clap my hands, and to hit myself.” These signs and symptoms interfered with even superficial social intercourse, especially since he suffered exacerbation whenever he rode the bus, walked the streets, sat in a movie theater, or ate in a restaurant. He was unable to participate in a psychosocial club, even when performance expectations were lowered to nil.

ECT was offered as a last resort. After eight treatments his hallucinations ceased, and after 16 treatments he was free of all psychotic symptoms for the first time in 12 years. With monthly maintenance ECT and a low dosage of conventional antipsychotic medication, he successfully enrolled in an intensive rehabilitation center that helped him regain the self-care, personal hygiene, and social and vocational skills that had languished and eroded over the years. Eighteen months after conclusion of his intensive ECT, he was enrolled in a community college and was making plans for independent living.

Another individual with treatment-refractory schizoaffective disorder was treated effectively with ECT at the UCLA Neuropsychiatric Institute and Hospital. This 31-year-old single male had been psychotic for ten years, with only attenuating effects from clozapine combined with risperidone, haloperidol, lithium, sertraline, and clonazepam. He had command hallucinations that told him he would “boil in hell for eternity,” referential delusions, thought insertion, thought broadcast, delusions of guilt, and severe anxiety and depression. Despite a year-long intensive psychopharmacological regimen, he made a suicide attempt and was hospitalized for the third time in ten months. Twenty-four ECT sessions resulted in a remission of his psychosis, a return of his premorbid per-

sonality, and his active participation in an open residential and psychosocial rehabilitation program that featured training in conversation skills, recreation for leisure skills, and independent living. Both he and the person described above are still in remission of psychosis and have been participating in rehabilitation services for two years with maintenance ECT every four to six weeks. ♦

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