

Unsupported Claims of ECT Risk

To the Editor:

Tecoult and Nathan's retrospective analysis of ECT morbidity in 75 patients during 612 ECTs (Eur. J. Anesth. 18:511–518, 2001) has serious clinical and methodological flaws, as follows.

1. No atropinic premedication was given, and succinylcholine was administered in only 5/75 (6.7%) patients. The authors' claim that their procedure met the "French legal standards and the recommendations of the French society of Anesthesiology and Critical care" may well be true, but does not excuse the fact that many of their patients were thereby exposed to unwarranted risks of fracture and bradycardia, both of which occurred with unusual frequency in their sample. (Strikingly, the "severe bradycardia" in 4 of the un-premedicated patients resolved after the administration of atropine.)
2. A Guedel oral airway (a hard plastic device) was inserted between the teeth "as required" before inducing the seizure. I have pointed out elsewhere (Abrams, 2002) that the Guedel airway is contraindicated for ECT anesthesia because of the high risk of dental fracture it presents; indeed, 3 patients sustained dental fractures, a frequency heretofore unheard of in modern ECT (although it is not stated whether those 3 had a Guedel airway in place at the time of the fracture).
3. An unspecified number of patients received concomitant lithium, tricyclics, neuroleptics, and benzodiazepines, "which changed several times during the course of the study." Co-administration of psychotropic drugs has no rationale during ECT and serves only to increase the risk of side-effects (e.g., confusion, prolonged apnea, hypotension, shortened seizures).
4. Nowhere in the article do the authors state their definition of "complication" or "life-threatening complication," the determination of which constituted the point of conducting the study.

Their claim that "chest pain, ECG modification, and asystole" (not further defined) were potentially life-threatening events is unsupported by any literature citations.

5. Moreover, several events the authors list as complications are not complications at all, but side-effects (e.g., headache, nausea, confusion, agitation) or simply the *prima facie* result of poor anesthesia technique (traumatic wound, laryngospasm, bronchospasm, bone fracture, aspiration pneumonia).
6. Although the authors make much of their observation that 1/3 of patients suffered confusion for more than 2 hours after ECT, they nowhere define what they mean by confusion or describe the means they used to measure it. The "hypertension" they observed in 15% of patients likewise remains undefined.

In short, inadequate study methodology and poor anesthesia technique render this report incapable of supporting the authors' assertion that ECT is not a low-risk procedure and should therefore not be performed regularly on an outpatient basis. On the contrary, inpatient and outpatient ECT is given all over the world with a mortality rate that is vanishingly small,¹ rendering it very likely the safest procedure to be carried out under general anesthesia.

Richard Abrams, MD

Professor of Psychiatry
Chicago Medical School

Dr. Abrams is a Director of Somatics LLC
Manufacturer of the Thymatron ECT
device used in the study

REFERENCE

1. Abrams R. *Electroconvulsive Therapy*. 4th ed. New York: Oxford University Press; 2002.

ECT Devices in India

To the Editor:

In a recent survey of the practice of ECT in India, Chanpattana et al¹ observed that ECT devices used in the country included 20 "Indian-built" machines,

a MECTA device, and a Thymatron device. We are disappointed that the article did not list the Indian devices and would therefore like to highlight the details of Indian devices that may have been used and that were not referred to in the article.

The leading constant current, brief-pulse devices used in India are the Niviqure, the Medicaid, and the Medicare models. The Niviqure device was developed in 1992 as a collaborative project between the National Institute of Mental Health & NeuroSciences (NIMHANS) and the Bangalore chapter of the National Institution for Quality & Reliability (NIQR). NIMHANS is the leading tertiary mental health care center in the country, and NIQR is an organization that sets standards for engineering ventures. The project was led by one of the authors of this letter (B.N.G.) and was executed by Techno Nivilak, a company that represented NIQR.

The Niviqure device is now available in several models, ranging from basic to advanced. The basic model varies the stimulus duration (only) to deliver a charge ranging from 30 mC to 540 mC. The advanced models provide for simultaneous EKG and EEG recording, and allow a sophisticated control over all aspects of the stimulus delivered.

The Niviqure device has fast become the most popular ECT device in the country for clinical application and research. At present, almost 400 centers in India use the Niviqure device. The device has been supplied through the World Health Organization to various mental health centers in India. Finally, the device is the preferred model for research in which a very strict control over stimulus specifications is required.^{2–7} The fidelity of the device also has been recorded.⁸

Chittaranjan Andrade, MD

B. N. Gangadhar, DPM, MD

National Institute of Mental Health and
Neurosciences
Bangalore, India

REFERENCES

1. Chanpattana W, Kunigiri G, Kramer BA, et al. Survey of the practice of electroconvulsive

- therapy in teaching hospitals in India. *J ECT*. 2005;21:100–104.
- Andrade C, Kurinji S, Sudha S, et al. Effects of pulse amplitude, pulse frequency, and stimulus duration on seizure threshold: A laboratory investigation. *J ECT*. 2002;18:144–148.
 - Kurinji S, Andrade C. ECS seizure threshold: normal variations, and kindling effects of subconvulsive stimuli. *J ECT*. 2003;19:31–37.
 - Andrade C, Akki A, Nandakumar N, et al. Repeated subconvulsive electroconvulsive shocks lower the seizure threshold: a controlled study of whole-brain kindling. *J ECT*. 2003;19:81–83.
 - Sudha S, Andrade C, Mukundan CR, et al. Spectral EEG effects of electroconvulsive shock stimulus parameters: The development of a rationale for the optimization of the ECT stimulus. *J ECT*. 2003;19:197–210.
 - Girish K, Gangadhar BN, Janakiramaiah N, et al. Seizure threshold in ECT: Effect of stimulus pulse frequency. *J ECT*. 2003;19:133–135.
 - Kotresh S, Girish K, Janakiramaiah N, et al. Effect of ECT stimulus parameters on seizure physiology and outcome. *J ECT*. 2004;20:10–12.
 - Andrade C, Kurinji S, Laxmana G. Fidelity of ECT devices: An alert to clinicians [*Corrigendum*, *Indian J Psychiatry*. 2004;46:278]. *Indian J Psychiatry*. 2003;45:239–243.

Electroconvulsive Therapy in Organic Bipolar Disorder With Multiple System Atrophy

To the Editor:

Multiple system atrophy (MSA) is a heterogeneous group of disorders characterized by Parkinsonism that is poorly responsive to levodopa therapy and by varying degrees of cognitive impairment, autonomic, cerebellar, and pyramidal dysfunction.¹ We present a case of organic bipolar disorder in a patient with young-onset MSA that was successfully treated with electroconvulsive therapy (ECT).

A 25-year-old man with no past or family history of mental illness presented with a 2-year history of resting tremor, rigidity, postural instability, dysarthria, dystonia, and pyramidal signs and a 6-month history of elated mood, grandiosity, excessive speech, and energy. His

diagnosis was MSA with organic mania (ICD-10 criteria). He had not been treated for either condition before his presentation to our center. Mania resolved completely after 2 months of treatment with olanzapine 10 mg/d and valproate 1200 mg/d. Olanzapine was tapered and stopped after resolution of manic episode; valproate was continued as a mood stabilizer. Eight months later, the patient stopped valproate because of dysphagia and developed a second episode of mania. Valproate was restarted but was stopped because of worsening tremors. Because levodopa and carbidopa had been started for parkinsonian symptoms, clozapine was preferred over olanzapine for this episode. Manic symptoms resolved in 3 weeks with the administration of clozapine 75 mg/d.

Three months later, the patient developed depressed mood, anhedonia, anergia, social withdrawal, suicidal ideation, and neglect of biologic needs while taking clozapine. His Beck's Depression Inventory (BDI)² score was 37. We diagnosed him with organic bipolar affective disorder. After informed consent, the patient received 7 bilateral ECT while on levodopa and carbidopa. After the third session of ECT, depressive symptoms improved but painful dystonia continued, and he responded to lorazepam 4 mg/d. The patient's improvement plateaued after the sixth ECT. He had a complete recovery without cognitive deficits but showed an inexplicable restlessness of the feet after the first two ECT that resolved spontaneously. At discharge, the patient was cheerful, eager to resume academics, and was eating well (BDI score of 1).

This report is the first of a patient diagnosed with organic bipolar disorder with MSA who responded to ECT. It is also the first case in which two sequential episodes of mania were treated successfully with valproate plus olanzapine and clozapine, respectively. A search of the literature (MEDLINE using the key words depression, multiple system atrophy, ECT) revealed 2 cases of unipolar depression with MSA^{3,4} that improved with unilateral and bilateral ECT, respectively. In the former, Parkinsonian symptoms did not improve, whereas in the latter it did. However in this case ECT did not ameliorate symptoms of MSA.

Deepika Shaligram, MD
Prasoon L. Gupte, MD
Mathew Varghese, MD
Ravi S. Pandey, MD

Department of Psychiatry
 National Institute of Mental Health and
 Neurosciences
 Bangalore, Karnataka, India

REFERENCES

- Jankovic J. Movement disorders. In: Goetz CG, ed. *Textbook of Clinical Neurology*. 2nd ed. Philadelphia: Saunders; 2003:713–739.
- Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: twenty-five years of evaluation. *Clin Psychol Rev*. 1988;8:77–100.
- Ruxin RJ, Ruedrich S. Case report and review: ECT in combined multiple system atrophy and major depression. *Convuls Ther*. 1994;10:298–300.
- Hooten WM, Melin G, Richardson JW. Response of the Parkinson symptoms of multiple system atrophy to ECT. *Am J Psychiatry*. 1996;155:1628.

ECT and Aortic Aneurysm

To the Editor:

Bailine et al¹ reported a case of successful ECT in an elderly male with aortic aneurysm. The case was successfully treated using non-invasive monitoring. They reviewed recent published cases of ECT with aortic aneurysm.

We previously reported 2 cases of successful ECT with aortic aneurysm in this journal in 1993.² These cases were also managed with non-invasive monitoring. Our report reviews the prior literature in detail, including a summary of treatment details and method of cardiovascular monitoring in 15 cases from 1952 through 1990.

Taken together, the literature supports the conclusion of Bailine et al that ECT can be safely performed in the setting of aortic aneurysm with non-invasive monitoring.

Andrew Francis, PhD, MD
 Professor of Psychiatry
 SUNY Stony Brook
 Stony Brook, New York

REFERENCES

- Bailine SH, Sciano A, Millman B. ECT treatment of a patient with aortic aneurysm. *J ECT*. 2005;21:178–179.
- Dowling FG, Francis A. Aortic aneurysm and electroconvulsive therapy. *Convuls Ther*. 1993;9:121–127.

Knowledge About and Attitudes Towards ECT: Methodological Issues

To the Editor:

During the past 4 years, the Journal of ECT has published nearly a dozen articles or letters on the subject of knowledge about and attitudes toward ECT. I wish to address certain methodological issues related to research conducted in this field.

Gazdag et al¹ examined knowledge about and attitudes toward ECT in Hungarian medical students. There was a puzzling finding. Although the students had not yet been exposed to the psychiatry seminars, and although their self-acknowledged knowledge of psychiatry in general and ECT in particular was rated to be minimal, they were actually moderately well-informed about the subject even to the extent of being aware of certain technical details about the treatment. Unless the students were modest in their self-assessments, explanations for this contradiction are necessary. One possibility is that consent procedures (which are customary before any study is conducted on human subjects) usually involve the provision of some information about the study; this information can cue subjects and contaminate their responses to questionnaires which examine knowledge and attitudes. In consequence, the responses of the students may have suggested that they were better informed than they actually were.

The biasing influence of information provided during consent procedures may also explain a puzzling finding in the study of Andrews and Hasking,² the absence of a difference in impact between an educational video and an educational pamphlet on knowledge about and attitudes toward ECT. A picture is worth a thousand words and, assuming that the two forms of education were equal in content, one would have

expected the video presentation to have had a greater educational impact than the pamphlet. However, if the participants in the study knew that they would be reassessed after the education, they would be likely to make an extra effort to absorb and retain the information conveyed. Thus, a Hawthorne effect³ may have biased the results of the study. With especial reference to the study of Andrews and Hasking,² the two-week interval would have allowed the participants an opportunity to privately revise their learning so that they would be better prepared for the retest. It may be argued that the two intervention groups fared better than the control group at the second assessment, with the implication being that if the control group did not prepare for the second assessment, neither did the intervention groups. However, a counter-argument is that the expectation of improvement existed only for the intervention groups, again bringing the Hawthorne effect³ into play.

Another biasing influence is the identity of the person who administers the questionnaire. Socially desirable answering is well known to occur in attitude surveys; responses can vary widely, depending on whether the person who asks the questions is a priest or a prostitute, a pretty woman or a scruffy tramp. In this context the medical students who participated in the Gazdag et al study¹ may have reasoned that if ECT is practiced in their hospital, and if it is their teachers (who practice ECT) who are asking the questions, ECT is unlikely to be outmoded, dangerous, or likely to cause brain damage. The responses could have been quite different had the questionnaire been administered outside the campus by a person who had no known bias toward ECT.

To avoid biasing influences such as those discussed here, in our studies on knowledge and attitudes the questionnaires were administered by a neutral person such as a peer, or a research officer who did not work in the same environment. Our consent procedure was also as neutral and informal as we could make it. We told subjects that ECT is

a treatment procedure that is sometimes used in psychiatry, and that we wished to learn what they know and what they think about it. No further information was provided.

On a closing note, I would like to narrate two of our experiences in our first study in the field. In this investigation,⁴ we recruited only those students who could be sampled in a captive setting, such as before or after a scheduled lecture. This was because we discovered (in a pilot study) that if we gave the questionnaire to students and asked them to return the completed questionnaire the next day, there was a high likelihood that the students would answer after reading on the subject from their medical texts. We also made no attempt to later contact the students from a batch who were absent from the setting in which their peers were sampled. This was because we were found that questionnaire completors often discussed their experiences with the absent students thereby biasing the responses of the latter.

In conclusion, knowledge and attitude studies in the field of ECT should guard against a wide range of biasing influences, and publications arising from these studies should explicitly detail the precautions that were taken to avoid sources of confound such as those described herein.

Chittaranjan Andrade, MD

Professor in Psychopharmacology
National Institute of Mental Health
and Neurosciences
Bangalore, India

REFERENCES

1. Gazdag G, Kocsis-Ficzere N, Tolna J. Hungarian medical students' knowledge about and attitudes towards electroconvulsive therapy. *J ECT*. 2005; 21:96-99.
2. Andrews M, Hasking P. Effect of two educational interventions on knowledge and attitudes towards electroconvulsive therapy. *J ECT*. 2004; 20:230-236.
3. Lawrie SM, McIntosh AM, Rao S. Critical appraisal for psychiatry. Edinburgh: Churchill Livingstone, 2000.
4. Andrade C, Rao NSK. Medical students' attitudes towards electroconvulsive therapy. *Convulsive Ther*. 1996;12:86-90.