

THE ROYAL AUSTRALIAN AND NEW ZEALAND COLLEGE OF PSYCHIATRISTS

Clinical Memorandum #12

ELECTROCONVULSIVE THERAPY

Guidelines on the administration of electroconvulsive therapy (ECT).

1. INTRODUCTION

- 1.1 Electroconvulsive therapy has been an important and effective treatment in psychiatry for over half a century. Its effectiveness in a variety of psychiatric conditions has been established beyond doubt. For many years the practice and technique of ECT remained relatively unchanged but in the 1990s there have been new developments, based on research, which have resulted in changes to the way in which ECT is understood and practised. While there continues to be debate about some controversial issues, particularly in relation to dosage techniques, there are nevertheless many areas of general agreement. This memorandum is an attempt to outline, for practitioners and other interested parties, currently acceptable guidelines for the prescription, practice and procedure of ECT. It is intended to mainly guide and assist clinicians and is not intended to be an extensive review of ECT, with an exhaustive list of references. Some key references however, are provided for the interested reader. There are reviews of efficacy for depression¹ and schizophrenia (acute psychoses).²

2. INDICATIONS

- 2.1 The principal indications for ECT will always be based upon a thorough physical and psychiatric evaluation of the individual, taking into account the illness, the degree of suffering of the patient, the expected therapeutic effect and the prognosis if such treatment is withheld.
- 2.2 The primary indication for ECT is major depression, especially with melancholia, catatonic or psychotic features and/or suicidal risk / failure to eat or drink adequately; or when there has been inadequate response to antidepressant medication. Other indications are mania and schizophrenia with acute features. ECT may also be helpful in certain conditions such as neuroleptic malignant syndrome and Parkinson's disease.³

3. CONTRAINDICATIONS

- 3.1 With the exception of raised intracranial pressure, there are no absolute contraindications to ECT although there are a number of clinical situations in which extra caution is required. ECT is among the least risky of medical procedures carried out under general anaesthesia⁴, and substantially less risky than childbirth.⁵

4. SITUATIONS OF HIGH RISK

- 4.1 Although there are no absolute contraindications to ECT, there are certain situations of high risk which necessitate the adoption of appropriate precautions. It is strongly

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recommended that appropriate consultation with the anaesthetist and/or the patient's treating physician is made prior to a course of ECT in all of the following situations.

4.1.1 Hypertension

Elevation of blood pressure during the tonic-clonic phase of ECT is usual and may at times be marked. Patients with pre-existing hypertension should have their blood pressure stabilised with appropriate treatment prior to commencing a course of ECT.

The use of antihypertensive agents during the procedure for patients with hypertension may be necessary to prevent excessive elevation of blood pressure.

4.1.2 Myocardial Infarction

Recent myocardial infarction is generally regarded as a situation of high risk for ECT. There are no reliable data to indicate how long after myocardial infarction it is safe to proceed. Extreme caution is recommended within the first 10 days and the risk in general decreases over the ensuing 3 months.

4.1.3 Bradyarrhythmias

Slowing of the heart rate is usual in the few seconds immediately following the application of the electrical stimulus. Patients with a pre-existing bradycardia or heart block are therefore at risk of a clinically relevant bradycardia or asystole. The risk is theoretically increased in the case of stimuli which do not produce a convulsion, such as during a dose titration procedure. The pre-treatment use of an anticholinergic agent such as atropine should be considered in these situations.

4.1.4 Cardiac Pacemakers

Electrical stimulus is normally prevented from reaching the heart by the high resistance of the intervening tissues. All monitoring equipment must be properly grounded and patients must not be touched or held during the stimulus by anyone in electrical contact with ground. It is recommended that such patients should be treated in a setting which provides ready access to coronary care. It is also recommended that the functioning of the pacemaker is checked by a pacemaker technician before and after ECT treatment.

4.1.5 Intracranial Pathology

ECT has been safely and effectively used in the presence of a variety of intracranial lesions, including infarction, haemorrhage, dementias, intracranial aneurysms, trauma and tumours not associated with raised intracranial pressure^{6/7/8}. The risks of ECT treatment should be carefully evaluated on an individual basis in these cases. However, if intracranial pressure is raised, treatment with ECT is contraindicated^{3/8}. Caution should also be exercised in the presence of recent brain injury, infection, stroke or haemorrhage⁹. Patients with organic brain lesions or pre-existing cognitive impairment are likely to be more susceptible to the cognitive side effects of ECT and appropriate caution is recommended.

4.1.6 Aneurysms

Particular care to avoid treatment-induced hypertension is required in the presence of vascular aneurysm, including intracranial and abdominal aneurysms. It is strongly recommended that a thorough evaluation by the appropriate surgeon/neurosurgeon/neurologist be done before proceeding with ECT in the presence of vascular aneurysm.

4.1.7 **Epilepsy**

Epilepsy does not represent a significant risk factor for ECT as long as it is diagnosed and treated, and the underlying structural or vascular lesions are excluded⁹. There may be an increased risk of inducing status epilepticus and EEG monitoring for these patients is necessary. The risk of status epilepticus may be modified by the continuation of the patient's anticonvulsant medication during the course of ECT, though this will raise seizure threshold so the medication dosage should be reduced to mitigate any possible loss of seizure quality and efficacy. It should be noted that ECT is often, but not always, associated with a rise in seizure threshold and patients with epilepsy are not likely to have spontaneous or prolonged seizures during the course of ECT⁹.

4.1.8 **Osteoporosis**

Patients with osteoporosis are at risk of fracture during unmodified or poorly modified ECT. Muscle relaxants should be given in adequate doses, and sufficient time allowed for the relaxant to take full effect before treatment proceeds. An electronic device may be used to test for full muscle relaxation though the assessment of quadriceps relaxation by testing the patellar reflex is a simple and useful way to confirm full relaxation. The holding down of patients during the procedure is not necessary with adequate relaxation and is likely to increase the risk of fracture.

4.1.9 **Skull Defect**

Special care must be taken to place electrodes away from skull defects and/or metal plates to avoid excessive local current density at the site of the defect or plate.

4.1.10 **Retinal Detachment**

ECT induces raised intraocular pressure and may predispose susceptible patients to retinal detachment. Pre-ECT ophthalmic consultation and adequate control of blood pressure are required for these patients.

4.1.11 **Concurrent Medical Illness**

The anticipated effects of the patient's medical status, including current medications, upon the risks and benefits of ECT should play a part in the decision as to whether to administer ECT. The evaluation of medical conditions and their interaction with ECT should incorporate pertinent laboratory and other tests and consultation with appropriate medical personnel when indicated. The ECT procedure should be modified to lower morbidity, e.g. changes in ECT technique, the use of pharmacological agents, administration of ECT in a general hospital and the presence of additional medical personnel or monitoring procedures.

5. **EVALUATION FOR ECT**

5.1 **Pre-ECT Evaluation**

5.1.1 It is the task of the psychiatrist caring for the patient to ensure that the patient suffers from a condition for which ECT is indicated. If there is doubt about the clinical condition, or ability to consent, of the patient, then it is recommended to obtain a second psychiatric opinion about the suitability for ECT.

5.1.2 Full medical history and physical examination, including fundoscopy, are necessary. No laboratory investigations are specific for ECT, but investigation of blood and urine, chest x-ray, and ECG are usually performed, with other

investigations according to clinical need. Similarly, neuroimaging may be required, in particular if raised intracranial pressure is suspected. Spinal Xray, EEG and pseudocholinesterase testing are not required for routine screening¹⁰.

- 5.1.3 Anaesthetic consultation is suggested for the purpose of establishing the relative individual risk of general anaesthesia within the conditions under which ECT is performed. Other specialists from internal medicine may also be consulted as appropriate.

5.2 Review of Patient Progress During Course of ECT

- 5.2.1 It is not advisable to prescribe a pre-determined number of treatments. The patient must be reviewed after each ECT treatment by a medical officer, who should assess the efficacy of treatment and any adverse events, especially delirium.

Standardised rating scales for the longitudinal assessment of mental state (such as the Hamilton or Beck rating scales for depression) and of cognition (such as the Folstein Minimental State Examination) may be useful in assessing clinical progress. The Clinical Global Impression (CGI) scale is a useful general assessment tool.

- 5.2.2 ECT should continue until optimal clinical improvement is noted, but there is no rationale for continuing beyond this point. Stable improved status over 2 or 3 treatments would normally demonstrate optimal improvement. Failure to improve should lead to review of the relative electrical charge delivered, electrode placement, EEG quality after the ECT stimulus, the number of treatments delivered, and indeed the clinical presentation of the patient.
- 5.2.3 The opinion of a second experienced psychiatrist should be sought when there is doubt about the decision to recommend ECT, or when there is a failure of the patient to improve in a course of ECT.
- 5.2.4 ECT should be discontinued if the patient develops a medical condition which impacts significantly upon the ongoing use of ECT, and advice should be sought from an appropriate medical specialist. ECT should also be discontinued if a patient revokes consent and appropriate advice should be provided regarding further management.

6. USE OF CONCURRENT MEDICATIONS

The following guidelines are derived from limited human and animal research findings¹¹. It is recognised that many patients receiving ECT will be administered concurrent psychotropic medications with the potential to alter significantly seizure propagation, and therefore impact negatively on the efficacy of ECT.

6.1 Antidepressants

Given that many patients with depression receive ECT because of the failure of antidepressant medication and that concurrent use of antidepressants has not been demonstrated to improve the efficacy of ECT, there would seem to be no rationale in continuing the same antidepressant during the course of ECT. However, it is reasonable practice to commence maintenance post-ECT pharmacotherapy towards the end of a course of treatment. There is no good evidence that the concurrent use of antidepressants has any major effect on response to ECT⁴⁸

Whilst associated with seizures in 4-9% of cases at both therapeutic doses and in overdose^{12/13}, little is known about the combined effects of tricyclic antidepressants (TCAs) and ECT on seizure threshold. Deaths have been reported in patients with known cardiac illness who had received concurrent TCAs¹⁴. Whilst a number of anecdotal reports suggest that the selective serotonin reuptake inhibitors (SSRIs) are associated with prolonged seizures, the only study of the combination of ECT and a SSRI (fluoxetine) did not show statistically longer seizures¹⁵. No effect on seizure prolongation was found with combination ECT and venlafaxine⁴⁹. Although the combination of ECT and irreversible monoamine oxidase inhibitors appears to be safe¹⁶, there are issues related to anaesthetic practice which suggest that the agents should be discontinued prior to ECT. There is no information on the effects of combined ECT with mirtazapine, reboxetine or moclobemide.

6.2 Benzodiazepines

Benzodiazepine tranquilisers and hypnotics including the shorter acting compounds, are not recommended for routine use, given their anticonvulsant nature. It would be advisable to withdraw completely, or at least minimise the total dosage of these medications before the course of ECT. The short term use of sedative antipsychotics in low dose would seem to represent the best alternative for both night sedation and agitation.

6.3 Mood Stabilisers

Both carbamazepine and sodium valproate increase seizure threshold. If they are used for mood stabilisation consider reducing or ceasing these medicines in the early phase of treatment as that will minimise the stimulus doses needed. They may be recommenced at the end of treatment.

In contrast, patients with epilepsy should continue to receive their anti-epileptic medication, and consultation with a neurologist is recommended. The dose of anti-convulsants may require temporary reduction.

Lithium prolongs the neuromuscular blockade of succinylcholine¹⁷ and has been reported to increase the risk of post-ECT delirium¹⁸. Although there is not a contraindication to the concomitant administration of lithium during a course of ECT^{6/10}, some patients on lithium (even at low dose) become very confused with ECT. The general principle is that lithium be suspended during ECT unless there is a strong reason to its continuation. However some bipolar patients who are well controlled on lithium run the risk of ECT-induced mania if lithium is discontinued. Because rapid reduction of lithium doses can result in subsequent loss of benefit with lithium it is usually desirable to continue this agent at the lowest effective dose for the patient.

7. ANAESTHESIA

7.1 Anaesthesia for ECT should be administered by fully trained specialists, ie registered medical practitioners with Fellowship of the Australian and New Zealand College of Anaesthetists (FANZCA) or equivalent qualifications. In some facilities, a trainee anaesthetist who has received adequate training and who has access to appropriate supervision may administer anaesthesia. A member of the nursing staff suitably trained in anaesthetic practice and resuscitation must be available to assist the anaesthetist. Adequate equipment including a breathing system for administration of 100% O₂, suction apparatus, pulse oximeter, CO₂ measures and a cardiac defibrillator, should be available¹⁹.

7.2 It is the anaesthetist's responsibility to stay with the patient until they are safely transferred to the care of the recovery area staff. All patients recovering from

anaesthesia must be supervised in an area designated for that purpose²⁰. Standard precautions must be adopted for all anaesthetic practice in terms of infection control.

- 7.3 Psychiatrists administering ECT may usefully acquaint themselves with aspects of physiological changes in the patient during ECT and the issues relevant to the anaesthetic^{50/51}.

8. TREATMENT PROCEDURES

8.1 Preparation of the Patient

All patients selected for the administration of ECT should have the procedure, including the side-effects, carefully explained to them by the medical and nursing staff involved in the care of such patients. Educational pamphlets and videos of the procedure are useful for this purpose. Patients should be fasted for 6-8 hours before the procedure, unless otherwise advised by the anaesthetist. Patients should be advised to refrain from smoking at least for 2 hours prior to treatment to minimise risk of excessive bronchial secretions. Appropriate attention should be paid to ensure hair is clean and free of grease and wax, and that dentures and jewellery are removed.

8.2 Location and Equipment

A dedicated ECT suite or area should be available and this should comprise a waiting area, treatment room, and recovery area with appropriate privacy. A designated member of nursing staff in charge of the ECT suite and maintenance and checking of all equipment, along with co-ordination of all aspects of carrying out the treatment is recommended. The patient should be supervised during each phase of treatment, including when in the waiting room. Nursing staff caring for patients in the recovery room should have adequate training in recovery room procedures.

8.3 ECT Devices

It is now standard practice in centres which provide ECT in Australia and New Zealand that modern ECT devices with EEG monitoring capacity are used. These machines have a number of safety features and allow for easy determination of stimulus dose. It is recommended all hospitals providing ECT should be equipped with such a modern ECT device.

8.4 Electrode Placement

8.4.1 Bilateral or unilateral. The relative efficacy of right unilateral and bilateral ECT is still controversial^{52/53}. Some studies have found superior efficacy with bilateral (bitemporal) therapy^{21/22/23/24} whereas others have reported equivalent efficacy^{25/26/27/28} only when significantly suprathreshold ($\times 2.5 - 6$) unilateral stimuli were used⁵⁴. There is some recent support for bifrontal placements and the use of left frontal with right temporal (LART) though the data on such treatment is limited. Two studies suggest that bifrontal placement has similar efficacy to bitemporal placement but with lesser cognitive effects at equivalent dose^{56/57}.

8.4.2 Commencing treatment. The previous ECT experience in a patient will dictate electrode placement in a new course of treatment. As a standard practice, one may commence with non-dominant unilateral ECT using the d'Elia position, but if there is no response after 4 - 6 treatments, changing to bilateral treatment should be considered. However, if a particular patient has responded only to bilateral treatment in the past, or faster therapeutic response is necessary (eg patient being highly suicidal or compromised in food intake), treatment can reasonably commence with bilateral ECT. Seizure threshold varies widely between patients²⁷ and increases in a course of treatment.

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- 8.4.3 Cognitive effects during ECT. It is now well established that unilateral placement of electrodes over the non-dominant hemisphere causes less severe cognitive side effects than bilateral placement at lower energy levels but this benefit is not sustained when higher energy levels are required^{19/20/47}.

Increasing confusion or memory problems with either bilateral or unilateral treatment should result in a consideration of reduced frequency of treatments, or unilateral treatment as an alternative to bilateral treatment.

8.5 Stimulus Dosing

- 8.5.1 Stimulus dosing refers to the electrical dosage required to elicit adequate therapeutic seizure. Higher doses are generally more effective, but they also cause more cognitive side effects. Hence, an optimal dose has to be determined for each patient and for each treatment for that patient. This is not a simple task. It can be approached in a number of ways:

- a) Establishing the seizure threshold by titration method on the first treatment, then administering higher doses during subsequent treatment (e.g. 1.5 times the threshold stimulus for bilateral treatment, and at least 3 times the threshold stimulus for unilateral treatment). Two studies suggest that very high dose (e.g. 6 times the threshold stimulus) has greater efficacy than moderate threshold doses 30/31. However, as seizure threshold tends to increase during a course of ECT, this has to be taken into account, with dose increases as treatment progresses.
- b) Using established algorithms (eg age and/or gender based) to determine the initial dose and then vary the dose according to clinical progress and quality of seizure as judged from the EEG tracing. Standard text books 32/33 and operational manuals from the manufacturers of the ECT device should be consulted. Each hospital should determine their preferred method of stimulus dosing and provide training accordingly to their staff who administer ECT.

8.6 EEG Monitoring

- 8.6.1 Preliminary evidence suggests that seizure quality and degree of post-ictal suppression are related to treatment efficacy.
- 8.6.2 EEG monitoring is essential in determining the quality, duration and end point of seizures during ECT. EEG monitoring should be considered best practice. Without EEG monitoring prolonged seizures in the absence of motor manifestations can be easily missed resulting in adverse consequences to patients.

8.7 Physiological Monitoring

- 8.7.1 During the ECT procedure, pulse, blood pressure, and oxygenation should be regularly monitored until stabilisation is reached. ECG monitoring should be carried out from prior to anaesthesia induction until recovered from anaesthesia.
- 8.7.2 The longest duration of any seizure-related motor activity should be used to determine the motor end point. The measurement of seizure-related motor activity is facilitated by using the cuff technique.

8.8 Management of Missed, Inadequate or Prolonged Seizures

8.8.1 Missed or Inadequate Seizures

- a) The muscular contraction that usually accompanies the delivery of the electrical stimulus should not be mistaken for a seizure. With missed seizures there should be a 20 - 40 second delay before re-stimulation to take into account the possibility of a delayed onset of seizure.

Re-stimulation should be at a higher intensity, after a quick check that the electrical connection is not at fault, including the electrode contact.

- b) If the seizure is inadequate (e.g. less than 15 - 25 seconds on EEG or if EEG morphology is poor), re-stimulation at a higher intensity may be considered after an interval of 60 - 90 seconds because of the refractory period. It should be noted that during the course of the ECT in the elderly, there is a tendency for shorter seizures than in younger patients, and it may not be necessary to restimulate.

8.8.2 Prolonged Seizures

- a) Seizures persisting for more than 120 seconds by motor and/or EEG criteria should be considered prolonged seizures. EEG monitoring is recommended to monitor prolonged seizures. These should be terminated pharmacologically by either administering more of the anaesthetic agent (except ketamine) or by intravenous fast-acting benzodiazepine such as midazolam 1 - 2 mg.
- b) Oxygenation should be maintained during and immediately following prolonged seizures.

9. POST-ECT MANAGEMENT

- 9.1 Immediate post-anaesthetic care should be provided in an appropriately equipped recovery area by a registered nurse, trained in recovery procedures and resuscitation techniques, with access to prompt medical assistance. The patient should be nursed in the left lateral or supine position with a clear airway being maintained. A nurse should be present with the patient at all times and monitor consciousness and other routine observations on a regular basis. The intravenous line should be maintained in case rapid medication is necessary. The patient should not leave the recovery area until alert, and should be assisted back to the ward on a wheelchair or trolley, if appropriate.

10. ADVERSE EFFECTS AND THEIR MANAGEMENT

- 10.1 A number of immediate side effects, such as headache, myalgia, nausea, and drowsiness are benign and should respond to symptomatic or supportive therapy.
- 10.2 The cognitive side effects of ECT are of most concern to clinicians and to patients. It should be noted that evidence for much of this is based on older studies which used ECT machines with sine wave stimulus and bilateral electrode placement^{4/5}. It should also be noted that severe depressive illness per se is associated with cognitive impairment, and that this may improve as the depression responds.
- 10.3 The features of an acute post-ECT delirium may vary from impaired comprehension and disorientation, which is not unexpected in most patients and for which close nursing

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supervision and support is adequate, to severe psychomotor restlessness, which may require the administration of intravenous psychotropics.

A persistent post-ECT delirium may be observed in a small proportion of patients, in which case physical investigations should be considered. Techniques which may minimise the extent of delirium include the use of unilateral ECT in association with moderate suprathreshold electrical dosage, reduction in the frequency of treatment and minimisation of concurrent psychotropic medications. Some patients with post-ECT confusion have ongoing ictal activity (non-convulsive status epilepticus) than can be shown on EEG monitoring, and it can be stopped with agents like midazolam.

10.4 Unilateral ECT using modern brief-pulse machines is associated with anterograde amnesia (inability to learn new information) and retrograde amnesia (memory loss for events or information before ECT). Bilateral ECT and ECT at high doses are associated with greater cognitive impairment, but these effects vary from patient to patient. Any memory impairment is usually resolved by 4-6 weeks following ECT, but a number of patients report persistent difficulty with retrograde memory. In some cases, persistent subjective complaints of memory disturbance after ECT seem to show greater correlation with residual depression, rather than with any objective evidence³⁴.

10.5 There is no evidence that ECT causes any structural cerebral damage³⁵.

11. SPECIAL POPULATIONS

11.1 ECT in Children and Adolescents

11.1.1 Research^{36/37} suggests that the indications, effectiveness and side effects of ECT in adolescents are similar to those in adults. The predictors of response and non-response also appear to be similar. Although there has been concern in the literature about young persons having increased rates of prolonged seizures compared to adults, the data is not compelling. There is currently no evidence to suggest that ECT causes damage to a young person's brain or adversely affects brain development. However, there is very little empirical data on this subject and therefore no definite conclusions can be drawn.

11.1.2 Consent issues warrant particularly close attention when adolescents have ECT. It is advisable to seek the opinion of a child and adolescent psychiatrist prior to the treatment. Where possible, psychometric assessment should be performed at baseline and six months after completion of ECT.

11.1.3 Because there is little known about seizure threshold for ECT in adolescent patients, the method of stimulus dosing by individual titration of seizure threshold is recommended, starting with doses in the lower range of the ECT machine.

11.1.4 ECT is very rarely given to children prior to puberty; therefore, no clear recommendations can be made for this age group. In the few cases in which ECT was used, there were no problems reported³⁸.

11.2 Pregnancy

The decision whether or not to treat pregnant women with ECT needs to take into account the risks associated with alternative treatments, the risks to the mother and foetus of withholding ECT and any complications of the pregnancy which may increase the risks of ECT or the anaesthetic.

Pregnancy is not a contraindication to ECT and it may be used with confidence during the second and third trimesters³⁹. Little information is available for its use in the first trimester, including any potential teratogenic effects of drugs associated with ECT and, until further data are available caution is advisable during this stage. ECT does not produce abnormal uterine contractions and it appears to be safe even in complicated pregnancies⁴⁰. Foetal monitoring during ECT has not revealed any untoward effects on the foetus, although non-significant bradycardia has been noted during the tonic-clonic phase. In selected cases, treatment may need to be carried out in a setting which enables sophisticated maternal-foetal monitoring.

Careful maternal physiological monitoring is necessary and adequate control of ECT induced hypertension may be required.

Modifications to anaesthetic technique, particularly in the third trimester, may be required to ensure adequate oxygenation, and for prevention of aspiration. Close consultation and joint management with the obstetrician and anaesthetist is recommended.

11.3 The Elderly

Old age per se is not a risk factor for ECT, although many elderly will have concurrent medical morbidity. ECT may be particularly appropriate for use in this group of patients, given the increased incidence of psychomotor changes and psychotic features in old age depression⁴¹, and potential difficulty in tolerating antidepressant medication.

11.4 Cultural Considerations

Special cultural factors will need to be considered in the preparation of patients from certain cultural backgrounds and sensitivity to these needs is urged. Care will often be needed in preparing such patients and their families regarding treatment with ECT. For example, among the New Zealand Maori the head is sacred and a patient's family will need to be closely involved and consulted. In these circumstances the indications for ECT and all aspects of the process need to be very carefully explained and due sensitivity shown at the time of treatment.

12. POST-ECT RELAPSE PREVENTION

12.1 ECT is an acute treatment which is associated with high rates of illness recurrence in the absence of maintenance physical therapy⁴². It would seem best practice that all patients receive adequate pharmacotherapy for a pre-determined period following the completion of a successful course of ECT.

12.2 Limited data suggests that a tricyclic antidepressant or lithium at therapeutic dosage may help reduce the risk of depressive relapse or recurrence⁴³, and there is also some experience with the use of serotonin re-uptake inhibitors⁴⁴. Preliminary evidence suggests that where any particular antidepressant, used in adequate dose and duration, has failed to produce a therapeutic response prior to ECT, that antidepressant is probably not suitable as a maintenance agent⁴². It has also been speculated that the addition of an antipsychotic drug may improve the outcome of patients with psychotic depression⁴⁵.

13. COMMUNICATION AND REVIEW

It is recognized that a patient may have a principal treating psychiatrist and a separate psychiatrist who administers the ECT. Both these psychiatrists must ensure that there is a mechanism that ensures regular communications about the patient concerning clinical

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progress, the course of ECT and changes in treatment parameters, complications which might be occurring in treatment, the decisions to suspend or continue treatments, and issues of consent. This communication should occur in regard to acute treatment courses and during maintenance treatment courses.

14. CONTINUATION ECT and MAINTENANCE ECT

There are some patients with a mental disorder who have responded to ECT during the acute phase of their illness, but do not respond to adequate maintenance pharmacotherapy and psychotherapy, or do so for only short periods, or are unable to tolerate medications. The use of intermittent individual ECT treatments after achieving resolution of the acute illness is referred to as Continuation ECT (C-ECT) in the first 6 months of ongoing treatment when relapse prevention is the aim, and as maintenance ECT (M-ECT) after that period when the aim is the prevent occurrence of a new episode of illness. The distinction is arbitrary.

The frequency C-ECT and M-ECT is titrated according to the severity of illness and the outcome of the intervention, and may be an effective alternative strategy for relapse prevention in such patients. That frequency may vary from weekly to more than 4 weekly intervals. However, it should be noted that there is a paucity of controlled trials examining the efficacy, optimal duration or cognitive complications of maintenance ECT^{46/55}. Despite the absence of such trials, clinical experience suggests it is a useful approach for some patients, and the lack of such research should not deny these patients such treatment. It is important that there is continued close monitoring of clinical status including cognitive function during such treatment.

15. OUTPATIENT ECT

15.1 Given the safety of ECT, it may be appropriate or at times preferable for the treatment to be given as an outpatient procedure⁴⁷. In the case of maintenance or continuation ECT, treatment is given commonly on an outpatient basis and is considered standard practice, but it may also be appropriate for selected patients to be given an index course of ECT (two or three times weekly) during the acute illness, as an outpatient. Individual units are advised to develop their own criteria for patient selection, based on local facilities and circumstances, but in general the following criteria are recommended:

- a) Low risk of suicide
- b) Relatively less severe illnesses
- c) No impairment of nutrition or hydration
- d) Absence of significant concurrent medical illness
- e) Low anaesthetic risk
- f) Adequate family support, including providing transport to and from the hospital and observation and monitoring for 24 hours post ECT and post anaesthesia
- g) Adequate ability to comply with pre-ECT procedures, such as fasting
- h) Minimal cognitive impairment during the course.

15.2 Prior to having ECT it is expected that a general check of the patient's medical and mental state will occur that ensures the patient is fit to proceed to a treatment. This may be a shared responsibility between the patient's general practitioner, principal treating psychiatrist, ECT-administering psychiatrist and the anaesthetist. Mechanisms must be in place to ensure communication between these parties.

15.3 Patients having outpatient ECT should not drive, operate machinery or sign contracts or make major decisions on the day of treatment, and in the case of patients having an index course, should be advised not to work or drive until after the course is completed.

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- 15.4 Patients will normally require to be observed in the hospital or clinic for a period after ECT until they have been assessed as fit for discharge, according to the usual local protocol for any day-only procedure.

16. EDUCATION AND TRAINING

The technique of ECT has now become a complex procedure which requires practitioners to be adequately trained. It is not appropriate for ECT to be administered by psychiatry trainees who have not been trained by experienced senior practitioners. Trainees in psychiatry must satisfy the requirements of training in ECT set down by the RANZCP before being allowed to administer ECT unsupervised. All medical practitioners who wish to administer ECT should undergo specific training in modern methods of ECT, including the use of EEG monitoring, by attendance at an ECT training program, or undertaking several supervised sessions that include theoretical and practical discussion with an experienced and practising colleague who has already received training.

17. QUALITY AND CREDENTIALING IN ECT

- 17.1 Each institution which conducts ECT should have in place a formal process that oversees the availability and practice of ECT, the review of treatments including outcomes and complications, the monitoring of clinical indicators (such as those of the ACHS), the training of practitioners and the establishment of a credentialing process.
- 17.2 Individual institutions should grant privileges to administer ECT only to those medical practitioners who have received training and meet criteria for credentialing in ECT. There may be local regulations that define the criteria for credentialing in medical procedures in general, and for ECT specifically. However, specific criteria will cover minimum standards in the following areas: training and experience in ECT, knowledge of ECT theory and technique, practical skills in administering ECT, and ongoing maintenance of knowledge and skills. Reassessment of privileges for all medical practitioners should occur at least every 2 years but should be consistent with local regulations.

18. ADMINISTRATIVE ISSUES

18.1 Staffing

Each facility should determine minimum standards of staffing for the procedure of ECT for their own purposes, but as a guideline a minimum of three people should be present at the treatment i.e. the operator (an appropriately trained medical officer), a qualified anaesthetist and an ECT nurse trained in anaesthetic and resuscitation techniques and modern ECT practice. There should be sufficient staff for the patient to supervise throughout their time in the ECT unit.

18.2 Consent

The following are guidelines only and are to be read in conjunction with the relevant Mental Health Acts of New Zealand and each Australian state which will denote the specific code of practice.

- 18.2.1 Irrespective of the Mental Health Act in current use, all patients should be advised of the decision to use ECT and their consent for treatment sought.

- 18.2.2 It should be made clear to the patient that regardless of whether consent is given for each separate occasion of treatment, or for a course of treatment of unspecified length, consent may be withdrawn at any time.
- 18.2.3 Consent should be obtained for each new course of treatment. In the case of an acute treatment course, it is recommended that consent be reviewed and renewed after approximately 12 treatments. When there is consideration of a significantly longer duration of treatment it will be worthwhile to obtain the opinion of an experienced colleague. In the case of maintenance (continuation) ECT, it is recommended that patients renew their written consent at regular intervals, such as every 6 months or every 12 treatments.
- 18.2.4 When the ability of a patient to consent to treatment is brought into question, either before or during a course of ECT, it is essential that a clinical review occur and consideration should be given to a second opinion from a colleague.
- 18.2.5 A patient may be given ECT without his consent where the relevant Mental Health Act contains provisions to enable this. The provisions of the Act should also be followed in regard to obtaining a second opinion about treatment however the treating psychiatrist is encouraged to seek the opinion of a colleague. The treating psychiatrist should also consult with the family, giving information about the procedures being followed, with respect for patient confidentiality. Appropriate documentation concerning the consent process should be made.
- 18.2.6 The situations in which the specialist psychiatrist may decide to proceed with ECT without the consent of the patient may include the following circumstances:
- a) the illness is severe, and / or
 - b) alternative treatments have been considered that are either unsuitable for the patient, or have been unsuccessful, and
 - c) ECT is deemed to be the most appropriate treatment, and
 - d) the patient lacks capacity to consent, which has been given under the relevant Mental Health or Guardianship Act.

18.3 Documentation

- 18.3.1 It is recommended that documentation be used which records the following:
- a) an order for each treatment, specifying electrode placement and signed by the treating psychiatrist
 - b) details of the anaesthetic agents and dosages used, signed by the anaesthetist
 - c) ECT treatment parameters, namely electrical dose used, electrode placement and seizure duration, signed by the administering medical officer.
- 18.3.2 Space should also be available to record comments about treatment adequacy or untoward events.
- 18.3.3 Separate forms should also be in use for the documentation of pre-ECT observations and nursing procedures as well as post-ECT recovery details.
- 18.3.4 Care should be taken to ensure that ECT documentation complies with any requirements which may be imposed by various Mental Health Acts.

18.4 Organisation of ECT Service

18.4.1 It is recommended that within hospitals, the provision of ECT should be organised as an ECT Service or Department, under the direction of a psychiatrist, which will take the responsibility for:

- a) the development of Policies and Procedures for ECT
- b) supervision and quality control of ECT
- c) clinical consultation
- d) training of medical and nursing staff
- e) post graduate education
- f) research

18.4.2 As far as possible, the number of clinicians involved in giving ECT on a regular basis should be limited, to avoid loss of skills from infrequent practice. Hospitals should aim to have a medical practitioner experienced in ECT present at each treatment session to deliver the treatment and to supervise trainee psychiatrists who have not yet reached the standard of adequate training in ECT prescribed by the College.

18.4.3 A system of clinical review should be in place to allow for the communication of information between relevant clinicians regarding the treatment of each patient (eg EEG analysis, electrode placement and dosage used, progress and the development of side-effects) to ensure adequate continuity of care.

18.5 ECT Committees

The ECT service within hospitals needs good coordination and a committee of appropriate representatives, eg of ECT-expert psychiatrists, nursing staff, anaesthetists and administrators, is recommended. The existence of an ECT Committee tends to raise the profile of the ECT service, should facilitate the settling of administrative and staffing problems, and should help to ensure appropriate ongoing funding and quality assurance.

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