

ELECTROCONVULSIVE THERAPY



COURSE: CLINICAL ASSESSMENT AND INTERVENTION

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ELECTROCONVULSIVE THERAPY

Electroconvulsive therapy (ECT) is a procedure, done under general anaesthesia, in which small electric currents are passed through the brain, intentionally triggering a brief seizure. **ECT** changes brain chemistry that can quickly reverse symptoms of certain mental health conditions.

Convulsive therapy was used by Cerletti and Bini in 1938. They called it EST or electroshock therapy. Later, this method of treatment came to be known as ECT or electroconvulsive therapy. In 1974, the American Psychiatric Association's (APA's) Council on Research and Development appointed a Task Force on ECT. *The APA Task Force on ECT*, in 1976, gave its report which provided clear guidelines for use of ECT and declared it to be a safe and effective method of treatment when used by professionals trained in the technique. The 1990 APA Task Force Report on ECT redefined the indications, gave guide lines for obtaining consent and set standards for training, treatment and privileging of ECT.

Indications

The indications for electroconvulsive therapy are:

1. **Major severe depression**

- i. With suicidal risk (This is the first and most important indication for ECT)
- ii. With stupor
- iii. With poor intake of food and fluids
- iv. With melancholia
- v. With psychotic features
- vi. With unsatisfactory response to drug therapy
- vii. Where drugs are contraindicated, or have serious side effects
- viii. Where speedier recovery is needed.

2. Severe catatonia (non-organic)

- i. With stupor
- ii. With poor intake of food and fluids
- iii. With unsatisfactory response to drug therapy
- iv. Where drugs are contraindicated, or have serious side-effects.
- v. Where speedier recovery is needed.

3. Severe psychoses (schizophrenia or mania)

- i. With risk of suicide, homicide or danger of physical assault
- ii. With unsatisfactory response to drug therapy
- iii. Where drugs are contraindicated, or have serious side effects
- iv. With very prominent depressive features (e.g. schizo-affective disorder).

The use of ECT in mania and schizophrenia is not a treatment of first choice and is employed only in the above-mentioned conditions. A history of good response with ECT and patient preference for ECT also determine the use of ECT.

The 1990 APA Task Force on ECT also defined as *suggestive indications* (for occasional use) in the following disorders:

1. Organic mental disorders (e.g. organic mood syndrome, organic hallucinosis, organic delusional disorder and delirium).
2. Medical disorders (e.g. organic catatonia, neuroleptic malignant syndrome and parkinsonism).

Pre-treatment Evaluation

The pre-treatment evaluation consists of the following steps:

1. An *informed consent*, taken from the patient. If the patient does not have capacity or competence to give consent, consideration must be given to the most recent legal guidelines and local procedures which can include the best interest decision with consent of guardian/family and additional opinion from another professional.
2. Detailed medical and psychiatric history taking, which includes the current and past treatment history.
3. General and systemic physical examination.
4. Routine laboratory investigations.

Technique

The techniques used for ECT administration are of two types:

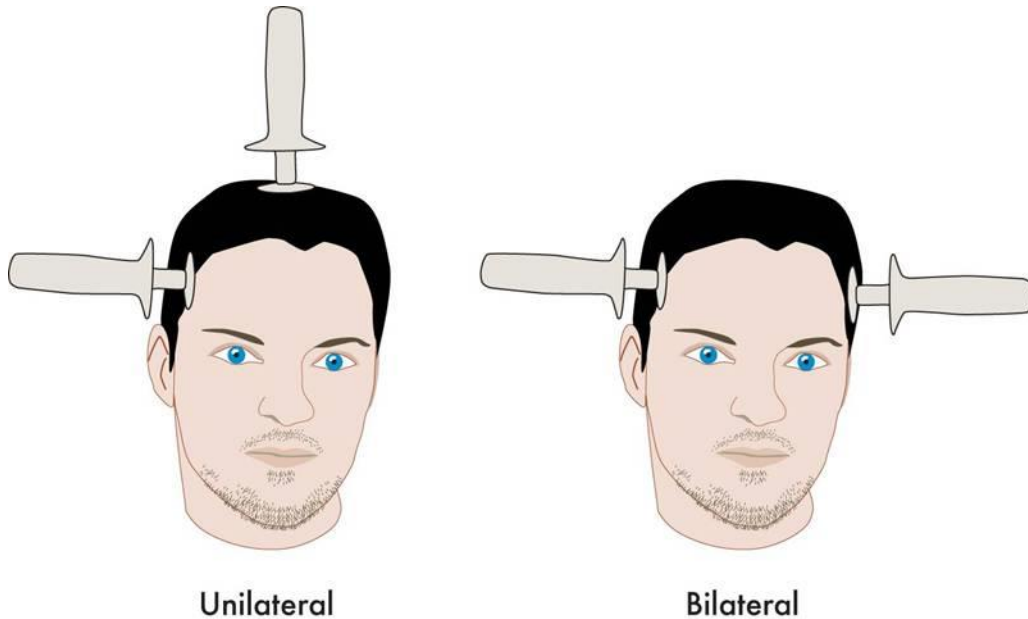
i. **Direct ECT** is administered in the absence of muscular relaxation and general anaesthesia. All the other steps are the same as in modified ECT. This method of treatment is nowadays very infrequently used and not understandably encouraged by most guidelines.

ii. **Modified ECT** is modified by drug-induced muscular relaxation and general anaesthesia administered by an anaesthetist. ECT is usually administered in the morning after an overnight fast. If given at any other time during the day, the patient should be *empty stomach* for at least 4 hours. No oral medication should be given in the morning. The *bladder* (and bowel) should be emptied just before the treatment, as incontinence can occur during the induced seizure. Dentures, if present, should be removed, and the presence of loose teeth should be ruled out. Tight clothing, and metallic and sharp objects (if any) should be removed from the person's body. The usual anaesthetic precautions are taken. The patient is placed on a hard bed which is well insulated. A slow intravenous drip may be started (though not needed in all patients). Atropine (0.6 mg) is given IV just before the treatment or else is given 30 minutes before treatment. This step is followed by administration of an anaesthetic agent and a muscle relaxant. An anaesthetic mask is placed on the face and ventilation with 100% oxygen is given. Now a mouth gag is inserted between teeth, to prevent tongue bite during convulsion. The electrodes (usually U-shaped) are moistened with saline or 25% bicarbonate solution and applied on head.

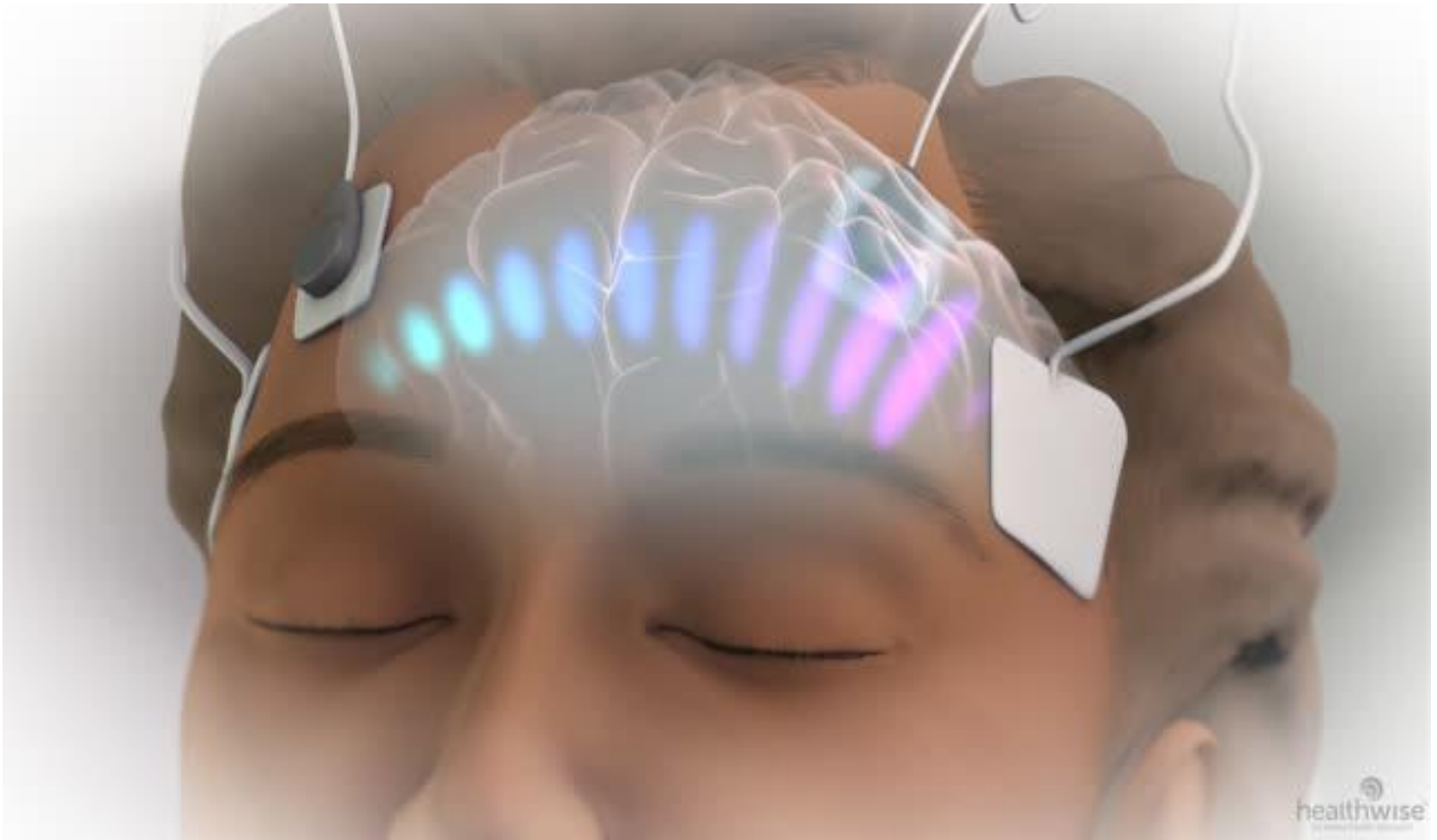
TYPES

According to the position of application of electrodes, ECT is of two types:

- i. Bilateral ECT:** This is the standard form of ECT used most commonly. Each electrode is placed 2.5-4.0 cm (1-1½") above the midpoint, on a line joining the tragus of the ear and the lateral canthus of the eye.
- ii. Unilateral ECT:** In this type, electrodes are placed only on one side of head, usually the non-dominant side (right side of head in right handed individual).



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Duration of Therapy

The total duration and number of treatments given depends on the diagnosis, presence of side effects, and the response to treatment. Usually 6-10 treatments are sufficient, although up to 15 treatments can be given if needed. The treatments should be spaced, so that no more than 3 ECTs are given per week. Although ECT is very effective in severe depressive disorder (for example), the benefit lasts only till the ECTs are given. There is no residual benefit after the treatment is over. Hence, the patient needs antidepressants (for example) during and after the ECTs are over.

Side Effects

1. Side effects associated with general anaesthesia: *Deaths* during ECT are usually due to the general anaesthesia.
2. *Memory disturbances* (both anterograde and retrograde) are very common. These are usually mild and recovery occurs within 1-6 months after treatment. Unilateral ECTs cause much less memory disturbance than bilateral ECTs.
3. *Confusion* may occur in the postictal period. Like memory disturbances, confusion is much commoner with bilateral ECTs. Usually, no treatment is needed. Parenteral diazepam may be given for excitement during this period.
4. *Other side effects* include headache, prolonged apnoea, prolonged seizure, cardiovascular dysfunction, emergent mania, muscle aches and apprehension.

ECT does *not* cause any brain damage.

Thank You