

## **Electro convulsive therapy (ECT)**

**-Has Antipsychotic & antidepressant effect .**

**It is most controversial in psychiatry with considerable S/E,**

**-Unknown mechanism, requires consent of family (loss of patient insight ) and patient if neurosis**

**-old name is Electroshock therapy .**

**Definition : mild electric current applied to brain to produce seizure , (grandmal) causing change in brain chemistry that reverse the condition , it was introduced in mistaken idea that epilepsy & schizophrenia are antagonized disorders .**

### **Historical perspective**

**-1934 : Hungarian neuropsychologist Meduna , induced by camphor & cardisole ( metrazol)**

## Types of ECT

### According to application

1-bilateral (Bipolar)

2-unilateral

3-another classification

### According to anesthesia

1-modified under anesthesia (mostly used )

2-plain – given here ( no anesthesia

-ECT dramatic response ..pt. unaware of it because it have loss of conscious (100% like grand mal epilepsy )

### Action

Unknown exactly

1- **several double blind trials** :improvement due to convulsion or due to anesthesia

2- **biochemical therapy** (nor adrenaline-) by change in nor adrenaline pathway – dopamine, serotonin ).

3-**change in seizure threshold** , so mood stabilizers are used in mood disorders (bipolar disorder)

4-**physiological change** : increase B.pr 200 mmHg (so HTN is relative contraindication) ,increase cerebral blood flow 200%, increase prolactin level

### **Indications of ECT**

#### **1- Depression**

- suicidal attempts or thought
- severe depression
- psychotic depression
- Failure of medical measures after full doses
- non- compliant patient
- refuse eating and drinking ( except in political )

#### **2-catatonic schizophrenia**

3-schizophrenia in case of schizoaffective (but not first line )

4-severe mania –acute manic\_excitement

5-puerpural psychosis

Epilepsy – if long aura in which the patient depressed

### **Contraindication**

Absolute:

- 1- Space occupying lesion (requires brain imaging prior to ECT
- 2- Head trauma- recent
- 3- Recent heart problem
- 4- Recent fracture

5- Previous 3-4 point –must wait at least 2months (if delayed of MI then can give ECT)

6- Acute and chronic pulmonary disease

### **Relative:**

-risk and benefit in between them

1-history of CVA

2-Old cardiac problem

3-pregnancy ( especially if precious pregnancy – 10 years infertile and now pregnant )

4-HT

### **Course**

**ECT given twice weekly , given 8-12 session , according to clinical response may be more or less – expect in manic excitement can give successive ECT per day )**

**-consent of patient or family should be taken ( tell them about S'E and coarse)**

**-must illustrate S/E as memory impairment or mortality**

### **Technique of administration**

1- sufficient room with O2 supply , end tracheal tube DC shock

2- Hx of drug allergy

3- Full physical exam + CBP+ Brain imaging

4- Nothing by mouth for 6 hours (esp. in modified ECT )

5- Bilateral or unilateral we must know the dominant hemisphere –unilateral is give to non dominant hemisphere.

6- Cleaning skin & moisture electrode.

7-Unilateral : imaginary line between orbit and auditory meatus , mid-way above it by 4 cm & a second one 10 cm (two points ).

-Bilateral is 5 cm above the imaginary line .

7- Seizure duration 15 seconds .

8-Consent either family or , according to mental health act in country .

**Side effects :** unipolar has less S/E in cognitive function .

1- mortality 1:22000.

2- Headache, muscle pain ,back pain, hypoxia .

3- Avulsion fracture of clavicle ,vertebral & crush fracture, loss of teeth.

4- Confusion (differ in duration from patient to patient ), disappear after hours .

5- Amnesia : retrograde (months or years ) ---by Tx .

Ante grade (for 7 months )--- after Tx

-amnesia is more in Bipolar ECT , patient often unaware of cognitive impairment .

6- anxiety,

ECT Not give for children less than 15 years old

