ELECTRO –CONVULSIVE THERAPY

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Mental Health Module

INTRODUCTION

- HIPPOCRATES WAS THE FIRST TO OBSERVE THAT MALARIA-INDUCED CONVULSIONS IN INSANE PATIENTS WAS ABLE TO BRING A REDUCTION IN THEIR SYMPTOMS
- MIDDLE AGES. PHYSICIANS NOTE THAT HIGH FEVERS OCCURING WITH INFECTION EPIDEMICS IN ASYLUMS APPEAR TO HAVE A CALMING EFFECT ON THE INSANE
- IN 1917, JULIUS WAGNER-JAUREGG INTRODUCED THE MALARIA-INDUCED FEVER TO TREAT NEUROSYPHILLITIC PARESIS
- IN 1927, MANFRED SAKEL INTRODUCES THE INSULIN-INDUCED COMA AND CONVULSIONS TO TREAT SCHIZOPHRENIA.
- 1934 MEDUNA INTRODUCES THE CEREBRAL AGITATING AGENT METRAZOL TO CHEMICALLY INDUCE CONVULSIONS FOR SCHIZOPHRENIA

HISTORY OF ECT

- 1933
- VON MEDUNA OBSERVED THAT SCHIZOPHRENIC PATIENTS WERE NEVER ALSO SUFFERING FROM EPILEPSY AND VICE-VERSA
- THEREFORE HE CONCLUDED THAT THE TWO DISORDERS INCOMPATIBLE
- CARDIAZOL (METR4AZOL) I.V. WAS USED TO PRODUCE A GRAND MAL CONVULSION
- RESULT – THIS TREATMENT PRODUCED FEAR AND PATIENTS DENIED SYMPTOMS AS A MEANS TO STOP THE TREATMENT

HISTORY OF ECT

- **1938 - CERLETTI AND BINI INTRODUCES ELECTRICAL CURRENT TO PRODUCE THE CONVULSIONS**
- **ECT WAS PERFORMED STRAIGHT**
- **THE BEST RESULTS WERE SEEN WHEN PATIENTS WERE MISDIAGNOSED AND WERE NOT SCHOZOPHRENIC BUT SUFFERING FROM AFFECTIVE DISORDERSSINCE THEN -**
- **LATE 1940's - ANESTHESIA WAS INTRODUCED**
- **MUSCLE RELAXANTS WERE ALSO INTRODUCED**
- **UNI-LATERAL ECT WAS INTRODUCED IN 1958**
- **PATIENTS HAVE FEWER COGNITIVE SIDE-EFFECTS – LESS DISORIENTATION ANTERIOGRADE AMNESIA**

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- **THUS WE NOW PERFORM MODIFIED ECT**

- **VON MEDUNA'S HYPOTHESIS WAS DISPROVED, HOWEVER ECT WAS STILL CONSIDERED EFFECTIVE**

INDICATIONS FOR ECT

- **DEPRESSION - 90% OF REFERRALS FOR ECT**
- **AGITATED DEPRESSION**
- **SEVERE DEPRESSIVE STATES**
- **MANIC STATES - RARELY**
- **CATATONIC SCHIZOPHRENIA**
- **SCHIZO-AFFECTIVE DISORDERS**

CONTRA-INDICATIONS FOR ECT

- RECENT MYOCARDIAL INFARCT
- RECENT OR PAST HISTORY OF CVA
- FRACTURES OR OSTEOARTHRITIS (SEVERE)
- SERIOUS CHEST INFECTION (E.G. ACTIVE TB)
- HEART FAILURE
- RECENT CHILDBIRTH (RISK OF EMBOLISM)
- SEVERE KIDNEY DAMAGE

PREPARATION FOR ECT

- EXPLANATION OF PROCEDURE
- CONSENT FORM SIGNED
- PHYSICAL EXAMINATION
- CHEST X-RAY, ECG, CBC
- STARVE FOR 6-8 HOURS
- EMPTY BLADDER
- REMOVE DENTURES JEWELLERY ETC
- CHECK TPR
- TEST URINE – PROTEIN, GLUCOSE
- LOOSEN TIGHT CLOTHING
- CHECK O2, SUCTION APPARATUS, ECT APPARATUS

PROCEDURE

- PRE-MEDICATION IF NECESSARY
- GENERAL ANAESTHETIC - INDUCTION ONLY
- ATHROPINE
  - DECREASES TRACHEAL SECRETIONS
  - PREVENTS CARDIAC IRREGULARITIES
- MUSCLE RELAXANT – SCOLINE (CURARE DERIVATIVE)
  - NEURO-MUSCULAR JUNCTION BLOCKER
  - IMPULSE – RELEASE OF ACETYLCHOLINE MUSCLE AREA STIMULATED (MOTOR END PLATE), STARTS CONTRACTION OF MUSCLEBUNDLE.
  - CHOLINESTENASE (ENZYME) DESTROYS ACETYLCHOLINE TO PERMIT MUSCLE TO RELAX AGAIN

PROCEDURE

- O2 APPLIED
- MOUTH GAG FITTED
- ELECTRODES (SOAKED IN ELECTROLYTE SOLUTION) ARE PLACED IN POSITION
- BI-LATERAL ECT – ELECTRODES PLACED ON BOTH TEMPLES SO THAT THE ELECTRICAL CURRENT PASSES BETWEEN THEM
- UNI-LATERAL ECT - ELECTRODES PLACED ONE TEMPLE AND THE OTHER ON SCALP ON THE NON-DOMINANT HEMISPHERE
- CURRENT DELIVERED
- TONIC MUSCLE SPASM – CLONIC PHASE FOLLOWS
- O2 APPLIED TILL SPONTANEOUS BREATHING OCCURS
- PATIENT PUT IN LATERAL POSITION WITH AIRWAY IN PLACE
- AFTER APPROX. 20 MINUTES PATIENT WAKES UP BUT IS ALLOWED TO SLEEP IT OFF

FREQUENCY OF ADMINISTRATION

- **ECT IS ADMINISTERED 2-3 TIMES WEEKLY**
- **IDEAL COURSE OF ECT IS BETWEEN 6 AND 12 BOUTS**
- **RARELY IT IS ADMINISTERED DAILY (IN CASES OF SEVERE MANIA)**
- **NO EVIDENCE OF PERMANENT BRAIN DAMAGE FROM ECT**

UNWANTED EFFECTS

- HEADACHE
- CONFUSION
- TRANSIENT RETROGRADE AMNESIA
- ANTERIOGRADE AMNESIA (ABILITY TO LEARN AND REMEMBER NEW INFORMATION) THIS ABILITY RETURNS TO NORMAL WITHIN WEEKS
- MUSCULAR PAINS