The Truth about Electroconvulsive Therapy (ECT)
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Disclosures
Donna Ecklesdafer –
Nothing to disclose

Dawn Miller –
Nothing to disclose

Objectives
Objective 1 –
 Evaluate the safety and efficacy of ECT

Objective 2 –
 Explore the mechanisms of action of ECT

Objective 3 –
 Examine the critical role and exciting opportunities available to the Psychiatric Mental Health (PHM) Nurse in practice, patient education and research in ECT
Electroconvulsive Therapy

Do they still do that???

Is ECT Safe?

➢ ECT is a safe and effective treatment for the debilitating symptoms of Major Depression, Bipolar Disorder, Schizoaffective Disorder

➢ ECT can be used as a life saving treatment – when a rapid response is needed

Will ECT Fry People’s Brains?

➢ NO!!! ECT is a safe and effective treatment

➢ Joules used during defibrillation

➢ Joules used during ECT
Seizures are not good – why would you give someone a seizure?

- Meduna
  - Injections of Camphor Oil – 1934
  - Injections of Metrazol
  - Insulin Coma Therapy
- Ugo Cerletti and Lucio Bini – 1938
- Electricity

Question for Audience

Diagnoses that Respond to ECT

- Major Depression (with or without psychosis)
- Bipolar – Depression and Mania
- Schizoaffective
- Early onset of Schizophrenia
- Catatonia
Diagnoses that Respond to ECT

- Other Diagnoses
  - Neuroleptic Malignant Syndrome
  - Dementia with underlying mood disorder
- Pine Rest Research — with McLean Hospital and Mayo Clinic
  - Short-term Efficacy and Cognitive Side Effects of Acute Electroconvulsive Therapy for Agitation and Aggression in Dementia

Life Saving Treatment

- Actively Suicidal
- Rapid Response Needed

Suicide — (American Association of Suicidology)

- www.suicidology.org
- Completed suicide: 38,364 cases reported in 2010

- Average of 1 person every 13.7 minutes killed themselves
- Average of 1 elderly person every 1 hour and 28 minutes killed themselves
- Average of 1 young person every 1 hour and 54 minutes killed themselves
- Adding the 274 suicides below age 15, the rate would be 1 young person every 1 hour and 48 minutes
Suicide – (American Association of Suicidology)

➢ Suicide is the 10th ranking cause of death in U.S.
➢ Homicide ranks 16th
➢ Suicide is the 3rd highest cause of death for young (ages 15-24)
  ➢ 1st – accidents: 12,951
  ➢ 2nd – homicide: 4,678
  ➢ 3rd – suicide: 4,600

Attempted suicide: 959,100 annually

➢ Attempts for every death by suicide: 25
  ➢ 100-200:1 for young
  ➢ 4:1 for elderly
➢ Female attempts for each male attempt: 3
➢ Elderly made up 13.0% of the 2010 population but represented 15.6% of the suicides
➢ Young were 14.1% of 2010 population and comprised 12.0% of the suicides

USA Suicide: 2010 Official Final Data
(American Association of Suicidology)

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<td>Elderly (65+)</td>
<td>5,994</td>
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<tr>
<td>Young (15-24)</td>
<td>4,600</td>
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Improvements in ECT

- Medications
- Anesthesia
- Muscle Relaxant
- Oxygenation
  - Administration of oxygen
  - Monitor oxygen saturation

Type of electricity – brief square pulse wave
Amount of electricity
- 100 joules given over 8 second averages to 12.5 joules/second
- Defibrillator gives up to 360 joules in less than 1 second
- Seizure monitoring

Stimulus Electrode Placements

- Bi-temporal
- Right Unilateral
Seizure Monitoring

- Seizure length typically 30-60 seconds
- Tonic/Clonic (Peripheral seizure)
- Brain activity (Central seizure)

ECT Treatments

- Acute Series
  - 3 times each week
  - Typically 6-12 treatments
  - Improvements seen after 4-6 treatments
- Maintenance
  - Weekly to monthly
  - Maintains the gains
  - Can prevent inpatient stays
- 50 - 80% of patients relapse after ECT with no follow up of medications or maintenance ECT

Seizure Threshold

Medications that can affect seizure threshold

- Lithium
- Benzodiazepines
- Mood stabilizers
- Antipsychotics
Seizure Threshold

Other influences on seizure threshold

➢ Age
➢ Gender
➢ Electrode placement
➢ Hyperventilation
➢ Dehydration
➢ Sleep deprivation

Seizures

➢ Parasympathetic discharge
➢ Sympathetic discharge
➢ Potential rebound parasympathetic discharge

Anesthesia

Anesthetic

➢ Brevital or methohexitol
➢ Etomidate

Muscle relaxant – succinylcholine (anectine)

➢ Depolarizing muscle relaxant
➢ Most common cause of muscle soreness
Potential Mechanisms of Action

Many different theories:

- Decreases frontal cortical connectivity
- Neurotransmitter theory
- Anticonvulsant theory
Benefits of ECT

- Improved mood
- Increased pleasure
- More restful sleep
- Better appetite
- More positive attitude
- Less agitation
- Increased sexual interest
- More energy
- Clearer thinking
- More hope

Potential Side Effects

- Headaches
- Muscle aches – caused by muscle relaxant
- Nausea
- Unsteady on feet
- Confusion
- Potential short-term and/or long-term memory loss

Contraindications

- No absolute contraindications
- High risk
  - Risk versus benefit
- Mortality
  - Less than for childbirth
Relevance to Nursing

- Directly involved – before, during, and after treatments
- Patient and family education
- Staff’s attitudes impact patients, family members and the community

Patient Education

- ECT Video, pamphlets, articles
- ECT Process
- Tour of clinic
- Discussion of stigma: One Flew Over the Cuckoo’s Nest

What to Teach

- Treatment information
- Benefits
- Side effects
- Effectiveness – not 100%
- Cumulative effect – improvement usually after 4-6 treatments, other notice improvement first
- Depressive symptoms decrease
What to Teach

- Medications and ECT
- 80% rate of relapse after ECT with no follow up of meds/ECT
- Consent
  - Patient sign voluntary
  - Patient with Guardian
- Document education

Patient Assessment After ECT Treatment

- Monitor vital signs when return to unit
- Assess side effects
- Assess benefits/gains patient has received from ECT

Pre-ECT Workup

- Psychiatric referral
- Basic Metabolic Profile
- Electrocardiogram
- History & Physical—medical clearance
- Inpatient versus Outpatient
- Risk/Benefit Ratio
- Education
- Informed Consent
### ECT Procedure
- Patient and Family rating scale
- Assessment of patient
- Intravenous line placement
- Anesthesia and muscle relaxant
- Brief electrical stimulus
- Monitor seizure activity
- Post Anesthesia Care Unit
- Discharge Criteria met

### Summary of ECT
- ECT is a very safe and effective treatment
- ECT can be a life saving treatment
- Patient’s response to ECT is typically quick usually about 4-6 treatments
- ECT can keep patients out of the hospital
- ECT improves patients’ quality of life

### Questions?
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