ELECTROCONVULSIVE THERAPY AND OLDER ADULTS

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Learning Objectives:

- Explain three indications for ECT.
- Identify potential ECT patients.

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Mood Disorders, Dementia, and Electroconvulsive Therapy

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My practice setting:

**Long-term care facilities (50%)**
- Aggression
- Impulsivity (wandering, frequent yelling out)
- Sexually disinhibited behavior (usually not "inappropriate")
- Depression/suicidal statements
- Hallucinations/Delusions (esp. of abuse from peers/caregivers)
- Sleep-wake cycle disturbances

**Outpatient office (30%)**
- Depression, Mood Disorders
- Anxiety Disorders
- Memory problems

**ECT (20%)**
- Treatment-resistant mood and behavioral disturbances

Learning Objectives

- Examine the relationship between dementia and mental illnesses, especially mood disorders
- Discuss current treatments for dementia and comorbid mood disorders
- Understand how ECT fits into current available treatments.
## Diagnostic Criteria for Dementia

1. **Memory impairment** PLUS one or more of the following:
   - Aphasia
   - Apraxia
   - Agnosia
   - Impairment of executive functioning
2. Functional impairment
3. Progressive decline

*Adapted from American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 4th edition.*

## Mood Disorder and Dementia

- Mood Disorder secondary to dementia
- Mood disorder as presenting sign of dementia-to-come
- Mood disorder as cause of dementia
- Mood disorder and dementia are both the results of common neurological processes

## Dementia and Depression

- 30-40% of Dementia patients experience depression at some point in the course of illness.
- Higher incidence in Vascular Dementia (30-40%) vs Alzheimer’s (20-30%)
- Depression could be a prodromal symptom of Alzheimer’s (50% of patients with late-onset depression go on to develop AD)
Major Depression:  
The Not-So-Great Imitator

Can look like:

Dementia
That's why I don't diagnose it until depression is adequately treated.

Delirium
Psychotic depression can mimic it!

"Failure to Thrive"
Internal medicine's synonym for severe depression.

Treatment-Resistant Depression

Various definitions exist.

Person has been on at least two different antidepressant medications from different classes at maximum dose for at least four weeks.

Has not responded to antidepressant augmentation, ie Lithium, thyroid supplement, second-generation antipsychotic.

Has not responded to an MAOI.

Kindling & Treatment Resistance

There is evidence that the longer an episode of any psych illness lasts, the more difficult it is to treat. Also, the more episodes a person has, the longer, more severe, and more difficult-to-treat the episodes get.

Exposing patients to multiple unsuccessful medication trials may simply add to treatment-resistance and prolong suffering.

SSRI's in geriatric/hospice settings

Most antidepressant treatments take 4-6 weeks to have full benefit.

In geriatric/hospice settings, SSRI's FAIL 70% of the time.

In my experience, that number can be extrapolated to all antidepressant classes.

One "quick-fix" = stimulants, ie Ritalin.

Late-onset Bipolar = Bipolar Type VI?

- Ng et al (Aksiskal), 2007
- Case series of manic/mixed symptoms emerging in late-life, usually in the setting of dementia or cognitive deficits
- Mood lability plus cognitive decline
- Dementia may “release latent bipolarity”

Antipsychotics in the Elderly

- Black box warning: Atypicals increase risk of stroke and MI in dementia patients.
- Typicals vs atypicals? Atypicals seem to confer more risk than typicals (there’s conflicting evidence about this)
- Dementia is part of the risk.
- Sometimes benefits outweigh the risks, ie for treatment of psychotic symptoms or severe aggressive behaviors
ECT: A brief history

- 1785: Therapeutic use of seizures reported in London Medical Journal
- 1934: Meduna in Hungary induced seizures with camphor and cardiazol
- 1937: Cerletti and Bini in Italy use electricity to induce seizure
- 1951: widespread use of anesthesia in ECT with introduction of succinylcholine

Indications

- Need for fast, definitive response because of severity of a psychiatric/medical condition
- Risk of alternative treatments outweighs risks of ECT
- History of poor response to medications
- History of intolerable side effects to medications
- History of good response to ECT
- Patient preference of ECT over alternatives
- Psychiatric disorder during pregnancy (NOT a contraindication)

Treatable Diagnoses

- Depressive Episode (Bipolar or Unipolar)
- Manic Episode
- Schizophrenia or Schizoaffective Disorder (esp. abrupt onset of psychosis)
- Catatonia (regardless of etiology)
- Dementia with Behavioral Disturbance and/or comorbid/secondary psychiatric conditions
- Neuroleptic Malignant Syndrome
- Parkinson’s Disease
- Epilepsy or intractable seizures (esp. if accompanied by mood and/or psychotic symptoms)
Mechanism?

- With a seizure, cerebral blood flow increases 300%, cerebral metabolism increases 200%.
- Outpouring of catecholamine neurotransmitters: norepinephrine, epinephrine, dopamine.
- “Resetting” brain pathways:
  
  CTRL-ALT-DELETE
  [analogous to shocking a heart that’s in a bad rhythm?]

Contraindications

- NO ABSOLUTE CONTRAINDICATIONS
- Cardiovascular: recent MI, unstable angina, poorly compensated CHF, severe valvular disease.
- Arterial aneurysm or AVM (esp. cardiac or intracranial).
- Increased intracranial pressure.
- Recent or severe CVA.
- Severe pulmonary disease.
- Medical conditions that complicate anesthesia (obstructive sleep apnea, obesity, multisystemic disease, hematologic diseases, hyperthyroidism, pheochromocytoma, etc.).

Side Effects

- Short-term memory loss.
- Confusion/delirium.
- Headache.
- Nausea/vomiting.
- Muscle pain.
- Fractures.
- Cardiac events.
Efficacy

- Rate of response 80-90% in mood disorders & catatonia: compared to 60-70% for any given medication regimen
- Speed of response: weeks/months with meds vs. days/weeks with ECT

Acute Efficacy

In a meta-analysis of RCTs, ECT superior to sham, placebo, TCAs, MAOIs, antidepressants in general for depression. “Response” defined as “recovered” or “marked improvement” on HAM-D. Pagnin et al., 2008.

Case reports (ie Weintraub & Lippman, 2001) support ECT as beneficial and well-tolerated in elderly patients with comorbid affective disorder and advanced dementia.

Unipolar, Bipolar I and Bipolar II all show significant improvement with ECT; unipolar respond best, Bipolar I worst results (residual sx). Medda et al., 2009.

Acute Efficacy

Elderly with medication-resistant depression have positive response to ECT in 80-90% of cases. Retrospective, n=373. Jain et al, 2008.
Maintenance Treatment

For elderly patients with psychotic depression, maintenance ECT plus nortriptyline is superior to nortriptyline alone. Navarro et al., 2008.

For chronic depression that responds well to ECT, maintenance ECT plus antidepressant meds has better outcome (less chance of relapse/recurrence) than meds alone. 5 years: 73% vs. 18% remission. Gagne et al., 2000.

After a successful index series, if it is decided that the patient will have medication maintenance alone, it is better to switch antidepressant class vs. staying with the medication the patient was on at the start of ECT. Nakajima et al., 2009.

Maintenance Treatment

After index ECT for medication-resistant depression, imipramine was superior to placebo in preventing relapse in first 6 months: 18% vs 80%.

ECT Take-home points

• ECT is the most effective treatment for depression, mania, and catatonia
• ECT is safe, humane, and available for appropriately identified and consented patients
• ECT is surrounded by controversy fueled by its history, media portrayal, and anti-psychiatry propaganda