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Psychiatry and Addictions Case Conference

UW Medicine | Psychiatry and Behavioral Sciences

ECT

"Diseases desperate grown, by desperate appliance are relieved, or not at all." - William Shakespeare

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UW Medicine
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project ECHO

GENERAL DISCLOSURES

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GENERAL DISCLOSURES

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SPEAKER DISCLOSURES

- ✓ Any conflicts of interest?

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PLANNER DISCLOSURES

The following series planners have no relevant conflicts of interest to disclose:

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OBJECTIVES

After attending this lecture, participants will be able to:

1. Identify patients appropriate for referral to ECT and advise them about ECT efficacy and risks.
2. Recognize potential medical problems that could impact the safety of ECT
3. Manage medications in the context of ECT

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CASE PRESENTATION

- 76 yo man with long-standing history of MDD, presenting with worsening depression and SI with a plan. Lost 12 lbs in 2 weeks, stopped sleeping.
- SA by overdose on Percocet/Ativan 2 years ago because of worsening of chronic back pain, leading to a hospitalization. He had 2 more attempts after discharge by cutting his wrists, followed by 3 more psychiatric hospitalizations lasting a total of 4 months.
- Previously treated with citalopram, paroxetine, mirtazapine, duloxetine, quetiapine, aripiprazole, trazodone, nortriptyline. Currently on bupropion with venlafaxine, a combo said to have worked before but gradually losing efficacy.
- PMH: hyperlipidemia, chronic back pain with 14 back surgeries, open heart surgery in 1993, with placement of stents 12 and 13 years ago, history of prostate cancer now in remission
- SH: Retired engineer. Resides in ALF, now separately from his wife. 2 attentive children, daughter is a pediatrician, 3 grandkids.
- Substance Abuse: had been a smoker but quit “many years ago.” Never alcohol/drugs.

WHAT WOULD YOU DO?

A. Review medication history and try something new
B. Augment current regimen with lithium
C. Augment current regimen with olanzapine
D. Augment current regimen with methylphenidate
E. Admit to the inpatient Psychiatry and refer to ECT

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ECT INDICATIONS

- Severe major depressive disorder (suicidality, catatonic stupor, food refusal, psychosis)
- Treatment-resistant major depressive disorder
- Bipolar depression
- Treatment-resistant schizophrenia or schizoaffective disorder
- Mania
- Catatonia
- Depression comorbid with Parkinson's disease
- Neuroleptic malignant syndrome

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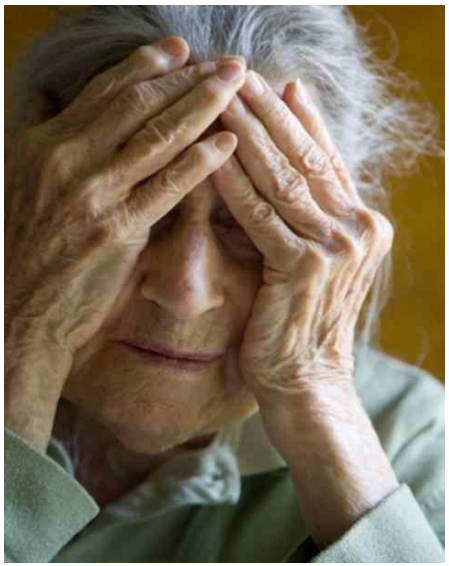
AN INDICATION NOT TO FORGET: LATE-LIFE DEPRESSION

- Higher relapse rate of depressive symptoms
- Elderly men have a high suicide rate: 12.6/100K in 65-74 age group, 45/100K for white men age 85+. Majority have a mood disorder. Majority die by a firearm. Majority seek care from a PCP before the attempt.
- Higher attempt rate in those with severe medical illness
- Complex comorbidity with cognitive impairment and dementia, making evaluation more challenging



WHAT HAPPENS DURING ECT?

- General anesthesia induction
- Muscle relaxation
- Induction of a brief electrical impulse to the brain (up to 8 seconds)
- Generalized tonic-clonic seizure (therapeutic and well-controlled), about 1 minute on average
- Seizure terminates by itself
- Patient wakes up within a few minutes
- Recovery in the PACU – about 1 hour
- Repeat procedure 6-12 times 2-3/week

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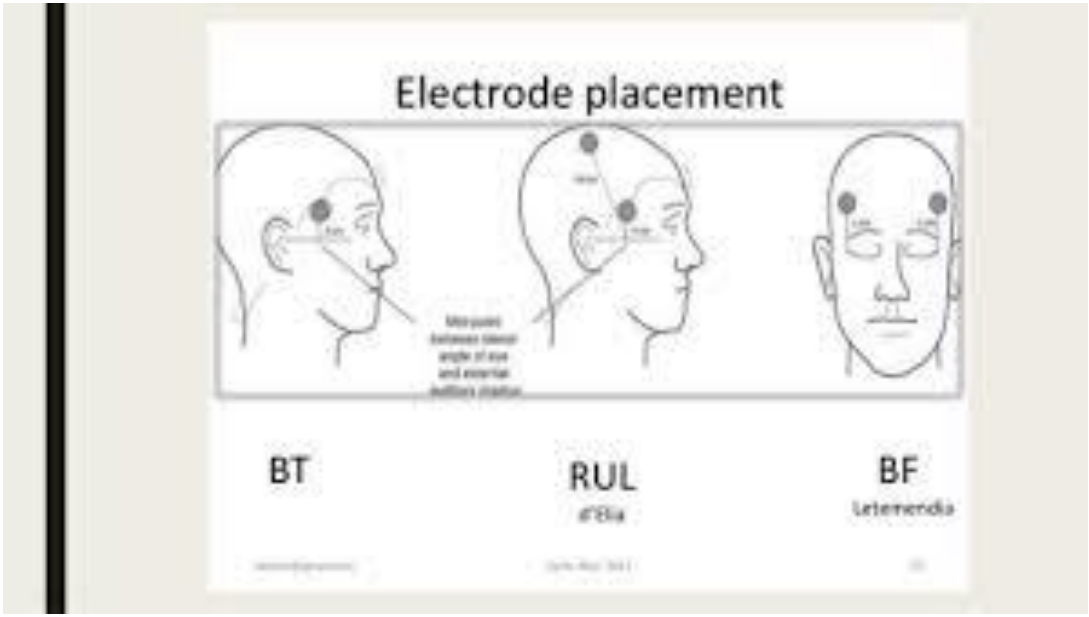
ECT TECHNIQUE



- RUL placement – fewer cognitive side effects
- BT placement – higher efficacy, more cognitive side effects
- BF placement – no clear advantage over BT placement (cuts down on jaw pain?)
- Intensity of the stimulus is paramount, especially in RUL placement

EFFICACY OF ECT

- More effective than any other treatment for MDD, 70-90% remission (Kellner)
- Greater response in bipolar depression based on meta-analysis and systematic review of 19 studies (Bahji)
- Very effective for suicidal ideation – in a study of 131 patients with stated suicidal intent, 38% felt relief after 3 ECTs and 61% felt relief after 6 ECTs (Kellner, Fink)
- Greater benefit in geriatric patients, leading to lower rates of psychiatric rehospitalization (O'Connor, Rosen)

SIDE EFFECT PROFILE OF ECT

- Overall, safe and benign
- Most common: transient short term memory loss (see below)
- Benign side effects: muscle aches, headaches, nausea
- More serious adverse consequences: cardiovascular problems, stroke
- Very rare nowadays: broken teeth, bones, other musculoskeletal injuries
- Mortality rate: 2-4 events per 100000 treatments (Kramer)

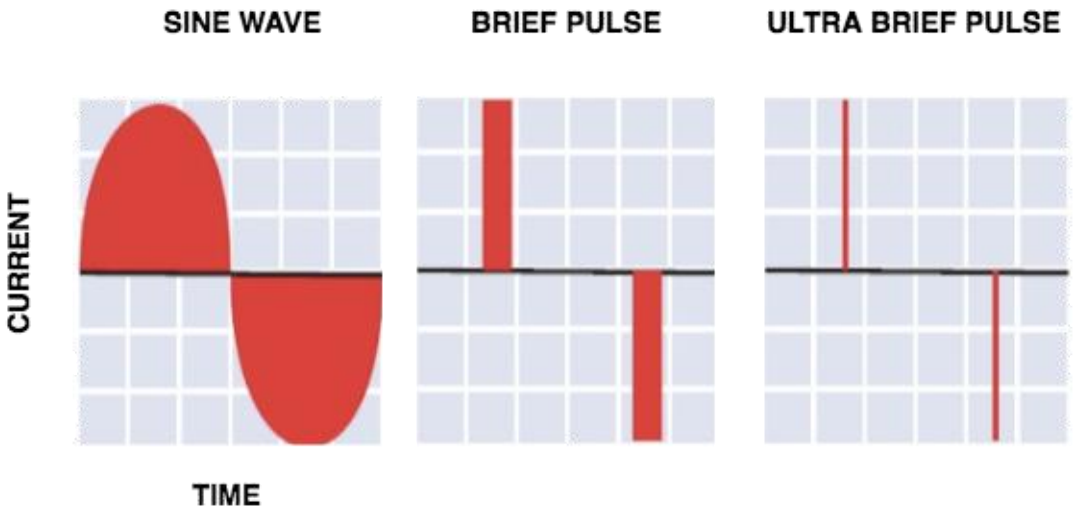
COGNITION AND ECT

1. Meta analysis and systematic review of 84 studies, 2981 patients (Semkovska):
   - Cognitive performance significantly decreased 0-3 days after ECT
   - No negative effect sizes were observed after 15 days, 57% of variables showed positive effect sizes
   - ECT had no demonstrable effect upon intellectual ability

2. Review of 9 studies of ECT v cognition in the elderly patients found that global cognitive functioning in patients with cognitive impairment improve, and global cognition remained stable after maintenance ECT over a year (Tielkes).

MINIMIZING COGNITIVE SIDE EFFECTS

- Right unilateral electrode placement with ultrabrief pulse width
- Spacing out ECT procedures
- Minimizing overall # of ECT procedures
- Using lesser electrical dose
- If patient has dementia, utilizing acetylcholinesterase inhibitors
- Removing medications that impact cognition
- Avoiding lithium in combination with ECT



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CASE CONTINUATION

The patient has been admitted to inpatient psychiatry unit and awaits ECT. Is there any workup you'd like to do prior to the procedure?

A. Obtain noncontrast head CT
B. EKG
C. Basic labs
D. MOCA
E. Pharmacological stress test

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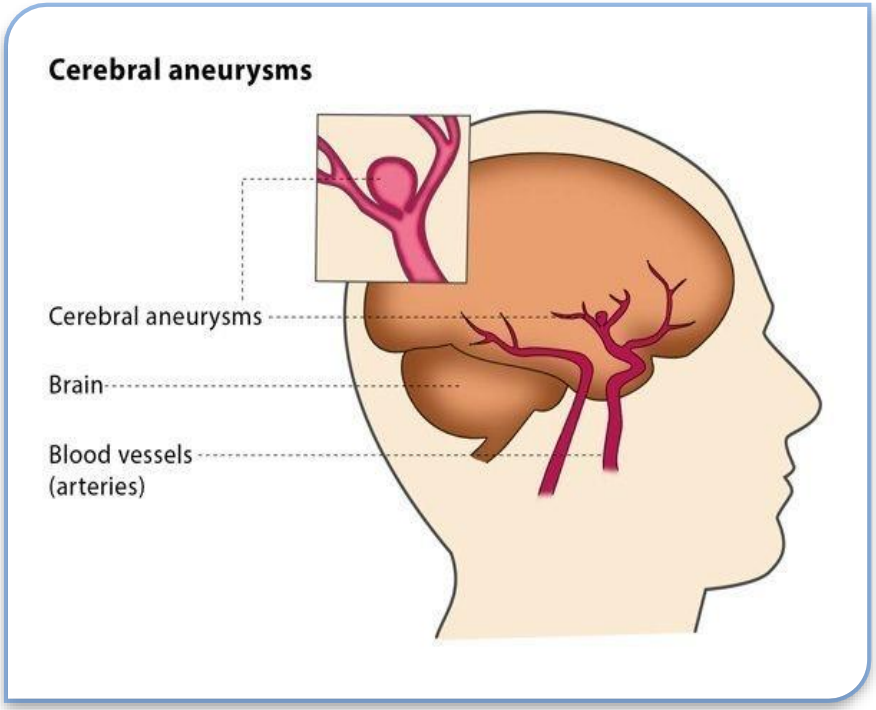
ECT CONTRAINDICATIONS

No absolute contraindications to ECT

Relative contraindications include:

- Space-occupying lesions
- Unstable cerebral aneurysm
- Unstable or severe cardiovascular disease
- Recent cerebral hemorrhage or stroke
- Severe pulmonary condition
- ASA Class 4 or 5

Also consider borderline personality disorders



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WORKUP PRIOR TO ECT

- Physical exam
- Basic labs
- EKG
- Preoperative anesthesiology consultation
- MOCA or equivalent cognitive exam
- PHQ-9 or equivalent depression scale
- **Not usually needed: head CT, EEG, spine X-Ray, cardiology consult or stress test, although in certain situations such additional workup may be considered depending on comorbid medical conditions**

Stabilize all comorbid medical conditions if time permits.

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MEDICATIONS AND ECT

- Avoid lithium in combination with ECT
- Discontinue or decrease doses of anticonvulsants (only leave them on in presence of epilepsy)
- Taper off or discontinue benzodiazepines
- Discontinue theophylline
- Antidepressants during ECT likely enhance the response to treatment
- Nortriptyline and lithium combo has the best evidence for maintenance post-ECT
- Consider MAOIs

LIFE AFTER ECT

- High relapse rates following ECT
- Maintenance ECT combined with medications (and any other recommended treatments) is best in patients with chronic treatment-resistant illness
- Maintenance frequency should be individualized for each patient

CASE CONCLUSION

- The patient had a successful index course of ECT. During the treatment, his seizure threshold increased, necessitating use of ketamine as an induction agent and a switch to bilateral method of current administration, as well as gradual increase in overall stimulus.
- After 9 treatments, his PHQ-9 reduced from 25 to 3, he had no SI or inappropriate feelings of guilt. He gained 15 lbs during the hospitalization.
- He was recommended to have maintenance ECT, initially biweekly, which gradually reduced to once every 6 weeks. He is doing well in his ALF, exercising and visiting his wife at every opportunity. Recently went to Hawaii, “visited a volcano and swam in the ocean!”

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WHAT IF ECT DIDN'T WORK IN THIS CASE? WHAT TREATMENT WOULD YOU OFFER?

- Switch to MAOI such as phenelzine or tranylcypromine
- Add lithium to medication regimen
- Do intravenous ketamine
- Refer to TMS (transcranial magnetic stimulation)
- Refer to VNS (vagal nerve stimulator)
- Prescribe a light box and moderate-to-vigorous exercise

WRAP-UP

- ECT is the gold standard for severe and treatment-resistant MDD
- ECT should be utilized more often
- ECT has greater efficacy than medications
- ECT may be particularly useful in geriatric patients
- The only obstacle to ECT may be availability in your community as there are no absolute medical contraindications for this treatment

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QUESTIONS?

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