Is This a Candidate for Neuromodulation?

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Learning Objective

Identify candidates for whom neuromodulation is an ideal strategy to optimize treatment outcomes

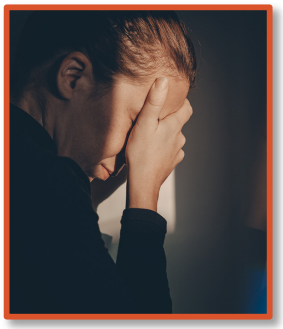
Case 1

A 56-year-old woman with recurrent depression had electroconvulsive therapy (ECT) 30 years ago with good response but complicated by dense amnesia over several months. Now she again is depressed with psychomotor slowing and some delusions of poverty and somatic delusions of cancer. Her life partner has joined your session with the patient and asks if repetitive transcranial magnetic stimulation (rTMS) would be a suitable treatment course as the patient had amnesia with the prior ECT course.

- TMS is an overall better option than ECT
- ECT might have better efficacy than TMS and is a better choice, and may not have the same cognitive problems seen before

Magnezi R, et al. *Patient Prefer Adherence*. 2016;10:1481–1487.

Case 2



A 39-year-old woman has failed sequential trials of paroxetine and bupropion for her severe major depressive disorder (MDD) and is asking about rTMS. She is not suicidal, psychotic, or dysfunctional at home. She does not have a primary care doctor and no lab work has been done in 5 years. The best next steps would be to tell her:

- A metabolic panel and a thyroid-stimulating hormone (TSH) test would be reasonable to perform prior to considering the next steps before deciding what treatment should come next
- It is best to proceed directly to rTMS after having a urine pregnancy test
- Proceed directly to aripiprazole augmentation of bupropion

Case 3

A 38-year-old attorney is in the midst of his own divorce agreement that has been dragging on for 2 years. He is very depressed and has a Patient Health Questionnaire-9 (PHQ-9) score of 21, without suicidal ideation or psychosis. He is muddling through with his own law practice and wants to investigate therapeutic brain stimulation for his depression as he has failed sertraline 200 mg for 8 weeks followed by non-response to bupropion 450 mg for 8 weeks. The date for his own divorce agreement is coming up soon.

What are the merits of TMS versus ECT?

- TMS strikes the best balance between efficacy and side effects for this patient
- The severity of his depression merits ECT as the first choice

Case 4

A 65-year-old man has completed a successful course of 10 right unilateral (RUL) ECT for MDD without psychotic features, but he was disoriented to place and time for 3 days after his last ECT session. His daughter is a psychologist and is knowledgeable about the literature on the advantages of continuation therapy after acute ECT. She asks if continuation of TMS is a reasonable option after an acute course of ECT. You answer:

- There is insufficient data to support the decision to either use or not use TMS after ECT
- TMS would be the preferred choice for continuation given the circumstances
- More ECT is the only defensible choice after an acute course of ECT

Case 5

A 40-year-old woman has depressive symptoms continuously for 20 years, with only transient response to ECT, continuation ECT, TMS, and atypical antipsychotic augmentation. She has never been manic, psychotic, or suicidal. On presentation today, her PHQ-9 = 24. You decide that she is a candidate for VNS, and in the consent process you advise of which of the following true statements:

- It may take a year to see if VNS is helpful
- VNS will likely produce an early antidepressant response, but there is a high risk that the results will fade within the next 6 months
- The discharge of the stimulator is not usually noticeable by the patient
- Under normal operating use, the VNS device will need to be changed out about once per year

SMART Goals

Specific, **M**easurable, **A**ttainable, **R**elevant, **T**imely

- Identify patients who are ideal candidates for neuromodulation strategies