Self-administered cognitive screening to monitor for cognitive side effects from outpatient electroconvulsive therapy

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Introduction

- Convulsive therapies used in psychiatry dating back to 1934 when first report of pentylenetetrazol induced seizures were used to treat schizophrenia.[1]
- In 1938, electrical stimulation used to treat catatonic schizophrenia after chemically induced seizures proved to be unreliable.[1]
- Remains one of the most rapid and effective treatments in psychiatry.[1]
- ECT can result in multiple cognitive side effects including post-ECT delirium[3] as well as anterograde and retrograde amnesia.[4]
- FDA Code of Federal Regulations, Title 21 recommends neuropsychological assessment for evaluating specific cognitive functions prior to beginning ECT treatment and during treatment (e.g., orientation, attention, memory, executive function).[2]
- Administering formal cognitive screening at baseline, during, and after completion of ECT could be an effective means of monitoring for cognitive side effects.

Goals of QI Project

1. Identify a cognitive screen to assess for cognitive side effects from ECT with the following characteristics:
    - Can be conducted in a timely manner on a busy outpatient ECT service
    - Measures cognitive domains that can be impacted by ECT
    - Self administered
    - Does not require special certification to administer
2. Test feasibility cognitive screen on outpatient ECT service

Indications for ECT[1]

Unipolar depression
Bipolar depression
Catatonia
Schizophreniform disorder
Schizophrenia
Schizoaffective disorder
Treatment resistance
Need for rapid treatment response: • Refusal of food or water leading to nutritional compromise • Medical comorbidity precluding use of psychotropic medication • Persistent suicidality

Cognitive Screens

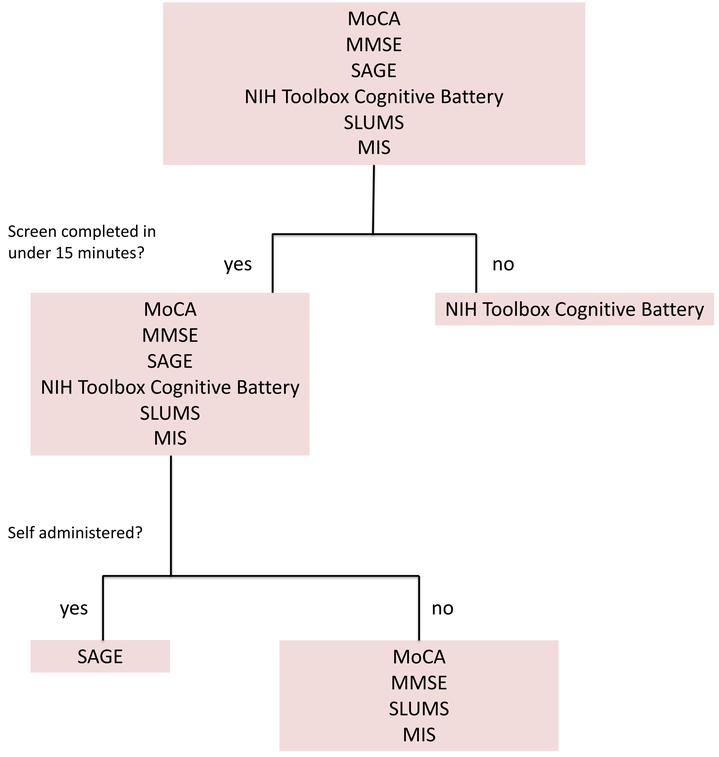

Figure 1: Montreal Cognitive Assessment (MoCA), Mini Mental Status Exam (MMSE), Self-Administered Gerocognitive Exam (SAGE), St. Louis University Mental Status Exam (SLUMS), Memory Impairment Screen (MIS)

Self-Administered Gerocognitive Examination

- Self-Administered Gerocognitive Examination is a self-administered cognitive examination that can be completed anywhere in 10 to 15 minutes.[5]
- Tests multiple cognitive domains including orientation, language (picture naming, verbal fluency), memory, executive function, calculation, abstraction, visuospatial abilities. [6]
- No training is required to administer or take the test. [6]
- Assistance with test is not allowed. [5]
- Four forms of the test are available. [5]
- Similar sensitivity and specificity to MMSE in detecting cognitive impairment.[6]
- Has not been studied specifically in detecting cognitive side effects related to ECT.

Future Directions

- Devise protocol for administering SAGE including time points
    - Induction vs maintenance ECT protocol
    - Alter cognitive screen protocol for changes ECT parameters

Figure 2: Proposed cognitive screening protocol timing.

- Test and implement cognitive screening protocol
- Revise protocol to as needed

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