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 pentylentetrazol induced seizures were used to treat schizophrenia.1
• In 1938, electrical stimulation used to treat catatonic schizophrenia after chemically induced seizures proven 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 delirium2 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

<table>
<thead>
<tr>
<th>Unipolar depression</th>
<th>Bipolar depression</th>
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</thead>
<tbody>
<tr>
<td>Catatonia</td>
<td>Schizophreniform disorder</td>
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<tr>
<td>Schizophrenia</td>
<td>Schizoaffective disorder</td>
</tr>
<tr>
<td>Treatment resistance</td>
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</tbody>
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Need for rapid treatment response:
• Refusal of food or water leading to nutritional compromise
• Medical comorbidity precluding use of psychotropic medication
• Persistent suicidality

Future Directions

• Self-Administered Gerocognitive Examination
  • Induction vs maintenance ECT protocol
  • Alter cognitive screen protocol for changes ECT parameters

Cognitive Screens

Baseline ECT Treatment (frequency?) Post-ECT

Self-administered?

yes

no

MoCA

MMSE

SAGE

NIH Toolbox Cognitive Battery

SLUMS

MIS

MoCA

MMSE

SAGE

NIH Toolbox Cognitive Battery

SLUMS

MIS

MoCA

MMSE

SAGE

NIH Toolbox Cognitive Battery

SLUMS

MIS

MoCA

MMSE

SAGE

NIH Toolbox Cognitive Battery

SLUMS

MIS

Self administered?

yes

no

Cognitve side effects from ECT with the

Acknowledgments

I would like to thank Dr. Abbott, all of those involved in the ECT service at UNM, and the department of psychiatry.

References

2. 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
5. Self-Administered Gerocognitive Examination is a self-administered cognitive examination that can be completed anywhere in 10 to 15 minutes.5
6. Tests multiple cognitive domains including orientation, language (picture naming, verbal fluency), memory, executive function, calculation, abstraction, visuospatial abilities. 6
7. No training is required to administer or take the test. 8
8. Four forms of the test are available. 
9. Similar sensitivity and specificity to MMSE in detecting cognitive impairment.6
10. Has not been studied specifically in detecting cognitive side effects related to ECT.