

Geriatric Behavioral Health Conference

Beyond Depression: Use of Electroconvulsive Therapy in Geriatrics
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Presentation adapted from:
 Chapter 9 of The American Psychiatric Publishing Textbook of Geriatric Psychiatry, Fifth Edition (Editors: Steffens, Blazer, Mughda, Thakur)
 DSM-5 & DSM-5-TR Clinical Cases (Editor: John W. Barthal, M.D.)
<https://doi.org/10.1177/0898010119856654>
<https://pubmed.ncbi.nlm.nih.gov/34252222/>
 Am J Psychiatry 2019; 176:1110-1118 | doi: 10.1176/appi.ajp.2019.16010118
 International Society for ECT and Neurostimulation (ISEN)

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DISCLOSURE

- I do not have any financial relationships with commercial interest companies to disclose.
- I will be discussing off-label use of a commercial product.

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Learning Objectives

- Review the outcome of landmark studies including Prolonging Remission in Depressed Elderly (PRIDE).
- Describe the selection of patients, indications, contraindications, and modifications of electroconvulsive therapy.
- Review modifiable factors that contribute to positive outcomes.

Electroconvulsive therapy - Background

- Cerletti and Bini 1938 (ECT) treated unidentified 39 Y/O man found delusional in a train station.

Ugo Cerletti



Cerletti's ECT machine



Electroconvulsive therapy

For older people with severe depression and dementia, ECT has favorable risk and benefit ratio, True or False?

Explanation: Studies with sertraline and mirtazapine were not impressive. Adverse effects of antidepressants for older people, including risk of falls, confusion, hyponatremia, QTc prolongation (citalopram) .

References:

Blazer DG, Steffens DC. Depressive disorders; in American Psychiatric Publishing Textbook of Geriatric Psychiatry, 5th ed. Edited by Steffens DC, Blazer DG, Magpha ME, Arlington, VA, American Psychiatric Publishing, 2015, pp 259-270

Schwarz S, Froelich L, Burns A. Pharmacological treatment of dementia. Curr Opin Psychiatry 2012; 25:542-550

Prolonging Remission in Depressed Elderly (PRIDE)-phase 1 and 2.

- Funded by the National Institute of Mental Health (NIMH)
- Conducted by the Consortium for Research in ECT (CORE).

ECT remission rate in previous two CORE studies.

Bilateral electrode placement with remission rate of 69.7% in 244 patients age 60 and over.

In the second CORE study, remission rate of 70.4% in 27 patients age 60 and over.

Right Unilateral Ultrabrief Pulse ECT in Geriatric Depression: Phase 1 of the PRIDE Study. Kellner et al. (2016).

Am J Psychiatry. 2016 November 01; 173(11): 1101-1109. doi:10.1176/appi.ajp.2016.15081101.

Method:

Right unilateral ultrabrief pulse ECT plus open-label venlafaxine at seven academic medical centers.

The primary outcome measure was remission, assessed with HAM-D.

Phase 1 of the PRIDE study Results:

Of 240 age 60 and over patients, 172 completed it.

61.7% (148/240) met remission criteria; 70% (169/240) met response criteria.

Mean decrease in HAM-D score was 24.7 points (95% CI=23.4, 25.9), with a mean final score of 6.2 (SD=2.5) and an average change from baseline of 79%. The mean number of ECT treatments to remission was 7.3 (SD=3.1).

Remission rates in this study are approximately twice those of antidepressant medications in similar populations.

Phase 1 of the PRIDE study

A recent meta-analysis of ECT plus antidepressant compared with ECT alone failed to support the advantage of medication with ECT.

Comparing highest and lowest venlafaxine dosages, no difference in efficacy outcomes, effect was attributable to ECT.

Acute phase (phase 1) enter the randomized phase (phase 2) with the potential relapse prevention effect of antidepressant already initiated.

Phase 1 of the PRIDE study

Conclusions:

ECT, plus venlafaxine, is a rapidly acting and highly effective treatment for depressed older patients, with excellent safety and tolerability, supporting the efficacy of ECT to treat severe depression in older patients.

A Novel Strategy for Continuation ECT in Geriatric Depression: Phase 2 of the PRIDE Study

AmJPsychiatry 2016; 173:1110-1118; doi: 10.1176/appi.ajp.2016.16010118

Objective:

The randomized phase (phase 2) of the Prolonging Remission in Depressed Elderly (PRIDE) study - continuation ECT plus medication compared with medication alone in depressed older patients.

Phase 2 of the PRIDE study

Method:

Phase 2 compared two randomized treatment arms: a medication only arm (venlafaxine plus lithium, over 24 weeks) and an ECT plus medication arm.

The intent-to-treat sample, 120 remitters from phase 1. The primary efficacy outcome measure HAM-D, and the secondary efficacy outcome was score on the CGI-S.

Phase 2 of the PRIDE study

Open-label venlafaxine was started in phase 1 at an initial dosage of 37.5 mg/day, with a target dosage of 225mg/day.

Open-label lithium was started at 300 mg/day on the day of randomization.

Lithium was used in moderate dosages as an adjunct to venlafaxine, with a target blood level in the range of 0.4–0.6mEq/L for most patients.

Phase 2 of the PRIDE study

Lithium was held for at least 24 hours before each ECT session, and additional time for clearance of lithium was allowed for patients whose levels were above 0.8 mEq/L.

Randomization and Masking of Treatment Assignment:
Clinical raters and neuropsychological technicians were blind to treatment assignment.
Ratings were administered in a neutral location to protect the blinding.

Phase 2 of the PRIDE study

Results: At 24 weeks, the ECT plus medication group had statistically significantly lower HAM-D scores than the medication only group.

There was no statistically significant difference between groups in MMSE score.

Phase 2 of the PRIDE study

Rates of adverse events were low for both treatment arms, and no serious adverse events were attributable to ECT.

No group difference in global cognitive functioning.

Taken together, these results demonstrate that additional ECT beyond the traditional endpoint of an acute course, plus rescue ECT as needed, is valuable and feasible in maintaining the long-term antidepressant benefits of ECT in a vulnerable geriatric population.

Phase 2 of the PRIDE study

Conclusions:

Additional ECT after remission (here operationalized as four continuation ECT treatments followed by Further ECT only as needed) was beneficial in sustaining mood improvement for most patients.

Electroconvulsive therapy in older population

Tew et al. 1999- Patients over 60 tolerated ECT comparably to those under 60, and the response was similar or better.

Manly et al 2000- ECT may be more effective for and have fewer side effects than antidepressants in older patients.

Electroconvulsive therapy in older population

Journal of Affective Disorders 175 (2015) 8–17

Clinical efficacy of formula-based bifrontal versus right unilateral electroconvulsive therapy (ECT) in the treatment of major depression among elderly patients: A pragmatic, randomized, assessor-blinded, controlled trial

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Electroconvulsive therapy in older population

Journal of Affective Disorders 175 (2015) 8–17

Methods: This single-site, randomized, assessor-blinded, controlled trial was conducted from 2009 to 2013.

Seventy-three elderly patients with MD, unipolar and bipolar, were treated with a course of BF ECT or RUL ECT.

HAM D and MMSE

Electroconvulsive therapy in older population

Journal of Affective Disorders 175 (2015) 8–17

Results:

Response rates for the BF and RUL group were 63.9% and 67.6%, respectively.

Short-term remission, defined as an HRSD17 scorer 7, was achieved in 14 (38.9%) patients in the BF group and 19 (51.4%) patients in the RUL group.

Global cognitive function, as measured by the MMSE, did not deteriorate in the two treatment groups.

Electroconvulsive therapy in older population

Journal of ECT • Volume 32, Number 3, September 2016

Methods: Non demented patients (n = 65) with major depression, aged 60 to 85 years, were randomly allocated to BF ECT and RUL formula based ECT.

Cognitive function was assessed at baseline (T1), within 1 week after a course of ECT (T2), and 3 months after T2 (T3).

Six neuropsychological test measures of memory, 5 of executive function, and 3 of information-processing speed were administered.

Electroconvulsive therapy in older population

Journal of ECT • Volume 32, Number 3, September 2016

Conclusions:

Negligible differences in the cognitive effects of formula-based BF or RUL ECT.

The overall cognitive effects of ECT were equally favorable for each of the groups.

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- Challenging cases, discussion, questions and answers.

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