

ELECTROCONVULSIVE THERAPY

ASCP Psychopharmacology Curriculum

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Pretest Question 1

ECT has demonstrated efficacy in the treatment of:

- A. Depressive Episodes
- B. Manic Episodes
- C. Catatonia
- D. Acute Psychotic Episodes
- E. All of the above

Pretest Question 2

Methohexital is the preferred anesthetic agent for ECT because:

- A. It is relatively inexpensive
- B. It is only moderately anticonvulsant
- C. It has quick onset of action
- D. It has brief duration of action
- E. All of the above

Pretest Question 3

Which best describes the role of the medical consultant in the pre-ECT evaluation?

- A. To provide clearance to undergo ECT
- B. To help optimize the patient's medical condition prior to ECT
- C. To tell the psychiatrist if ECT is appropriate for the patient
- D. To identify contraindications to ECT

Pretest Question 4

Which is NOT true concerning the seizure during ECT?

- A. Should be monitored with EEG
- B. Should be monitored with EMG
- C. Cumulative seizure length during a course of ECT is closely correlated with clinical outcome
- D. Failure to elicit a seizure is associated with lack of efficacy
- E. Seizure threshold increases during the treatment course

Pretest Question 5

Discovery of which of the following medical conditions in a patient being evaluated for ECT is most concerning?

- A. Type II Diabetes
- B. Recent Myocardial Infarction
- C. HIV/AIDS
- D. Psoriasis
- E. Epilepsy

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1985 NIMH Consensus Conference

“Medical school curricula should include education in the use of ECT. Psychiatric residency programs should include complete ECT training: indications, contraindications, risks, clinical management, informed consent, and evaluation of outcome. The American Board of Psychiatry and Neurology should include questions about ECT in its oral and written examinations.”

ACGME Competencies

July 1, 2007

Section IV: Educational Program; Item 3 (d)

“Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents:

“(3) should develop competence in:

“(d) understanding the indications and uses of electroconvulsive therapy.”

Major Teaching Points

- ECT is the most effective acute treatment for major depression
- It is typically reserved for patients with treatment resistant illness
- Although performed by only a small percentage of psychiatrists, all psychiatrists should know enough to refer when appropriate

Major Teaching Points

- ECT is the induction of a generalized seizure under general anesthesia for therapeutic purposes
- Two treatment schedules are used:
 - An acute course (2-3 times per week) achieves current episode remission
 - Continuation/Maintenance ECT consolidates the benefits and inhibits recurrence
- ECT is increasingly performed on an outpatient basis

History

Ladislav Meduna



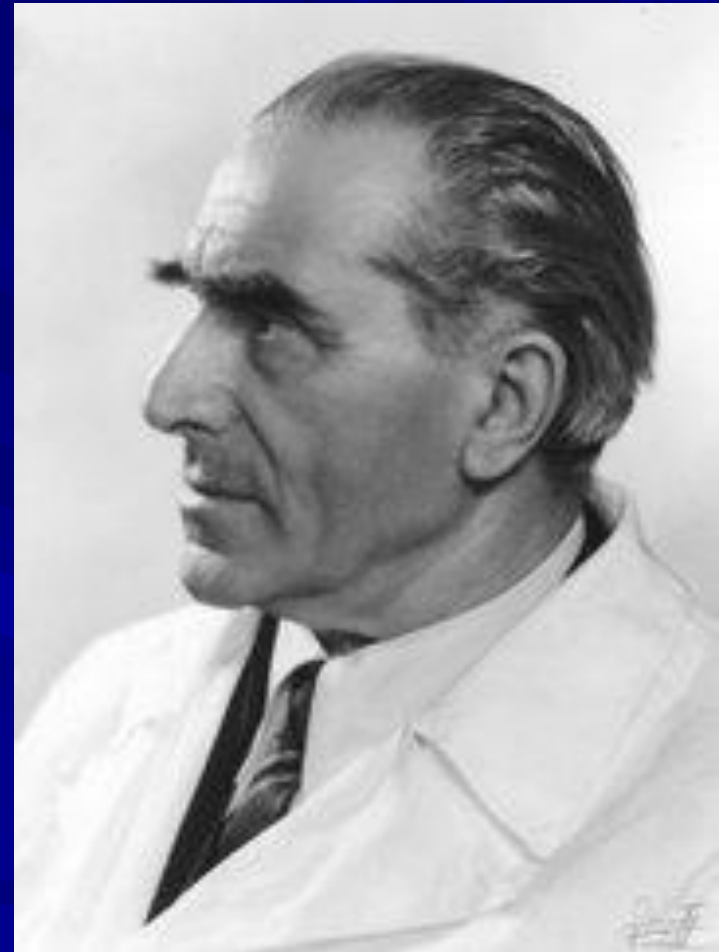
Meduna (1896-1964)

- “Biological Antagonism”
 - Observation that epilepsy and schizophrenia rarely co-existed in the same patient
 - Differing glial concentrations in brains of patients with epilepsy versus psychosis
- Psychosis improved after seizures
- Used intramuscular camphor injections and later intravenous pentylenetetrazol to induce seizures
- First treated patient with catatonia in 1934

History

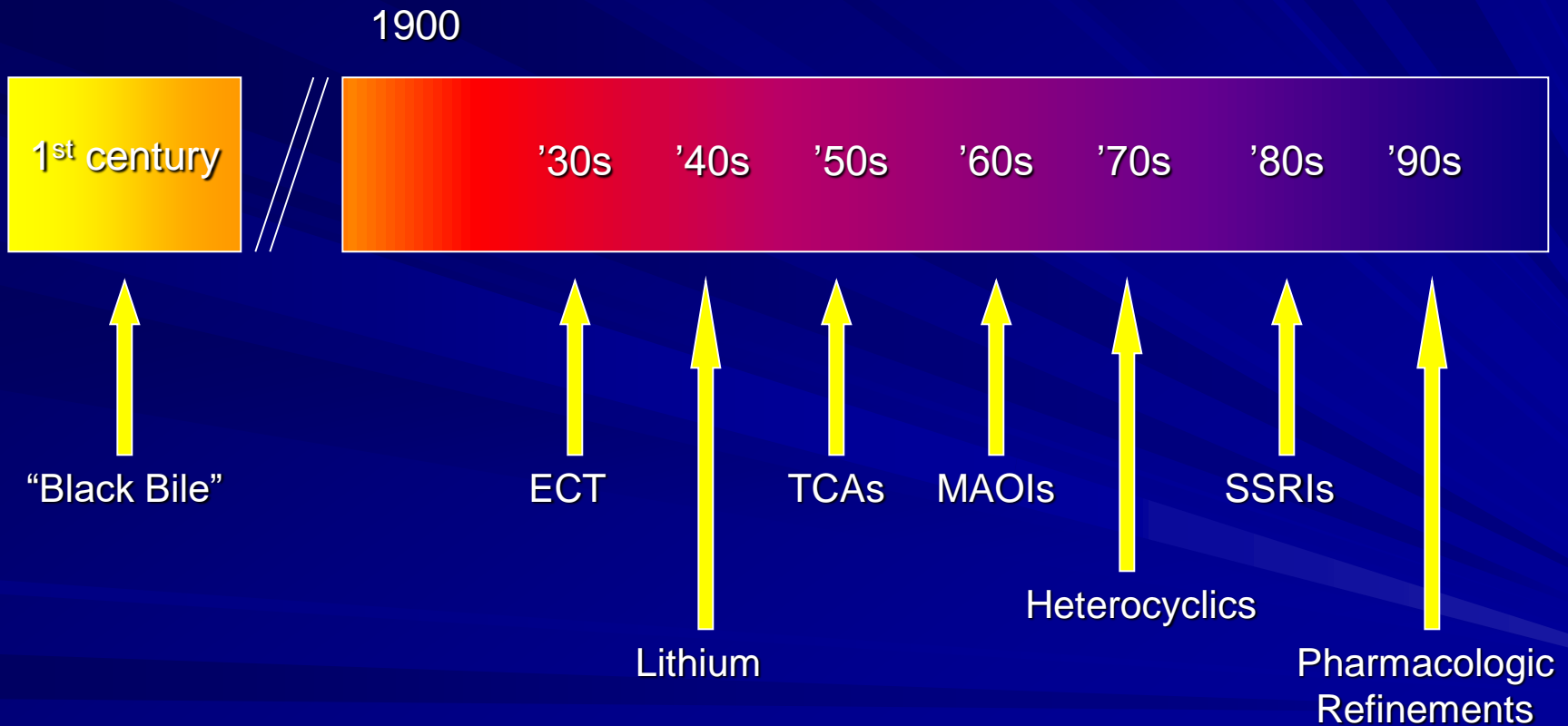
Ugo Cerletti

- Along with Lucio Bini in 1937 first to use electricity to induce seizures
- Electrically-induced seizures are more reliably produced than those chemically-induced
- First treated a patient with catatonia in 1938



Ugo Cerletti (1877-1963)

Developments in Medical Treatment of Depression



Advances in Anesthesiology

- Early ECT was associated with patient discomfort and injury, including fractures suffered during motor seizure
- 1940 Abram E. Bennett, an American psychiatrist, used curare for muscle paralysis
 - 1951 Succinylcholine developed
- In the 1950's short-acting barbiturates were used to produce amnesia for feelings of smothering as respiration was inhibited

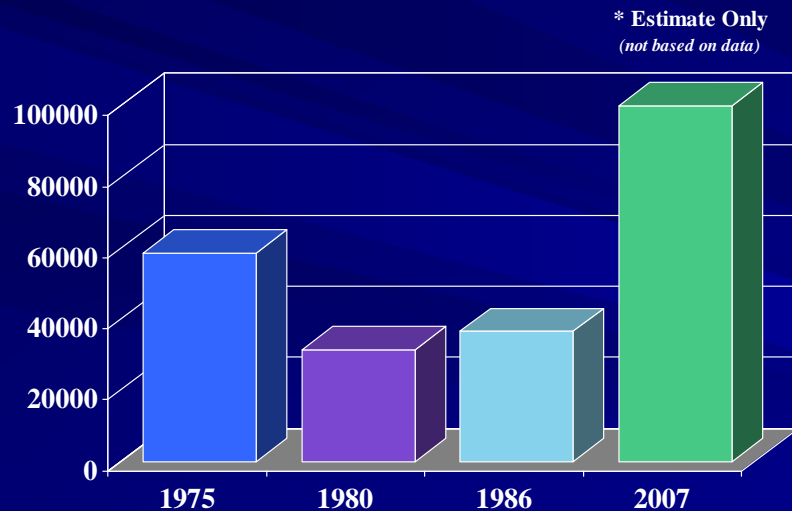
Advances in Anesthesiology

- Use of general anesthesia is considered a major advancement in how modern ECT is performed



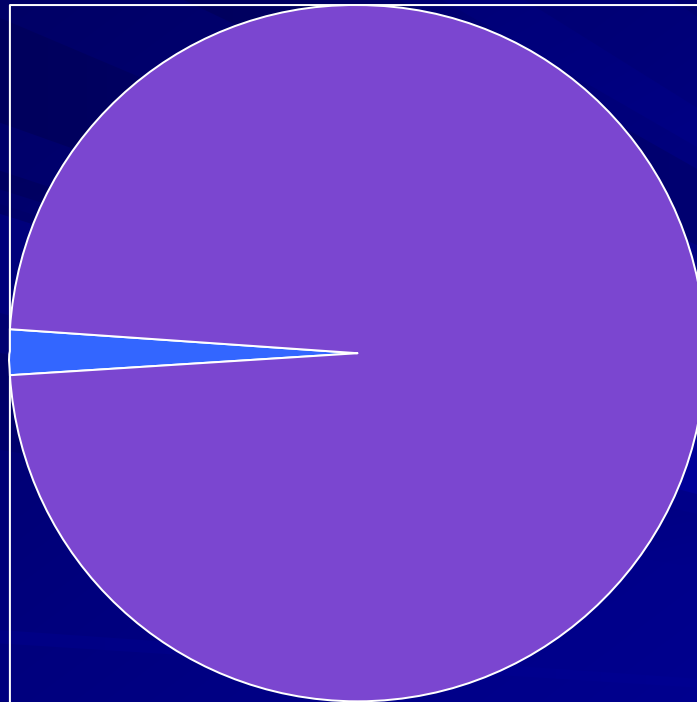
Epidemiology

Use of ECT in the United States



- Approximately 100,000 patients/year receive ECT in the USA
- In the USA ECT is one of the most common procedures performed under anesthesia
- 1 - 2 million patients/year probably receive ECT worldwide

ECT is Small Piece of Pie

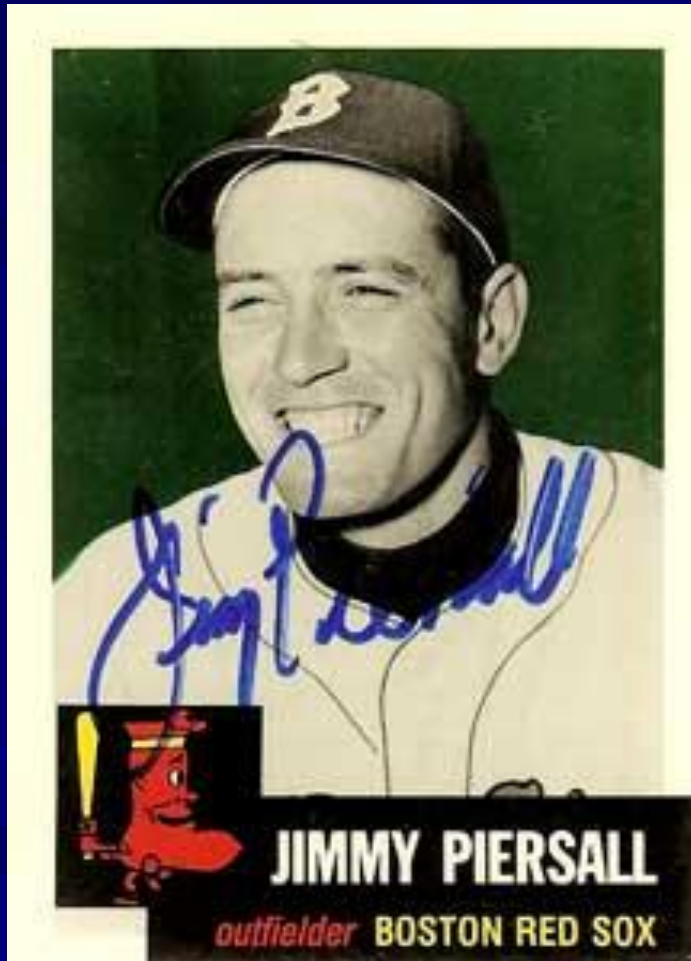


- **ECT**
100,000/year
- **Depression in US: 21 million/year**

Patient Selection/ECT Consultation

- Three Questions Should Be Answered as Part of an ECT Consultation:
 - Does the patient have an ECT-responsive illness?
(Indications/Benefit)
 - Does the patient have any medical conditions that require modifications of technique or increase the risk of the procedure? *(Risk/Contraindications)*
 - Has appropriate informed consent been obtained?
(Capacity)

Indications



ECT Recipient Jimmy Piersall (1929 – Present)

- Major Depressive Episode
 - Unipolar and Bipolar
- Mania
- Mixed Affective State
- Catatonia
- Schizophrenia
- Schizoaffective Disorder

Use of ECT

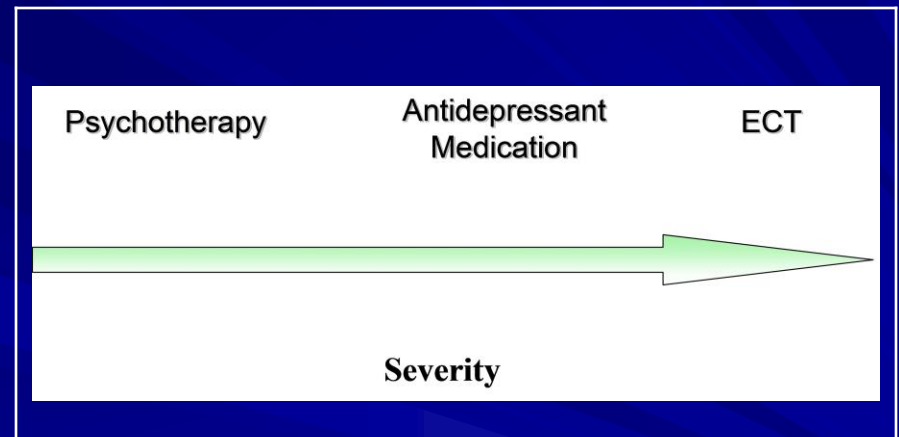
Primary (as a first-line treatment)

- Suicide risk
- Psychosis/Agitation
- Malnutrition/Inanition
- Catatonia

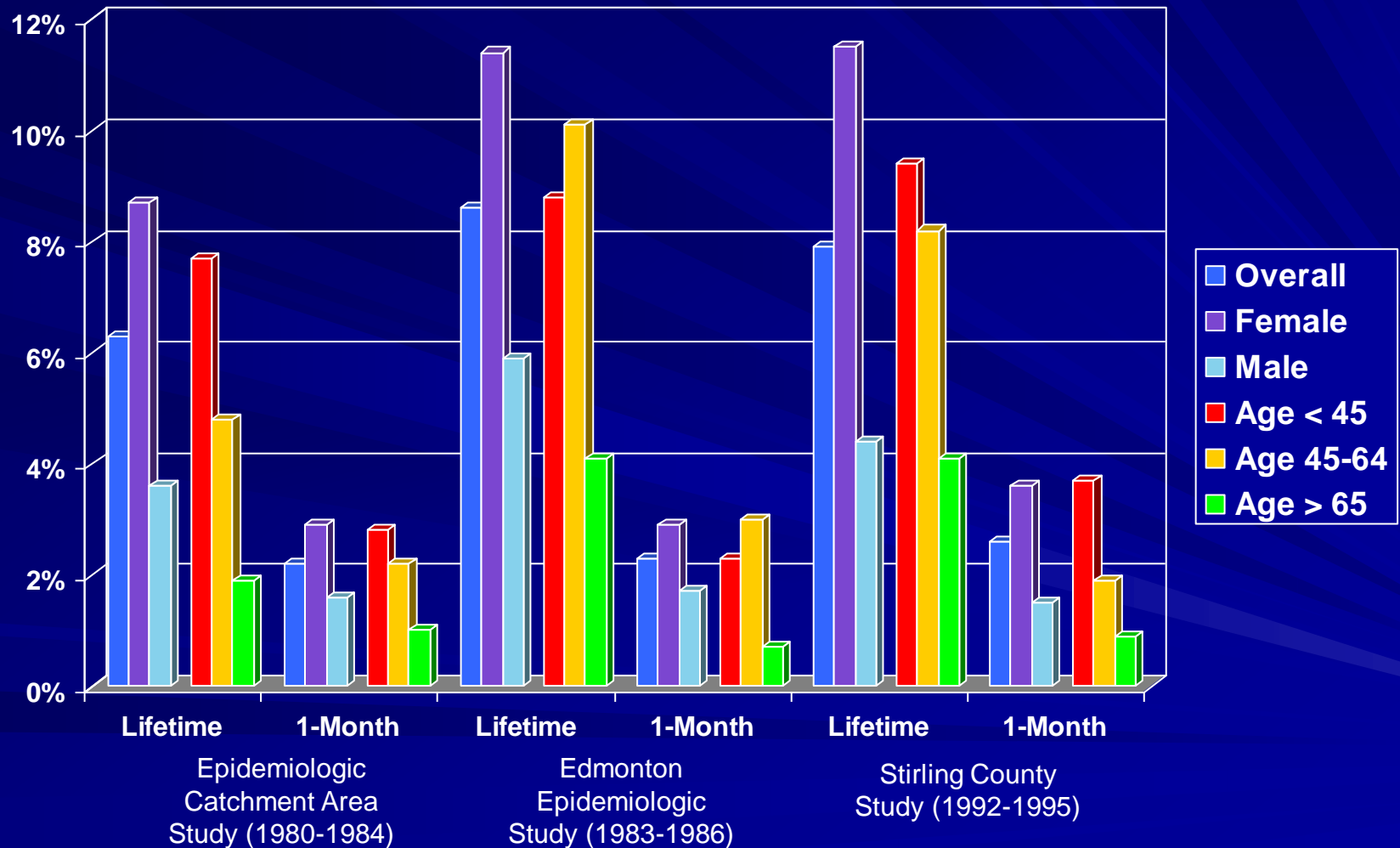
Secondary (when other treatments fail or cannot be used)

- Medication failure
- Medication intolerance

Choice of Treatment Modality in Depression



Lifetime and 1-Month Prevalence Rates of Major Depression in 3 North American Studies



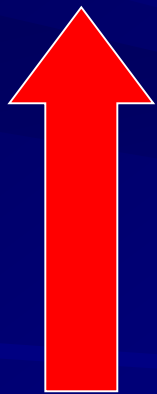
ECT in Depression

- ECT is the most effective short-term treatment for major depression
 - Remission rates > 80%
- No other treatment is superior to ECT in:
 - Likelihood of remission
 - Quality of remission
 - Speed of remission
- Prompt use of ECT for inpatients is associated with shorter and less costly hospital stays
 - 1993 Healthcare Cost and Utilization Project of the Agency for Health Care Policy

Morbidity & Mortality of Depression

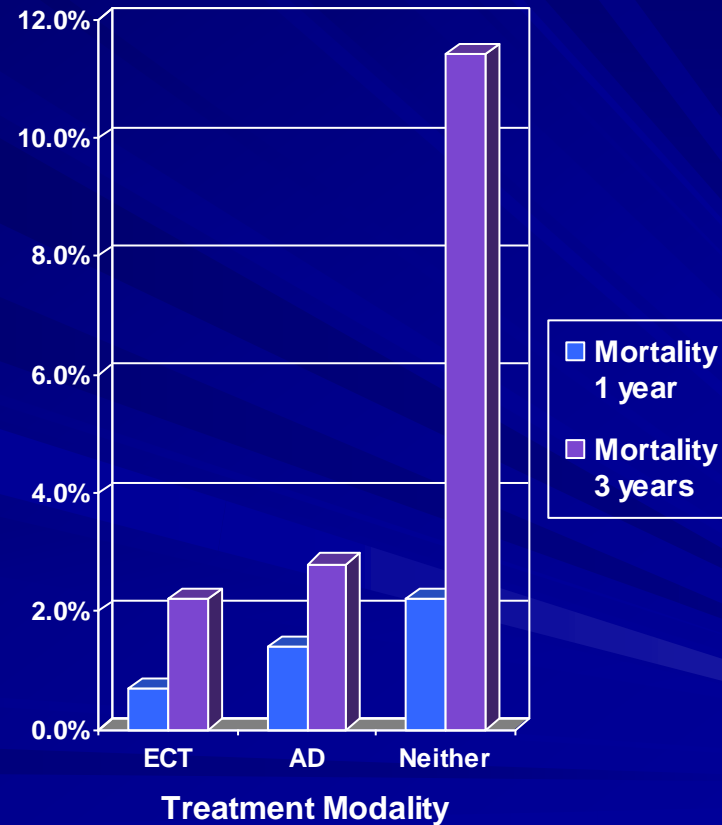
Importance of Aggressive Treatment

Incomplete Remission
Associated With:



Chronicity
Risk of Relapse
Functional
Impairment
Suicide⁷

Mortality in Depression



Efficacy in Depression

- Patients who fail to respond to one or more adequate medication trials have lower response rates to ECT
 - 50 – 60%
- When ECT is used as a first line treatment or for those who have received inadequate pharmacotherapy
 - Response rates approximately 80% – 90%