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E.C.T.: A GUIDE FOR STUDENTS and TRAINEES

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HISTORY
- Early 20th cent. “Forced normalisation”
- 1938 Meduna: cardiazol seizures
- 1939 Cerletti & Bini: electrical induction
- 1951 Slater paper
- 1950’s-1960’s: overuse, disrepute, anti-psych movement
- 1980’s RCPsych: audits, standard setting
- 2003 ECTAS

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MODERN USAGE 1: INDICATIONS
- Depressive illness
- Severe/resistant mania
- Puerperal psychoses
- Catatonia
- Other: Parkinson’s
- Neuroleptic malignant syndrome
MODERN USAGE 2: ADMINISTRATION

- Brief pulse
- Bilateral
- Policies for titration of dose
- Only certain machines approved
- EEG monitoring

DOSE TITRATION

- Significant individual variation in seizure threshold (ST)
- Initial aim is to determine pt.'s ST
- Therapeutic dose = moderately supra ST
- Individualisation of treatment - to keep dose at minimum
- Side effects related to dose used

FACTORS AFFECTING SEIZURE THRESHOLD

<table>
<thead>
<tr>
<th>INCREASED</th>
<th>DECREASED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzodiazepines</td>
<td>Antipsychotics</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>Tricyclics</td>
</tr>
<tr>
<td>Age</td>
<td>Caffeine</td>
</tr>
<tr>
<td>Baldness</td>
<td>Hyperventilation</td>
</tr>
<tr>
<td>Male</td>
<td>Methohexitone</td>
</tr>
<tr>
<td>Thick skull</td>
<td>Theophylline</td>
</tr>
<tr>
<td>Recent ECT</td>
<td>Beta blocker -</td>
</tr>
<tr>
<td>Bilat. ECT</td>
<td>Shortens seizure</td>
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</tbody>
</table>
Early evidence of effectiveness

1950's Paper by Eliot Slater in J. Ment. Sci.:
reduction post war of death rate from depression to
1/8 of pre war rate subsequent to intro. Of E.C.T.
Study excluded suicides. Causes would have been:
• dehydration / malnutrition
• infection / D.V.T.A.P.E.
• bed sores
Other consequences (of chronic depression)
• osteoporosis, cognitive impairment (?)
• psychosocial-loss of confidence, work, marriage

EVIDENCE
Efficacy and safety of ECT: depressive Disorders: Lancet 36 March 2003

• Meta analysis of studies of short term efficacy
• ECT vs. Sham: effect size = -0.9
• ECT vs. meds: effect size = -0.8
• bilat vs. unilat: effect size = -0.3

EVIDENCE CONTINUED - LANCASTER PAPER

• Trade off of efficacy and side effects
  * greater cog. Imp. If:
    _ bilateral
    _ high dose
    _ > 2 treatments per week
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EVIDENCE CONT.: Lancet paper

No data on:
- long term efficacy
- details of cog. Problems
- maintenance treatment
- the elderly
- pregnancy
- adjunctive treatment

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CONTRAINDICATIONS TO ECT

Arguably, nil absolute
balance of relative contraindications:
- recent M.I. Or C.V.A.
- Aneurysm
- raised intracranial pressure
- DVT

Against risk of psychiatric disorder
n.b. ECT safe if pacemaker working & pt. insulated

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POSSIBLE MECHANISMS OF ACTION

INCREASED
- ACTH, prolactin, TRH
- Oxytocin, endorphin, vasopressin release
- 5HT, G protein coupling
- REM latency
- BDNF expression

DECREASED
- Beta & muscarinic receptor regulation
- G protein coupling
- Csf & plasma Ca
- Norad. turnover
N.I.C.E. REPORT
Guidance on the use of electroconvulsive therapy
April 2003

- Restricted indications
- Emphasis on obtaining valid consent
- Monitoring of clinical state
- Monitoring of cognitive function
- Importance of training & audit

PATIENT PERSPECTIVES ON ECT:
SYSTEMATIC REVIEW
Rose et al BMJ 2003 326 1363-5

- Systematic review of studies of patients views post ECT
- Perceived benefit depended on when questionnaire was administered & by whom
- At least 1/3 pt’s reported memory loss
  - Retrograde/autobiographical
  - I.e. not routinely tested

USEFUL SOURCES OF INFORMATION

- Edinburgh textbook of Psychiatry
  appendix 2 by C. Freeman
- Principles & practice of geriatric psychiatry
  chap. 77 by D. Wilkinson
- A History of Psychiatry by Edward Shorter
  pp 207-224
- www.sean.org.uk