

Indications for ECT

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- ECT in Estonia
- ECT in Eastern European countries
- Indications



Population: 1.3 million



11 psychiatric inpatient services

History of ECT in Estonia

- Early 1940-ies
- In 1946 2117 procedures in NEMC
- In 1951 „Soviet Psychiatric Theory“: reduce ECT!
- Next decades 4 times less, but never restricted
- 1994 modified ECT
- 2010 RUL ub ECT
- No guideline
- No specialized education

ECT suits in Estonia



NEMC



PH



VH



TUH



SEH

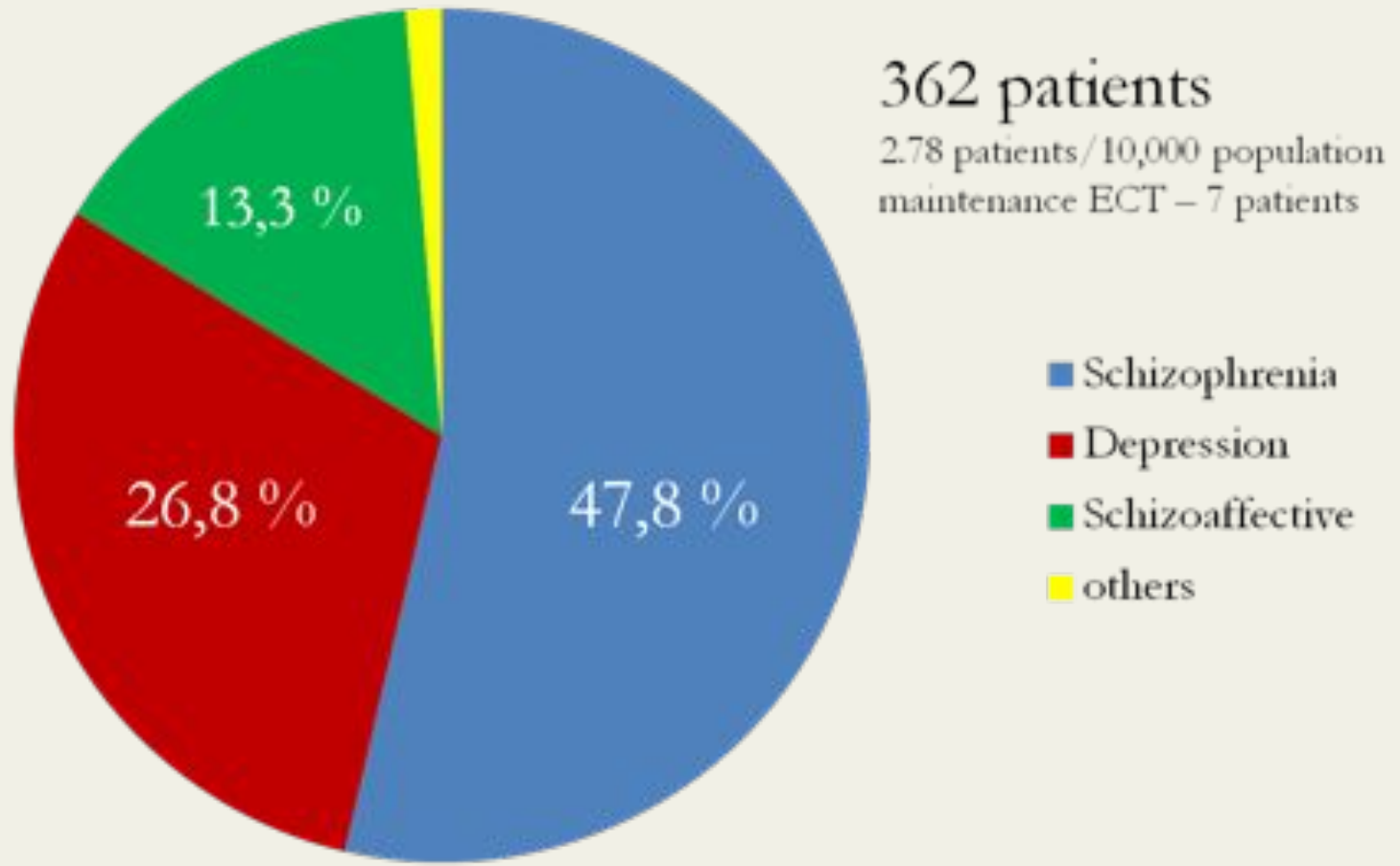
2012 – 1559 procedures
2013 – 1612 procedures

- „Use of electroconvulsive therapy in the Baltic states “, Lõokene M, Kisuro A, Mačiulis V, Banaitis V, Ungvari GS, Gazdag G; World J Biol Psychiatry. 2013 Dec 13. [Epub ahead of print]
- 21-item, semi-structured questionnaire was sent out in Estonia, Latvia and Lithuania
- All institutions replied
- Data from 2010

	NEMC	TUH	VH	PH	SEH
No. of pt	210	54	14	61	23
% of inpatients	6,4 %	3 %	1,3 %	10,1 %	2,3 %
Sex distr.	F 62%, M 68%	F 68%, M 32%	F 36%, M 64 %	F 54 %, M 46 %	F 60%, M 40%
Av sess	4	5	5	5	5.5
Highest sess	16	15	17	14	10
Main indication	Sch	Depression	Sch	Sch	Sch
Electrode pos.	BT, RUL	BT, RUL	BT	BT	BT
Anesthetic	Etomidate, propofol	Etomidate	Etomidate, thiopentale	Propofol	Propofol

NEMC, North Estonian Medical Centre; TUH, Tartu University Hospital; VH, Viljandi Hospital; PH, Pärnu Hospital; SHE, South Estonian Hospital; RUL, right unilateral, BT, bitemporal.

Indications in Estonia (2010)



ECT in Baltic States (2010)

LITHUANIA

- 4 institutions provide
- Modified, BT
- 120 patients (0.375 patients/10,000 population)
- Prohibited under 18
- Main indication: schizophrenia

LATVIA

- 2 institutions provide
- Gintermuiza, Daugavpils Psychoneurological Hospital
- 3+6 patients
- Main indication: catatonia

Significant differences in the use and availability of ECT between the Baltic countries

ECT in Eastern Europe

- Electroconvulsive Therapy in Hungary
 - 2002: 34 institutions, 0,6 % inpatients, schizophrenia 55%, affective disorders 40 %
 - „Electroconvulsive therapy in a Hungarian academic centre (1999-2010)“ Gazdag G; Psychiatr Danub. 2013 Dec;25(4):366-70: Semmelweis University (DPPSU) in Budapest: 2,6 % inpatients, >50% schizophrenia, relatively low no of sessions (~4.75)
- „Electroconvulsive Therapy in Slovakia“ Dragasek J, J ECT 2012 Jun; 28(2):e7-8:
 - data from 2008,
 - 33 insitutions, 2.9 patient/ 10000
 - Depression 64%
 - 50% used sine wave device

ECT in Eastern Europe

- „Electroconvulsive Therapy in Croatia“ Kuzman MR, Gazdag G; J ECT. 2014 Mar 12. [Epub ahead of print]
 - Data from 2012-13
 - 3 facilities – 51, 3, 1 patients
 - Main indication: Schizophrenia, followed depr schizoaffective disorder
 - Bifrontal placement
- Electroconvulsive Therapy in Bulgaria“ Hranov L, Gazdag G; J ECT 2012 Jun;28(2):108-10
 - Data from 2010
 - 4 institutions (all academic, in Sofia)
 - 0,16 patient/ 10000
 - Main indications: depression, schizophrenia, mania
 - Differences in electrode positioning

ECT in Eastern Europe

- „Electroconvulsive therapy practice in Poland“ Gazdag G; J ECT. 2009 Mar;25(1):34-8
 - 20 institutions
 - 0,79 % of inpatients
 - Main indication: affective disorder
- „Electroconvulsive therapy practice in Serbia today“ Spiric Z, Gazdag G; Psychiatr Danub. 2014 Mar;26(1):66-9
 - 2012: 1 center, 54 patients, 0.5/ 10000
 - Main indication: depression
- „Electroconvulsive Therapy Practice in Ukraine“ Olekseev A, Gazdag G; J ECT 2014 May 1 [Epub ahead of print]
 - 8 institutions, but 3 refused to give information
 - 3 used unmodified ECT

ECT in Eastern Europe

- No published information yet from all countries
- Significant differences between countries
- Generally very limited availability
- Equipment and technical knowledge mostly modern

Referral to ECT

- Diagnosis
- Nature and severity of symptoms
- History of poor drug response
- History of good ECT response
- Risks of other treatments outweigh ECT risks
- Failure to respond to pharmacotherapy
- Patient preference

Contraindications

- There is no absolute contraindication to ECT
- Risk-benefit analysis approach
- Situations with substantial risk:
 - Recent MI with unstable cardiac function
 - Space-occupying cerebral lesion
 - Increased intracranial pressure
 - Recent intracerebral hemorrhage
 - Unstable vascular aneurysm or malformation
 - Morbid obesity; sleep apnea; airway obstruction
 - Retinal detachment(+/-), pheochromocytoma
- Wrong patient!

Main diagnostic indications

- Depression
- Mania
- Schizophrenia

Symptom-based approach

Catatonic symptoms

Suicidal thoughts

Psychomotor retardation

Hallucinatory behaviour

Refusal of eating and drinking

Violence

Excitement

Exhaustion



Depression

- The main indication in most countries
- Plenty of evidence
 - Early open clinical trials
 - ECT vs sham-ECT trials
 - ECT vs pharmacology
 - ECT vs rTMS
 - Bilateral or unilateral?
- Pharmacotherapy always remains (if possible)

Rates of Response in Major Depression

- Early reports indicated remission rates of 80% to 100%
- Recent studies suggest lower response rates
- Response rate around 50% in medication-resistant patients

Predictors of Response in Major Depression

- There are no strong predictors of good clinical response
- Severe („melancholic“) depression + relapsing course + family history
- Psychotic depression
- Secondary depressions/ atypical depression respond less well

In clinical practice

- Rapid definitive response is needed
- High suicidal risk
- Severe psychomotor retardation/ refusing eating and drinking
- Treatment-resistance when have responded to ECT previously
- Pregnancy/ older patients
- Patients preference

Recurrent episode

- When responded to ECT previously
- Doesn't have to be so severe to start treatment
- Usually respond well
- Maintenance therapy?

Schizophrenia

- Augmentation with pharmacotherapy
- Acute psychosis with urgent need
- Treatment-resistant schizophrenia?
- Symptom-based indications
 - Catatonic symptoms
 - Positive symptoms - +/-
 - Affective symptoms – intermediate effect
 - Negative, Cognitive symptoms – no
- Several reviews recently („Electroconvulsive therapy in treatment-resistant schizophrenia: prediction of response and the nature of symptomatic improvement“ Chappattana W, Sackeim HA; J ECT 2010 Dec;26(4):289-98)

Mania

- Controlled evidence is limited
- As effective as antipsychotics and stabilizers
- Does not shorten episodes
- Relieves quickly severe symptoms
- Mania Can Be Life-Threatening
 - Violence
 - Exhaustion
 - Excitement
 - „delirious mania“

Catatonia

- “Rediscovering catatonia: the biography of a treatable syndrome” Fink M., *Acta Psychiatr Scand Suppl.* 2013;(441):1-47
- ECT as a first-line treatment along BDZ
- Unrelated to underlying cause all catatonic symptoms usually respond well to ECT
 - Psychiatric disorders (affective disorders, schizophrenia, tourette, intellectual disability?)
 - Secondary to medical condition (neurological/ systemic diseases)
 - Malignant catatonia

Autoimmune encephalities

- Anti-NMDAR encephalities
- Recognized in 2007
- 80% females
- Syndrome in several stages:
 - 70% of the patients presenting with a prodromal phase of fever, malaise, headache, upper respiratory tract symptoms, nausea, vomiting and diarrhoea
 - Typically within two weeks patients develop psychiatric symptoms including insomnia, delusions, hyperreligiosity, paranoia, hallucinations, apathy and depression
 - Catatonic symptoms, seizures, abnormal movements, autonomic instability, memory deficits may also develop during the course of the disease
- Ab against the GluN1 subunit of the NMDAR in CSF and serum
- Tumor?
- Treatment: tumor resection first-line immunotherapy (corticosteroids, plasma exchange, and intravenous immunoglobulin)
- 75% recover
- How was it diagnosed before? Malignant catatonia?

Autoimmune encephalities and ECT

- Limited (no) evidence
- If and when to use?
- Patient in intensive care
- Can we overachieve seizure treshold in therapeutic value?

Parkinson's disease

- No clear agreement
- Motoric symptoms
 - as an adjunctive therapy
 - effect short
 - Maintenance ECT?
- affective symptoms

Other disorders

- Information based on case reports
- Epilepsy
 - Status epilepticus
 - Epileptic psychosis
- Delirium
- OCD?
- Multisystem atrophy
 - Neurodegenerative disorder
 - Different symptoms incl parkinsonian, autonomic, cerebellar, pyramidal signs, mood disorder
 - Have shown improvement in motor function and mood
- Tourette syndrome
 - 7 reports in drug-resistant patients, quite promising results
- Tardive dyskinesia
 - Information contradictory
- Neuroleptic malignant syndrome
- Huntington?
- Wilson?

Introduced in 1938 -> mechanism of action still?

- Effective in various (even opposite) clinical conditions – implausible that single mechanism of action explains all these effects
- Seizure generalization essential for the efficacy (cortex + centrencephalic structures)
- Stimulus dose must be supratreshold (2,5x BL; 6x RUL)
- Most studies focused on depression
- Several hypothesis (neurotransmitter, anticonvulsive, molecular, neuroendocrine)

Summary remarks

- Significant differences in the use of ECT in Eastern European countries
- Schizophrenia the main indication in Estonia
- Major Depression still the main indication worldwide
- Recognize THE PATIENT!