Efficiency of ECT and continuation ECT for depression in different patient-populations

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Norwegian Sea
ICELAND
NORWAY
SWEDEN
FINLAND
RUSSIA
North Atlantic Ocean
North Sea
UNITED KINGDOM
IRELAND
DENMARK
LATVIA
BELARUS
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What is the remission rate?

What is the response rate?

What is the relapse rate?

What is the rate of regained occupational functioning?

- Clinical trials
- Clinical practice

CUC

- Unipolar depression
- Unilateral treatment 1,5 x ST
- No concomittant pharmacotherapy

- Switch to bilateral after 5-8 unsuccessful unilateral treatments
- Mean number of ECTs 10.6 ECT

- Remission was defined as <11 HAMD-24

- N=316
- Remission rate 50%

Sackeim, H. A. et al. JAMA 2001;285:1299-1307.

CORE I

- Unipolar depression
- Bilateral treatment
- Mean number of ECTs =7.3
- No concomittant pharmacotherapy
- Remission was defined as <11 HAMD-24
- N=531
- Remission rate 64 %

Kellner, C. H. et al. Arch Gen Psychiatry 2006;63:1337-1344.

CORE II

- Unipolar or bipolar depression
- No concomittant pharmacotherapy
- Remission was defined as <11 HAMD-24
- N=230
- Unilateral 6x ST 55%
- Bifrontal 1.5xST 61%
- Bitemporal 1.5*ST 64%
- Up to ten treatments

- Faster improvement with bilateral treatment.
- Most patients achieved remission with six or fewer treatments.
- Similar cognitive effects.

C. H. Kellner, et al. Br J Psychiatry. 2010 March;196(3):226-234

Predictors of remission in the CORE studies

- Higher age
- Psychotic symptoms
- Fewer antidepressant trials
- Atypical features

- But not melancholia as defined by DSM

Fink M. Acta Psychiatr Scand. 2014 129:417-26

OPT-ECT

- Unipolar depression
- Remission was defined as <11 HAMD-24
- N=319

Unilateral 6x ST	49%	61%
Bilateral 1,5 x ST	46%	52%

- Non-responders after 8 treatments received BL 2,5 x ST

Concomittant pharmacotherapy	
placebo	49%
venlafaxine	60%
nortriptyline	63%

- Slightly superior cognitive outcomes in unilateral group and nortriptyline group

Sackeim Arch Gen Psychiatry. 2009;66(7):729-737.

Swedish Quality register for ECT

- N=1167
- Unipolar or bipolar depression
- Remission was defined as MADRS-S <11
- 90% unilateral
- Mean of 7 ECT
- Remission rate 45 %

Emil Gustafsson, U.U.D.M. project report; 2013:24

Predictors of remission in clinical practice

- Older age younger than fifty years 34% vs older 53 %
- Psychotic symptoms 65% vs without 40%
- First epidode of depression vs recurrent 52 % vs 42%
- Alcohol/substance dependence 24% vs without 47%
- Anxiety disorder 38% vs without 43%

Emil Gustafsson, U.U.D.M. project report; 2013:24

Swedish Quality register for ECT

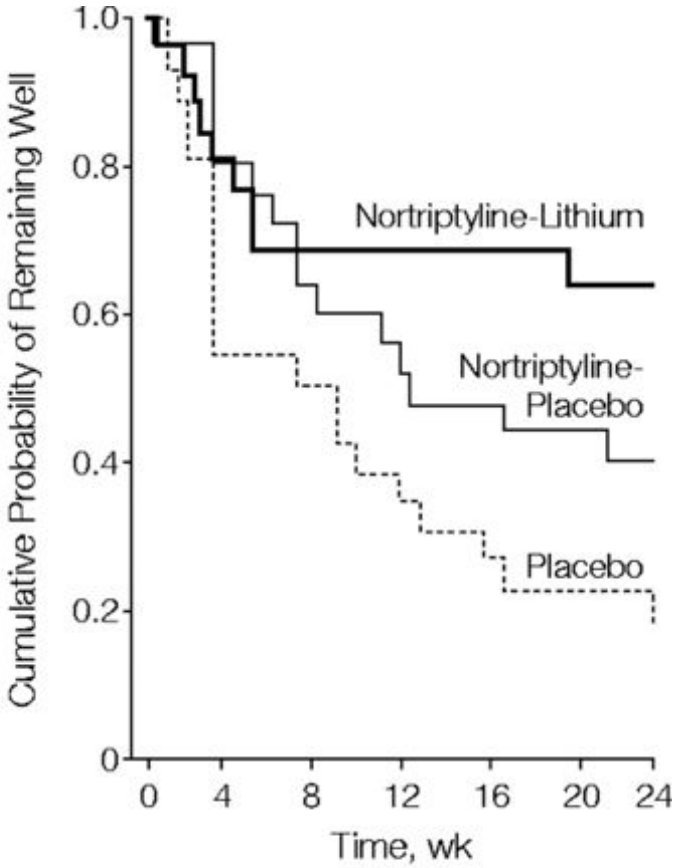
- Unipolar or bipolar depression
- N=936
- Response was defined as CGI-I of much improved
- The response rate was 80%

Predictors of response in clinical practice

- Older than 50 vs younger 84% vs 74%
- Psychotic symptoms vs severe vs moderate symptoms 89% vs 82% vs 73%
- Personality disorder vs no personality disorder 66% vs 81%
- Inpatients/Outpatients 81% vs 66%

Nordenskjöld A, BMC Psychiatry. 2012 Aug 17;12:115.

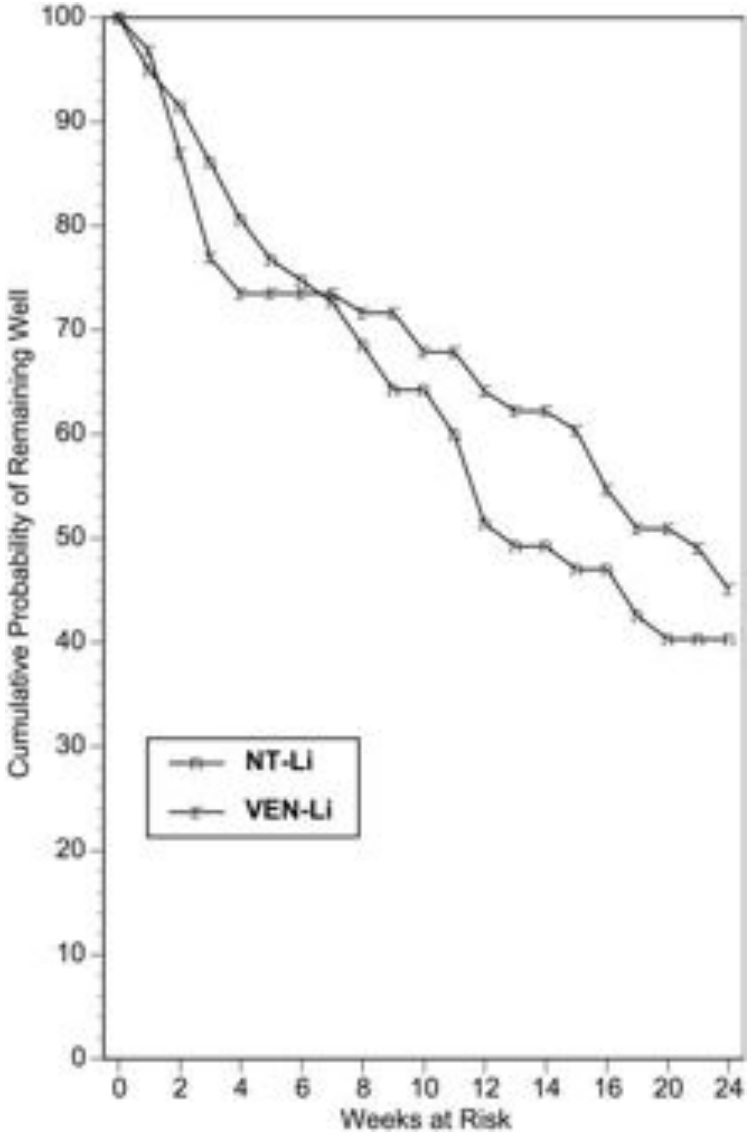
Kaplan-Meier Estimates



No. at Risk

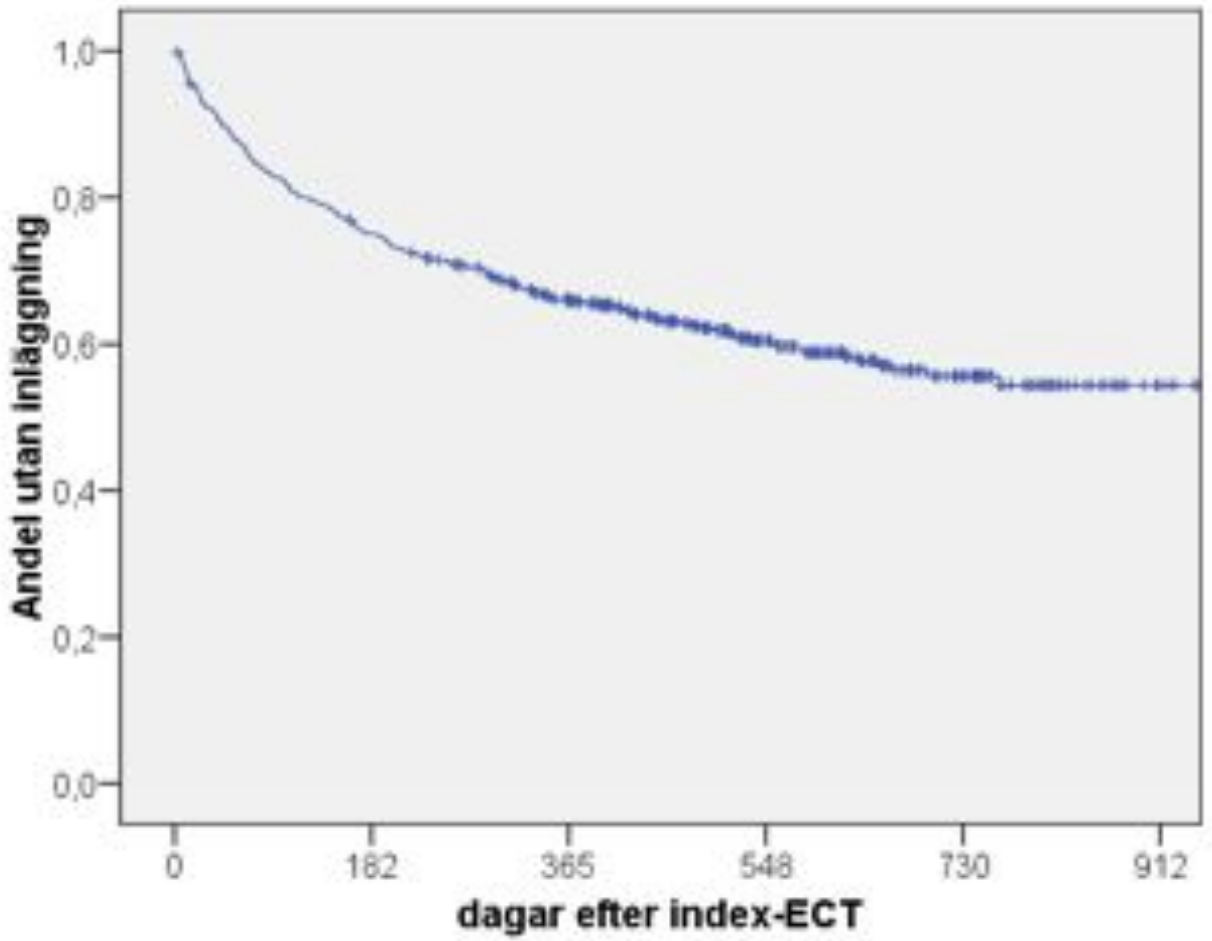
Placebo	29	14	13	9	6	5	4
Nortriptyline-Placebo	27	20	15	13	12	11	10
Nortriptyline-Lithium	28	18	15	15	15	14	14

Sackeim, H. A. et al. JAMA 2001;285:1299-1307.



Prudic J. J ECT. 2013 Mar;29(1):3-12

Rehospitalisation following ECT based on the Quality register



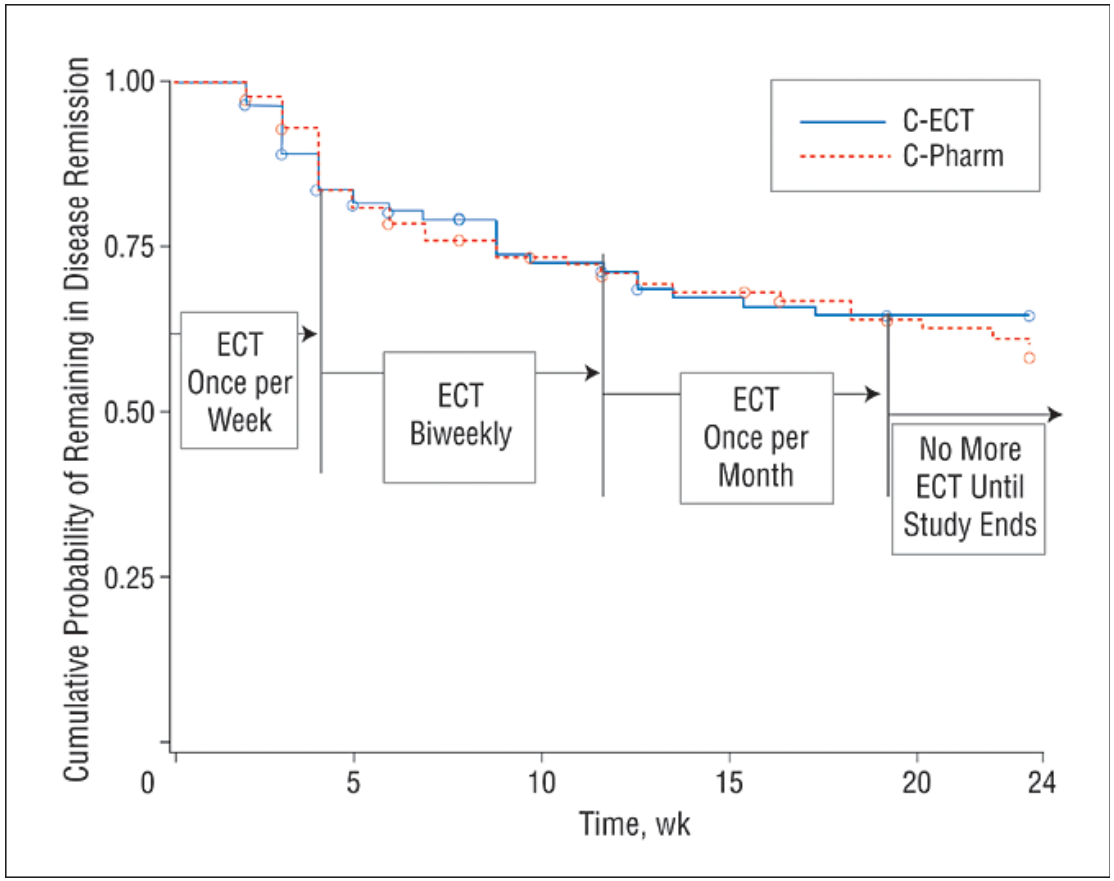
A Nordenskjöld. Depress Res Treat. 2011; 2011: 470985.

Predictors for rehospitalisation based on the Swedish Quality register for ECT

- Hospitalised during index ECT
- Substance dependence
- Benzodiazepines (increased risk)
- Antipsychotics (increased risk)
- Lithium (decreased risk p=0.06)

- Non-randomised observational study

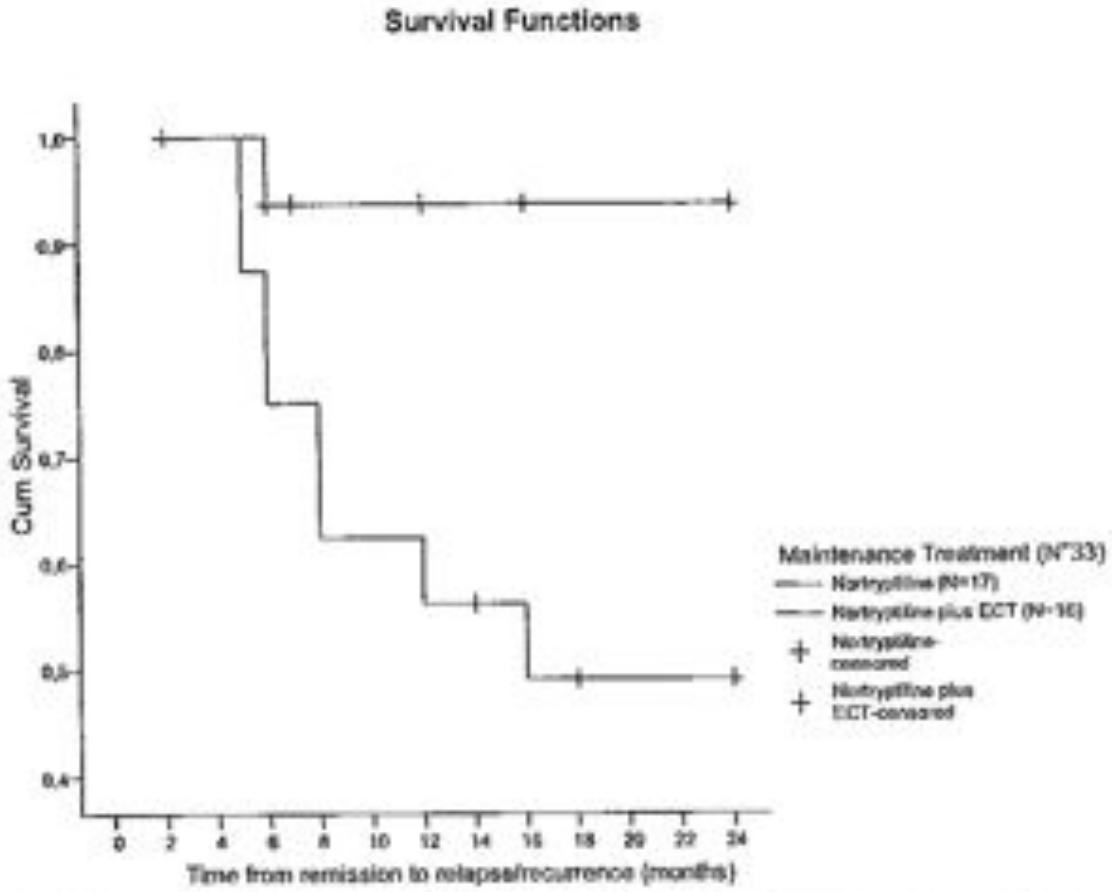
Kaplan-Meier curves showing proportion of patients who remained in disease remission (not disease relapse) during the continuation phase (phase 2)



Kellner, C. H. et al. Arch Gen Psychiatry 2006;63:1337-1344.

ARCHIVES OF GENERAL PSYCHIATRY

FIGURE 2. Comparison Between Times Until Relapse/Recurrence According to Type of Continuation/Maintenance Treatment Subgroups



Navarro et al. Am J Geriatr Psychiatry. 2008 Jun;16:498-505.


HH

ORIGINAL STUDY

Continuation Electroconvulsive Therapy With Pharmacotherapy Versus Pharmacotherapy Alone for Prevention of Relapse of Depression

A Randomized Controlled Trial

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Objective: The primary aim of the study was to test the hypothesis that relapse prevention with continuation electroconvulsive therapy (ECT) plus pharmacotherapy is more effective than pharmacotherapy alone after a course of ECT for depression.

Depression is a major public health concern.[1] In severe depression, more than 70% of the patients experience repeated relapses/recurrences, and chronicity or commit suicide.[2,3] Among patients treated as inpatients, the risk for rehospitalization in

Method

- Multicenter, non-blinded, RCT, 1 year

- Unipolar or bipolar depression
- Responders to ECT (MADRS<15)

- Pharmacotherapy
- Pharmacotherapy + cECT (weekly for 6 weeks, then biweekly)

- Ultrabrief-pulse Unilateral ECT

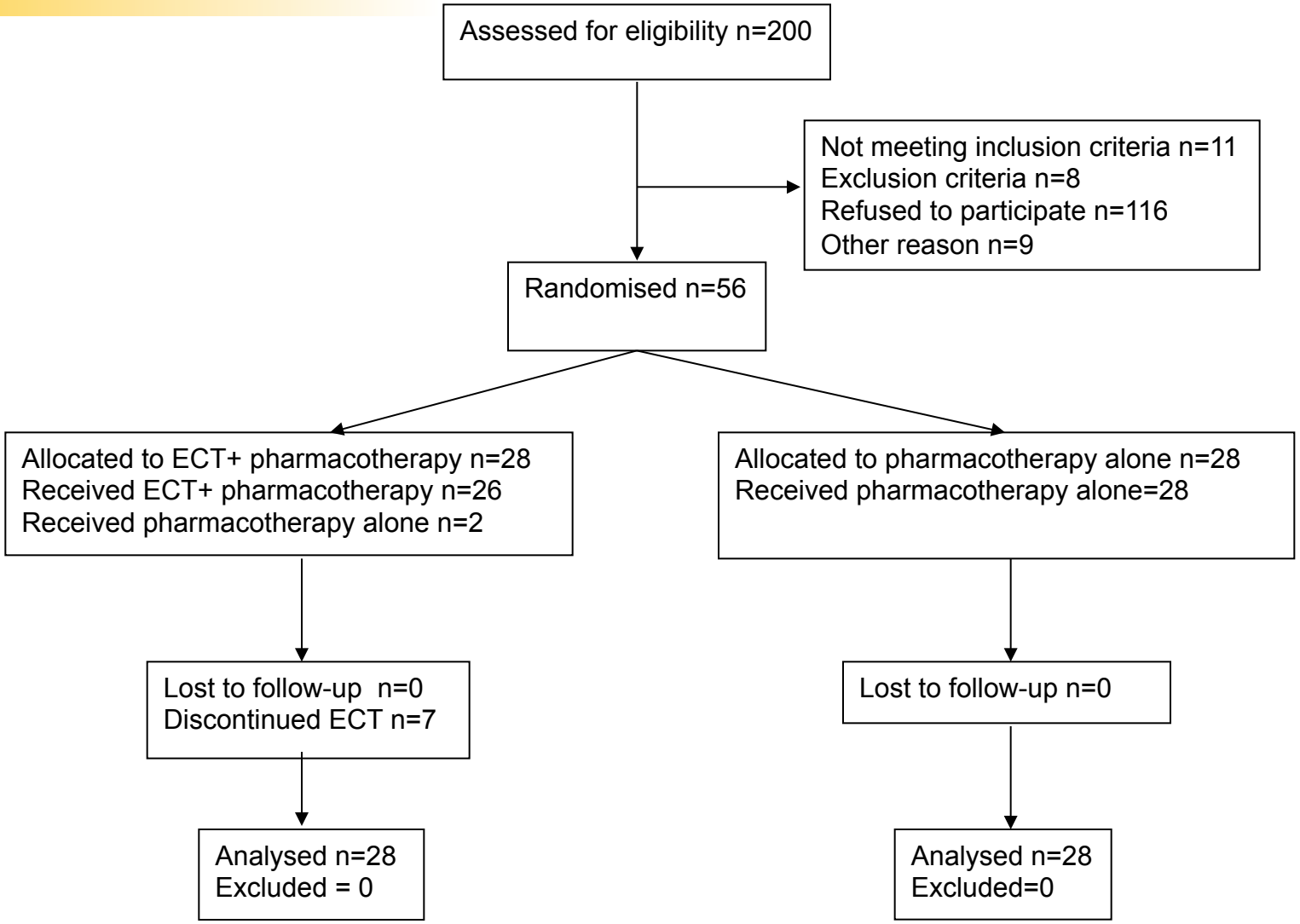

Assessed for eligibility n=200
Not meeting inclusion criteria n=11
Exclusion criteria n=8
Refused to participate n=116
Other reason n=9
Randomised n=56
Allocated to ECT+ pharmacotherapy n=28
Received ECT+ pharmacotherapy n=26
Received pharmacotherapy alone n=2
Allocated to pharmacotherapy alone n=28
Received pharmacotherapy alone=28
Lost to follow-up n=0
Discontinued ECT n=7
Lost to follow-up n=0
Analysed n=28
Excluded = 0
Analysed n=28
Excluded=0

TABLE 2. Pharmacotherapy After Randomization Until Relapse

	ECT Plus Pharmacotherapy (%), n = 28	Pharmacotherapy Alone (%), n = 28	Statistical Significance
Serotonin selective reuptake inhibitor	36	21	$\chi^2 = 1.40$, $P = 0.24$
Serotonin norepinephrine reuptake inhibitor	39	50	$\chi^2 = 0.65$, $P = 0.42$
Mirtazapine	21	32	$\chi^2 = 0.82$, $P = 0.37$
Tricyclics	11	11	$\chi^2 = 0.00$, $P = 1.00$
Other antidepressant	11	7	$\chi^2 = 0.22$, $P = 0.64$
Lithium	54	57	$\chi^2 = 0.07$, $P = 0.79$
Antipsychotics; patients with psychotic symptoms (n = 21)	55	40	$\chi^2 = 0.44$, $P = 0.50$
Antipsychotics; patients without psychotic symptoms (n = 35)	18	22	$\chi^2 = 0.11$, $P = 0.74$

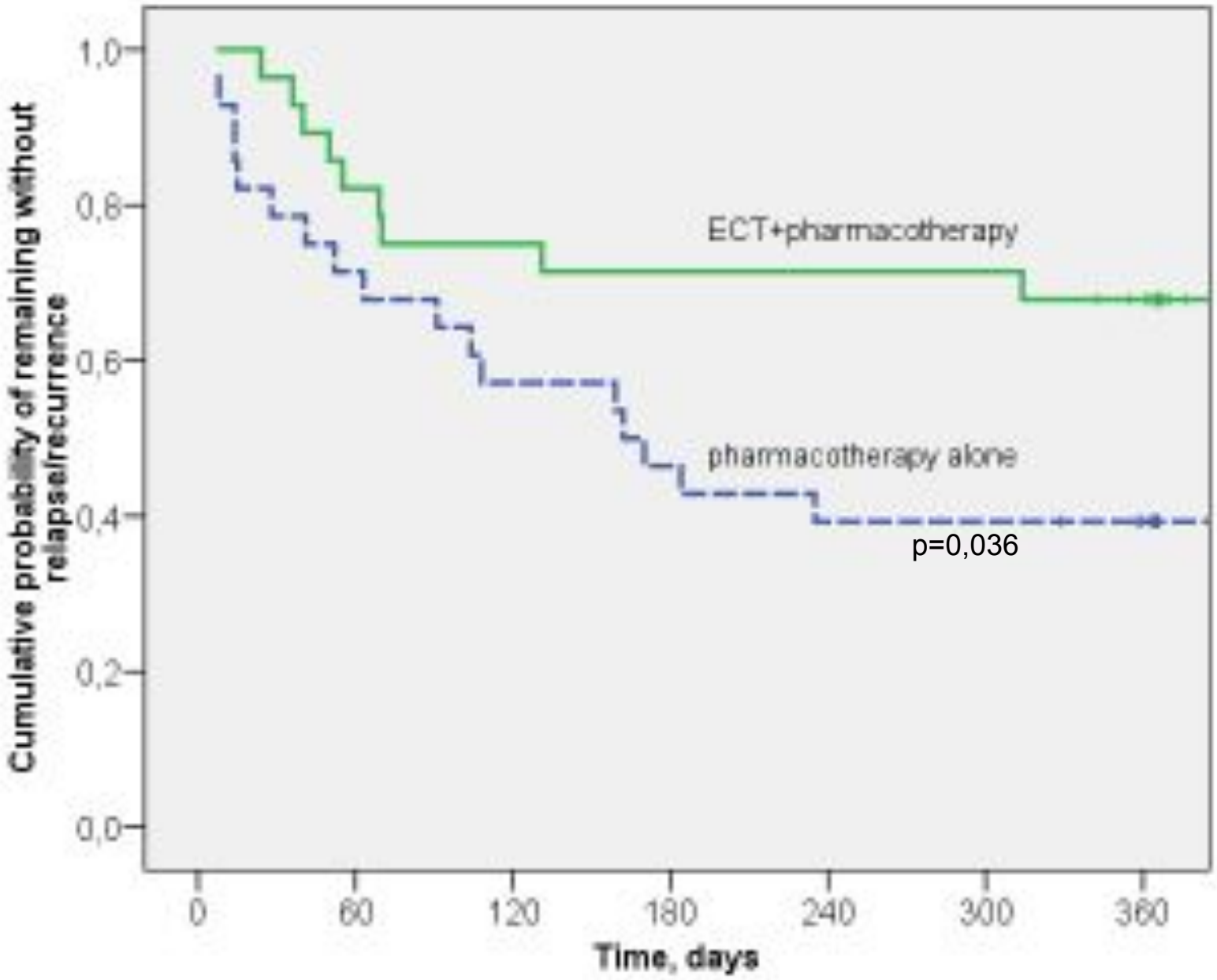

Cumulative probability of remaining without relapse/recurrence
1,0
0,8
0,6
0,4
0,2
0,0
ECT+pharmacotherapy
pharmacotherapy alone
p=0,036
0
60
120
180
240
300
360
Time, days

TABLE 3. Development of Measures of Cognitive Function Among Patients Without Relapse Randomized to ECT Plus Pharmacotherapy Versus Pharmacotherapy Alone

	ECT Plus Pharmacotherapy Without Relapse	Pharmacotherapy Alone Without Relapse	Significance of Time and Group Interaction
ADAS-cognitive at 2 months, mean (SD)	7.1 (3.4), n = 15	10.3 (5.6), n = 8	$P = 0.42$
ADAS-cognitive at 6 months, mean (SD)	5.7 (3.1), n = 15	8.6 (3.7), n = 8	
ADAS-cognitive at 12 months, mean (SD)	10.8 (5.6), n = 15	11.1 (5.0), n = 8	
MMSE at 2 months, mean (SD)	29.2 (0.9), n = 15	28.0 (1.4), n = 9	$P = 0.38$
MMSE at 6 months, mean (SD)	28.9 (1.5), n = 15	27.8 (2.0), n = 9	
MMSE at 12 months, mean (SD)	28.9 (1.3), n = 15	28.0 (1.9), n = 9	
UKU subjective memory at 2 months, mean (SD)	0.88 (0.50), n = 16	0.44 (0.73), n = 9	$P = 0.90$
UKU subjective memory at 6 months, mean (SD)	0.75 (0.58), n = 16	0.22 (0.44), n = 9	
UKU subjective memory at 12 months, mean (SD)	0.81 (0.75), n = 16	0.44 (0.53), n = 9	

Memory disturbances (item 1.4) in the Utvalg for Kliniske Undersogelser was used.
UKU indicates Utvalg for Kliniske Undersogelser.

Post hoc Lithium and an antidepressant

- 56% relapse rate for 16 patients on an antidepressant + lithium
- 13% relapse rate for 15 patients on cECT+ antidepressant+lithium

Post-hoc Resistant to two antidepressants

- 85% Relapse rate for 13 patients on pharmacotherapy
- 31% Relapse rate for 16 patients on cECT+pharmacotherapy

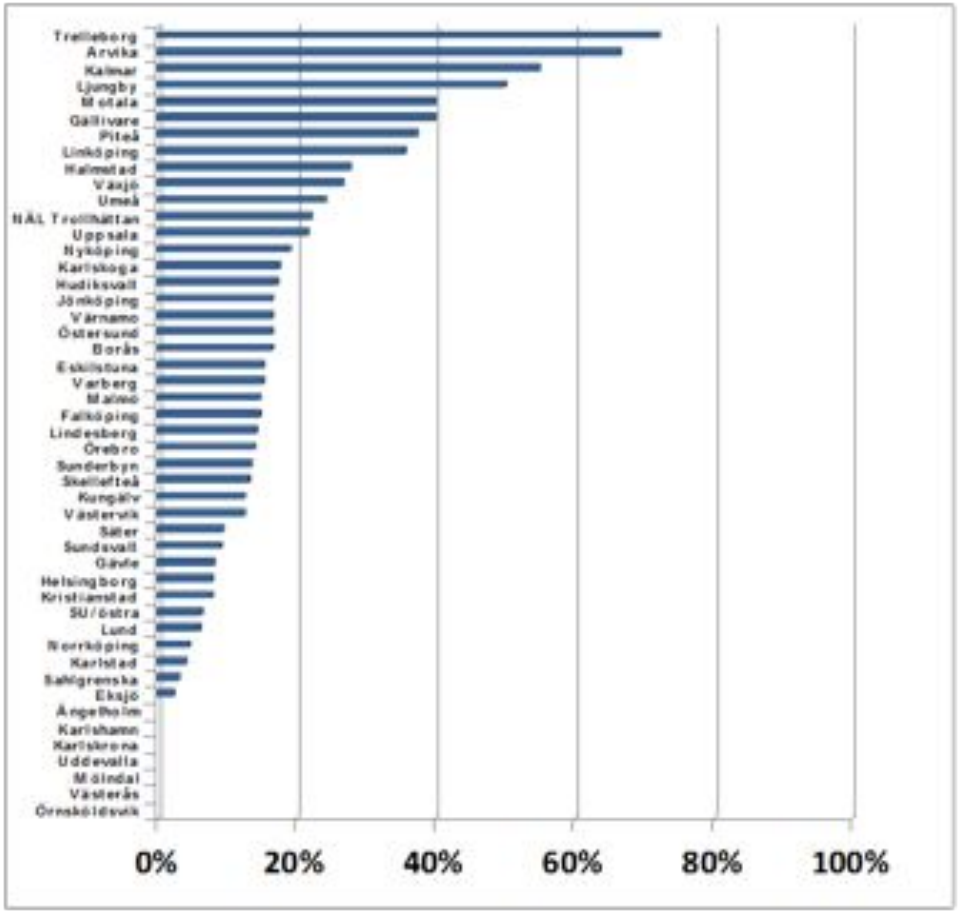
Suicidality

Pharmacotherapy	cECT+Pharmacotherapy
1 death by suspected suicide (intoxication)	No deaths
3 ICU lithium intoxications 1 Severe suicidal ideation (snare)	No suicide attempts No severe suicidial ideation

Continuation-ECT+ Pharmacotherapy. For whom?

- Pharmacotherapy resistant depression?
- Very severe episode?
- Older patients with psychotic depression?
- High suicide risk?

Proportion of ECT-patients receiving cECT in different hospitals in Sweden



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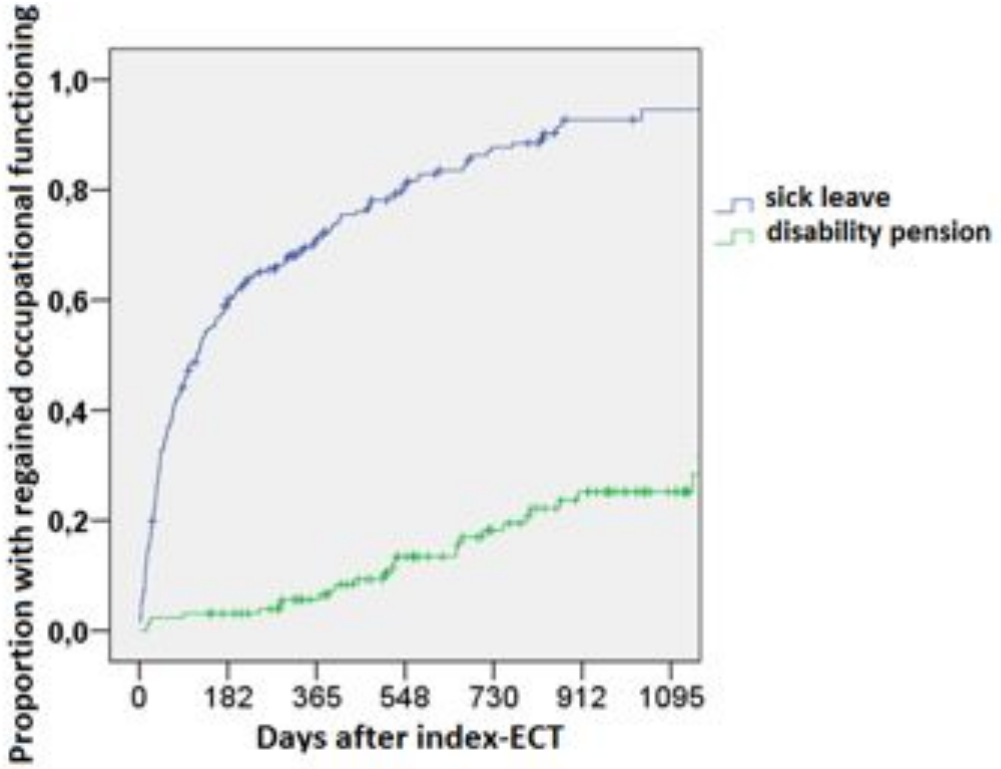
Swedish register study-Occupational functioning

- Register-study
- 394 patients with unipolar depression
- Sick-leave or disability pension during ECT


Proportion with regained occupational functioning
1,0
0,8
0,6
0,4
0,2
0,0
0
182
365
548
730
912
1095
Days after index-ECT
sick leave
disability pension

Regained occupational functioning -Conclusions

- Better outcome:
- ECT within 3 months
- severe symptoms (!)
- Symptomatic improvement
- Absence of Benzodiazepine treatment

Summary

- Remission rate in clinical trials 50-64 %
- Remission rate in clinical practice 45%
- Response rate in clinical practice 80%
- Relapse rate of 35-65% in clinical trials
- Rehospitalisation rate of 35% in clinical practice
- Regained occupational functioning rate of 59% within six months

Predictors of better outcomes include

- Psychotic symptoms and severe symptoms
- Higher ages
- Less co-morbid diagnoses
- Shorter duration of current episode
- Fewer antidepressant medication trials

- Antidepressants
- Lithium
- Continuation ECT
- Absence of benzodiazepine treatment

Thank you!