Elektrokonvulsiv behandling (ECT) og selvmord

Notat fra Kunnskapssenteret
Systematisk litteratursøk med sortering
Mai 2015

kunnskapssenteret

Nasjonalt kunnskapssenter for helsetjenesten
Postboks 7004, St. Olavs plass
N-0130 Oslo
(+47) 23 25 50 00
www.kunnskapssenteret.no
Notat: ISBN 978-82-8121-957-1

Mai 2015

kunnskapssenteret

Tittel	Elektrokonvulsiv behandling (ECT) og selvmord
English title	Electroconvulsive therapy (ECT) and suicide
Institusjon	Nasjonalt kunnskapssenter for helsetjenesten (Kunnskapssenteret)
Ansvarlig	Magne Nylenna, direktør
Forfattere	Leiknes, Kari Ann, seniorrådgiver, *Kunnskapssenteret* Dalsbø, Therese Kristine, seniorrådgiver, *Kunnskapssenteret*
ISBN	978-82-8121-957-1
Notat	Mai – 2015
Prosjektnummer	9927
Publikasjonstype	Systematisk litteratursøk med sortering
Antall sider	15 (48)
Oppdragsgiver	Helsedirektoratet
Emneord(MeSH)	Electroconvulsive Therapy; Electroshock; Electroconvulsant; suicide
Sitering	Leiknes KA, Dalsbø TK. Elektrokonvulsiv behandling og selvmord. Notat 2015. Oslo: Nasjonalt kunnskapssenter for helsetjenesten, 2015.

Nasjonalt kunnskapssenter for helsetjenesten fremskaffer og formidler kunnskap om effekt av metoder, virkemidler og tiltak og om kvalitet innen alle deler av helsetjenesten. Målet er å bidra til gode beslutninger slik at brukerne får best mulig helsetjenester. Kunnskapsenteret er formelt et forvaltningsorgan under Helsedirektoratet, men har ingen myndighetsfunksjoner og kan ikke instrueres i faglige spørsmål.

Nasjonalt kunnskapssenter for helsetjenesten
Oslo, mai 2015

Hovedfunn

Nasjonalt kunnskapssenter for helsetjenesten fikk i oppdrag fra Helsedirektoratet å gjennomføre et systematisk litteratursøk og finne mulige relevante systematiske oversikter og randomiserte kontrollerte studier om effekt av elektrokonvulsiv behandling (Electroconvulsive therapy, ECT) på selvmord og selvmordsforebygging. Våre funn er presentert i denne systematiske litteraturlisten.

Metode

Det systematisk litteratursøket ble utført av Helsedirektoratet ved bibliotekar Marita Heintz. Søket ble utført i relevante medisinsk og psykologiske databaser. Søkene ble avsluttet i januar 2015. To personer ved Kunnskapssenteret gikk uavhengig av hverandere gjennom søket og vurderte referanser som var relevant i forhold til inklusjonskriteriene.

Resultater

Søket identifiserte 711 referanser, 571 etter dublettsjekk. Disse ble gjennomgått og vi vurderte seks av disse til å være mulig relevante for vårt spørsmål:

- systematiske oversikter (4)
- randomiserte kontrollerte studier (2)

Tittel:

Elektrokonvulsiv behandling (ECT) og selvmord - systemtisk litteratursøk med tematisk sortert referanseliste

---

Publikasjonstype:

Systematisk litteratursøk med sortering

Systematisk litteratursøk med sortering er resultatet av å
- søke etter relevant litteratur ifølge en søkestrategi og
- eventuelt sortere denne litteraturen i grupper presentert med referanser og vanligvis sammendrag

---

Svarer ikke på alt:

- Ingen kritisk vurdering av studienes kvalitet
- Ingen analyse eller sammenfatning av studiene
- Ingen anbefalinger

Hvem står bak denne publikasjonen?

Kunnskapssenteret har gjennomført oppdraget etter forespørsel fra Helsedirektoratet

---

Når ble litteratursøket utført?

Det systematiske søket ble utført av bibliotekar Marita Heinz, Helsedirektoratet januar 2015.

Main findings

The Norwegian Knowledge Centre for the Health Services was commissioned by the Norwegian Directorate of Health to undertake a literature search and find potentially relevant systematic reviews and randomized controlled trials about the effect of electroconvulsive therapy (ECT) on suicide and suicide prevention. Our findings are presented in this systematic reference list.

Methods

A systematic literature search was undertaken by librarian Marita Heintz, Norwegian Directorate of Health and sent us for evaluation. The search was undertaken in relevant medical and psychological databases. The searches were completed in January 2015. Two researchers reviewed the identified references independently and evaluated relevance according to our pre-defined inclusion criteria.

Results

The search identified 711 referances, 571 after checking for duplications. The references were reviewed and 6 identified as potentially relevant for our research question:

- systematic reviews (4)
- randomized controlled trials (2)

Title:
Electroconvulsive therapy (ECT) and suicide – systematic litterature search with thematically organized reference list

---

Type of publication:

Systematic reference list

A systematic reference list is the result of a search for relevant literature according to a specific search strategy. The references resulting from the search are then grouped and presented with their abstracts.

Doesn't answer everything:

- No critical evaluation of study quality
- No analysis or synthesis of the studies
- No recommendations

Publisher:

Norwegian Knowledge Centre for the Health Services

Literature search:

The systematic literature search was undertaken by librarian Marita Heinz, Norwegian Directorate of Health, January 2015

Innhold

HOVEDFUNN **2**

MAIN FINDINGS **3**

INNHOLD **4**

FORORD **5**

INNLEDNING **6**
Bakgrunn 6
Problemstilling 6
Søkestrategien 6
Styrker og svakheter ved litteratursøk med sortering 7

METODE **8**
Litteratursøking 8
Inklusjonskriterier 8
Ekslusjonskriterier 9
Artikkelutvelging 9

RESULTAT **10**
Resultat av søk 10
Kommentarer til resultatene 14
Referanseliste 15

VEDLEGG **16**
Vedlegg 1: Søkestrategier 16
Vedlegg 2: Forskningsspørsmål og relevante referanser 24
Vedlegg 3: Tematisk relevante ekskluderte studier 30
Vedlegg 3: Tematisk relevante ekskluderte referanser 30
Kommentarer til ekskluderte 44
Referanseliste ekskluderte 45

Forord

Nasjonalt kunnskapssenter for helsetjenesten fikk i oppdrag fra Helsedirektoratet å utføre et systematisk litteratursøk med påfølgende sortering av mulig relevante systematiske oversikter og randomiserte kontrollerte studier. Oppdraget var å finne forskning om effekt av elektrokonvulsiv behandling (electroconvulsive therapy, ECT) på selvmord og selvmordsforebygging.

Litteraturen i vår referanseliste kan utgjøre et relevant dokumentasjonsgrunnlag for den nye nasjonale retningslinjen om elektrokonvulsiv behandling.

Prosjektgruppen har bestått av:

- Kari Ann Leiknes, seniorrådgiver, Kunnskapssenteret
- Therese Kristine Dalsbø, seniorrådgiver, Kunnskapssenteret
- Marita Heintz, spesialbibliotekar, Helsedirektoratet

Gro Jamtvedt	Marianne Klemp	Kari Ann Leiknes
Avdelingsdirektør	*Forskningsleder*	*Prosjektleder*

Innledning

Bakgrunn

Det er en sterk sammenhengen mellom å ha en psykisk lidelse og risikoen for selvmord og de med depressive lidelser er mest risikoutsatte. I Kunnskapssenterets tidligere rapport nr 24-2006 om Forebygging av selvmord ble det ikke funnet studier som kunne belyse mulige effekter av elektrokonvulsiv terapi brukt forebyggende mot selvmord (1). Rapporten hevder at «De sparsomme resultatene av våre litteratursøk gir ikke grunnlag for å hevde at ECT virker forebyggende på selvmordsatferd. Studier av tilstrekkelig god kvalitet mangler helt, ogvi kan derfor ikke vite om ECT har eller mangler forebyggende effekt på selvmordsadferd. Det er imidlertid god evidens for at ECT er en rask og effektiv behandling for alvorlige depressive tilstander hos utvalgte pasienter. Naturalistiske studier har også indikert at ECT kan gi en rask bedring i nivået av selvmordstanker, noe som må anses relevant for bruk av intervensjonen» (1).

Ettersom denne rapporten er av noe eldre dato (fra 2006) var det ønskelig med et oppdatert litteratursøk om elektrokonvulsiv behandling (ECT) og selvmord, i forbindelse med Helsedirektoratets pågående retningslinjearbeid om ECT. I tidligere utførte ECT systematisk litteratur søk og sorter etter nyere systematiske oversikter (SR) og internasjonale retningslinjer var den spesifikke dokumentasjon om selvmordsatferd og ECT meget sparsom (2).

Problemstilling

Vi har søkt etter litteratur som undersøker om elektrokonvulsiv behandling kan forebygge selvmordsatferd, for å belyse probemstillingen: virker ECT forebyggende på selvmordsadferd, dvs selvmord, selvmordsforsøk og selvmordstanker. For barn og undom er også selvskading tatt med.

Søkestrategien

Vi har søkt i elektroniske kilder, men ikke etter grå litteratur eller liknende. Litteratursøket er tidsavgrenset fra 2004 til 2015. I tillegg er det brukt et filter for å avgrense søkene til systematiske oversikter og randomisert kontrollert studie design.

Styrker og svakheter ved litteratursøk med sortering

Ved litteratursøk gjennomfører vi systematiske litteratursøk for en gitt problemstilling. Resultatene fra søket blir i sin helhet overlevert oppdragsgiver, eller vi kan gjennomgå søkeresultatet før overleveringen og sortere ut ikke-relevante artikler. Dette gjøres basert på tittel og eventuelt sammendrag. Artiklene innhentes ikke i fulltekst. Det gjør at vi kan ha inkludert titler som ville vist seg ikke å være relevante ved gjennomlesning av fulltekst. Vi benytter kun databaser for identifisering av litteratur og kan derfor ha gått glipp av potensielt relevante studier. Andre måter å identifisere studier på, som søk i referanselister, kontakt med eksperter på fagfeltet og upublisert litteratur, er ikke utført i dette oppdraget. Vi gjennomfører ingen kvalitetsvurdering av artiklene.

Ved en full forskningsoppsummering ville vi ha innhentet artiklene i fulltekst for endelig vurdering opp mot inklusjonskritene. Inkluderte studier ville så blitt kvalitetsvurdert i henhold til våre sjekklister og resultater sammenstilt og diskutert.

Metode

Litteratursøking

Vi har gjennomført et systematiske søk etter relevant forskning. Spesialbibliotekar Marita Heintz i Helsedirektoratet utførte søket. Søkestrategiene er tilgjengelig i vedlegg 1.

Vi søkte systematisk etter litteratur i følgende databaser:

- Ovid MEDLINE(R)
- Embase
- PsycINFO
- Cinahl
- Cochrane Library (herunder følgende databaser; Cochrane Database of Systematic Reviews (CDSR), Other Reviews (DARE), Trials (Central, Methods Studies, Technology Assessment, Economic Evaluations)
- Pubmed
- SveMed+

Inklusjonskriterier

Populasjon:	Pasienter (alle aldre) med selvmordsatferd og/eller selvmordstanker
Tiltak:	Behandling med ECT
Sammenlikning:	Farmakologiske og ikke- farmakologisk intervensjoner
Utfall:	Validerte psykometriske skalaer og mål på suicidalitet
Studiedesign:	1) Systematiske oversikter 2) Randomiserte kontrollerte studier
Språk:	Engelsk og skandinavisk
Publikasjonsår:	2004-2015

Referanser med tema vedrørende ECT behandling som primær eller sekundærforebygging av selvmord eller selvmordsadferd som utfallsmål ble inkludert.

Ekslusjonskriterier

Kasuistikkstudier, bøker og bokkapitler, doktorgrad og mastergradavhandlinger. Konferanseabstrakt, kommentarer, brev til redaktør, protokoll omtaler ble eksludert. Oversiktsliste over eksluderte studier som relevant for tematikken ECT og selvmordsforebygging, men eksludert på bakgrunn av studiedesign oppgis i vedlegg.

Artikkelutvelging

To forskere (KAL og TKD) gikk gjennom alle titler og sammendrag for å vurdere relevans i henhold til inklusjonskriteriene. Vurderingene gjorde de uavhengig av hverandre og sammenlignet i etterkant. Der det var uenighet om vurderingene, ble inklusjon eller eksklusjon avgjort ved konsensus. Rapporten er skrevet av KAL og kritisk gjennomgått av TKD og MK. Utvelging av litteratur ble kun gjort basert på tittel og sammendrag. Vi bestilte ikke fulltekst av artiklene.

Resultat

Resultat av søk

Litteratursøket resulterte i 711 treff. Etter dublettsjekk gjensto det 571 referanser. Vi gjennomgikk alle de 571 refereansene. Vi vurderte seks til å være mulig relevante for vårt forskningsspørsmål.

De mulige relevante referansene, ECT behandling gitt for å behandle og/eller forebygge selvmordsatferd og/eller selvmordstanker ble sortert som følger:

1) Systematiske oversikter (4)
2) Randomiserte kontrollerte studier (2)

Systematiske oversikter (4)

Vi fant fire mulige relevante systematiske oversikter med suicidalitet som utfallsmål.

Førsteforfatter og årstall	Tittel og sammendrag
Fond 2014 (3)	Ketamine administration in depressive disorders: a systematic review and meta-analysis Abstract: INTRODUCTION: Ketamine's efficacy in depressive disorders has been established in several controlled trials. The aim of the present study was to determine whether or not ketamine administration significantly improves depressive symptomatology in depression and more specifically in major depressive disorder (MDD), bipolar depression, resistant depression (non-ECT studies), and as an anesthetic agent in electroconvulsive therapy (ECT) for resistant depression (ECT studies). Secondary outcomes were the duration of ketamine's effect, the efficacy on suicidal ideations, the existence of a dose effect, and the safety/tolerance of the treatment. METHODS: Studies were included if they met the following criteria (without any language or date restriction): design: randomized controlled trials, intervention: ketamine administration, participants: diagnosis of depression, and evaluation of severity based on a validated scale. We calculated standardized mean differences (SMDs) with 95 % confidence intervals (CIs) for each study. We used fixed and random effects models. Heterogeneity was assessed using the I2 statistic. RESULTS: We included nine non-ECT studies in our quantitative analysis (192 patients with major depressive disorder and 34 patients with bipolar depression). Overall, depression scores were significantly decreased in the ketamine groups compared to those in the control groups (SMD=-0.99; 95 % CI -1.23, -0.75; p<0.01). Ketamine's efficacy was confirmed in MDD (resistant to previous pharmacological treatments or not) (SMD=-0.91; 95 % CI -1.19,-0.64; p<0.01), in bipolar depression (SMD=-1.34; 95 % CI -1.94, -0.75), and in drug-free patients as well as

	patients under medication. Four ECT trials (118 patients) were included in our quantitative analysis. One hundred and three patients were diagnosed with major depressive disorder and 15 with bipolar depression. Overall, depression scores were significantly improved in the 58 patients *receiving ketamine in ECT anesthesia* induction compared to the 60 patients (SMD=-0.56; 95 % CI -1.10, -0.02; p=0.04; I2=52.4 %). The duration of ketamine's effects was assessed in only two non-ECT studies and seemed to persist for 2-3 days; this result needs to be confirmed. Three of four studies found significant decrease of suicidal thoughts and one found no difference between groups, but suicidal ideations were only studied by the suicide item of the depressive scales. It was not possible to determine a dose effect; 0.5 mg/kg was used in the majority of the studies. Some cardiovascular events were described (mostly transient blood pressure elevation that may require treatment), and ketamine's use should remain cautious in patients with a cardiovascular history. CONCLUSION: The present meta-analysis confirms ketamine's efficacy in depressive disorders *in non-ECT studies, as well as in ECT studies*. The results of this first meta-analysis are encouraging, and further studies are warranted to detail efficacy in bipolar disorders and other specific depressed populations. Middle- and long-term efficacy and safety have yet to be explored. Extrapolation should be cautious: Patients included had no history of psychotic episodes and no history of alcohol or substance use disorders, which is not representative of all the depressed patients that may benefit from this therapy.
Hazell 2011 (4)	Depression in children and adolescents Abstract: INTRODUCTION: Depression may affect 2% to 8% of children and adolescents, with a peak incidence around puberty. It may be self-limiting, but about 40% of affected children experience a recurrent attack, one third of affected children will make a suicide attempt, and 3% to 4% will die from suicide. METHODS AND OUTCOMES: We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of pharmacological, psychological, combination, and complementary treatments for depression in children and adolescents? What are the effects of treatments for refractory depression in children and adolescents? We searched: Medline, Embase, The Cochrane Library, and other important databases up to July 2011 (Clinical Evidence reviews are updated periodically; please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA). RESULTS: We found *21 systematic reviews*, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions. CONCLUSIONS: In this systematic review we present information relating to the effectiveness and safety of the following interventions: citalopram, cognitive behavioural therapy (CBT) (individual or group, to prevent relapse), electroconvulsive therapy, escitalopram, family therapy, fluoxetine (alone or with cognitive therapy or CBT), fluvoxamine, group therapeutic support (other than CBT), guided self-help, individual psychodynamic psychotherapy, interpersonal therapy, lithium, mirtazapine, monoamine oxidase inhibitors (MAOIs), omega-3 polyunsaturated fatty acids, paroxetine, sertraline (alone or with CBT), St John's Wort (Hypericum perforatum), tricyclic antidepressants, and venlafaxine.
Read 2010 (5)	The effectiveness of electroconvulsive therapy: a literature review Abstract: AIM: To review the literature on the efficacy of electroconvulsive therapy [ECT], with a particular focus on depression, its primary target group. METHODS: PsycINFO, Medline, previous reviews and meta-analyses were searched in an attempt to identify all studies comparing ECT with simulated-ECT [SECT]. RESULTS: These placebo controlled studies show minimal support for effectiveness with either depression or 'schizophrenia' during the course of treatment (i.e., only for some patients, on some measures, sometimes perceived only by psychiatrists but not

	by other raters), and no evidence, for either diagnostic group, of any benefits beyond the treatment period. There are no placebo-controlled studies evaluating the hypothesis that ECT prevents suicide, and no robust evidence from other kinds of studies to support the hypothesis. CONCLUSIONS: Given the strong evidence (summarised here) of persistent and, for some, permanent brain dysfunction, primarily evidenced in the form of retrograde and anterograde amnesia, and the evidence of a slight but significant increased risk of death, the cost-benefit analysis for ECT is so poor that its use cannot be scientifically justified.
Greenhalgh 2005 (6)	Clinical and cost-effectiveness of electroconvulsive therapy for depressive illness, schizophrenia, catatonia and mania: systematic reviews and economic modelling studies Abstract: OBJECTIVES: To establish the clinical effectiveness and cost-effectiveness of electroconvulsive therapy (ECT) for depressive illness, schizophrenia, catatonia and mania. DATA SOURCES: Electronic bibliographic databases. The reference lists of relevant articles and health services research-related resources were consulted via the Internet. REVIEW METHODS: Identified studies were examined to ascertain whether they met the inclusion criteria for the review. The study quality of relevant articles was assessed using standard checklists and data were abstracted using standardised forms into a database. Where relevant, results from studies were pooled for meta-analysis. Two economic models were developed primarily based on evidence from the clinical effectiveness analysis and limited quality of life studies. RESULTS: Two good-quality *systematic reviews of randomised evidence* of the efficacy and safety of ECT in people with depression, schizophrenia, catatonia and mania were identified. Four systematic reviews on non-randomised evidence were also identified, although only one of these could be described as good quality. *There was no randomised evidence of the effectiveness of ECT in specific subgroups including older people, children and adolescents, people with catatonia and women with postpartum exacerbations of depression or schizophrenia.* The economic modelling results for depression did not demonstrate that any of the scenarios had a clear economic benefit over the others, mainly because of the uncertainty surrounding the clinical effectiveness of the different treatments and the quality of life utility gains. Sensitivity analysis surrounding the cost of ECT and the quality of life utility values had little effect on the overall results. The results of the model for schizophrenia adapted to include ECT suggest that clozapine is a cost-effective treatment compared with ECT. For patients who fail to respond to clozapine, ECT treatment may be preferred to the comparative treatment of haloperidol/chlorpromazine. CONCLUSIONS: Real ECT is probably more effective than sham ECT, but as stimulus parameters have an important influence on efficacy, low-dose unilateral ECT is no more effective than sham ECT. ECT is probably more effective than pharmacotherapy in the short term and limited evidence suggests that ECT is more effective than repetitive transcranial magnetic stimulation. Tricyclic antidepressants (TCAs) may improve the antidepressant effect of ECT during the course of treatment. Continuation pharmacotherapy with TCAs combined with lithium in people who have responded to ECT reduces the rate of relapses. Overall, gains in the efficacy of the intervention depending on the stimulus parameters of ECT are achieved only at the expense of an increased risk of cognitive side-effects. Limited evidence suggests these effects do not last beyond 6 months, but there is no evidence examining the longer term cognitive effects of ECT. There is little evidence of the long-term efficacy of ECT. ECT either combined with antipsychotic medication or as a monotherapy is not more effective than antipsychotic medication in people with schizophrenia. More research is needed to examine the long-term efficacy of ECT and the effectiveness of post-ECT pharmacotherapy, the short-term and longer term cognitive side-effects of ECT, and the impact of ECT on suicide and all-cause mortality. Further work is needed to examine the information needs of people deciding whether to accept ECT

	and how their decision-making can be facilitated. More research is also needed on the mechanism of action of ECT. Finally, the quality of reporting of trials in this area would be vastly improved by strict adherence to the Consolidated Standards of Reporting Trials recommendations. Economic analysis may identify areas in which research would be best targeted by identifying parameters where reducing the level of uncertainty would have the most effect in helping to make the decision on whether ECT is a cost-effective treatment.

Resultatene for de systematiske oversikter er og sortert ut fra forskningsspørsmålene de besvarer etter PICO (population, intervention, comparison, outcome) beskrivelse, se vedlegg 2, tabell 1.

Randomiserte kontrollerte studier (2)

Vi fant totalt fire mulige relevante randomisert kontrollerte studier (RCT) med suicidalitet som utfallsmål.

RCT studier med suicalitet som utfallsmål	
Førsteforfatter og årstall	Tittel og sammendrag
Keshtkar (7) 2011	Repetitive transcranial magnetic stimulation versus electroconvulsive therapy for the treatment of major depressive disorder, a randomized controlled clinical trial Abstract: INTRODUCTION: Studies comparing the antidepressant effects of electroconvulsive therapy (ECT) and repetitive transcranial magnetic stimulation (rTMS) have reported mixed results. This study compared the efficacy of rTMS and ECT in adult patients with refractory major depressive disorder (MDD). METHODS: This randomized, ECT-controlled, parallel-group clinical trial analyzed the antidepressant effects of ECT and rTMS in 73 patients with MDD diagnosed according to Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria. The Beck Depression Inventory and Hamilton Depression Rating Scale were used to measure depression. RESULTS: Both ECT and rTMS significantly improved depression and suicidal behavior scores. However, ECT reduced depression and suicidal behavior scores more than rTMS. There were no significant adverse effects in the rTMS group. DISCUSSION: Both ECT and rTMS improved MDD in the short term, but the antidepressant efficacy of ECT was greater than rTMS. Moreover, ECT led to greater reductions in suicidal behavior than rTMS. Until strong evidence for the safety and efficacy of rTMS is available, further studies are needed to compare ECT and rTMS in terms of the long-term relapse rate and quality of life.
Nordenskjold (8) 2013	Continuation electroconvulsive therapy with pharmacotherapy versus pharmacotherapy alone for prevention of relapse of depression: a randomized controlled trial Abstract: 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. METHODS: A multicenter, nonblinded, randomized controlled trial with 2 parallel groups was performed from 2008 to 2012 in 4 hospitals in Sweden. Patients eligible had unipolar or bipolar depression and had responded to a course of ECT. The patients (n = 56) were randomly assigned (1:1) to receiving either 29 treatments of continuation ECT with pharmacotherapy or pharmacotherapy alone for 1 year. The pharmacotherapy consisted of antidepressants (98%), lithium (56%), and antipsychotics

	(30%). The main outcome was relapse of depression within 1 year. Relapse was defined as 20 or more points on the Montgomery Asberg Depression Rating Scale or inpatient psychiatric care or suicide or suspected suicide. All 56 patients randomized were analyzed according to an intention to treat analysis. RESULTS: Sixty-one percent of the patients treated with pharmacotherapy versus 32% of the patients treated with ECT plus pharmacotherapy relapsed within 1 year (P = 0.036). The Cox proportional hazard ratio was 2.32 (1.03-5.22).Cognitive function and memory measures were stable for patients without relapse in both groups.One suspected suicide and 3 suicide attempts by intoxication occurred, all in the pharmacotherapy-alone group. CONCLUSIONS: The post-ECT relapse rates were substantial in both treatment groups with a statistically significant advantage for combined treatment with pharmacotherapy and continuation ECT. Further studies are needed to define indications for continuation ECT, pharmacotherapy, and their combination.

Resultatene for RCT studiene er også gjennomgått ut fra PICO (population, intervention, comparison, outcome) spørsmål, se vedlegg 2, tabell 2.

Kommentarer til resultatene

Søkestrategien (vedlegg 1) anvendt filter for RCT og systematiske oversikter. Oversikten av referanser gitt i vedlegget over andre relevante studier som er funnet ansees derfor som ufullstendig. Vi vurderte det likevel viktig ut fra hensyn til ECT retningslinjegruppens videre arbeid og ut fra et et klinisk perspektiv å gjøre rede for disse i vedlegget (se vedlegg 3). Relevante bøker og bok kapitler, samt nyere norske mastergrads- og doktorgradsavhandlinger er inkludert av samme grunn.

I alt ble det funnet fire relevante mulige systematiske oversikter hvorav en av Hazell for barn og ungdom Hazell 2011 (4). Bedømmelse av kvaliteten er ikke utført og ikke en metodisk del av dette notatet.

Omfanget av mulig relevante RCT var to. Kunnsakpssenterets rapport fra 2006 inkluderte bare en RCT (2). Tilfanget av RCT studier i løpet av disse årene er meget sparsom. For å vurdere hvorvidt om det er mulig å utføre metaanlyse nå med disse tre RCT studiene, må fulltekst innhentes og kvaliteten bedømmes. De systematiske oversiktene identifisert i denne rapporten bør også sjekkes før vi vurderer å oppdatere. Innhenting av fulltkest og evaluering av de systematiske oversiktene er ikke en del av metoden i dette notatet og ikke uført her.

Bedømt utfra litteraturomfanget beskrevet her, er evidens om effekten av ECT som behandlingstiltak og forebygging av selvmord fortsatt sparsom. Forskningen virker også sprikende. Hos barn og ungdom virker evidensgrunnlaget enda mer beskjeden.

Referanseliste

1. Mehlum L, Dieserud G, Grøholt B, Mellesdal L, Walby F, Myhre KI. Forebygging av selvmord, del 1: Psykoterapi, medikamentelle intervensjoner og elektrokonvulsiv terapi. Oslo: Nasjonalt kunnskapssenter for helsetjenesten; 2006.

2. Leiknes KA, Dalsbø TK. Elektrokonvulsiv behandling (ECT)- systematisk litteratursøk med tematisk sortert referanseliste. Nasjonalt kunnskapssenter for helsetjenesten; 2014

3. Fond G, Loundou A, Rabu C, Macgregor A, Lancon C, Brittner M, et al. Ketamine administration in depressive disorders: a systematic review and meta-analysis. Psychopharmacology 2014;231(18):3663-3676.

4. Hazell P. Depression in children and adolescents. Clinical Evidence 2011.

5. Read J, Bentall R. The effectiveness of electroconvulsive therapy: a literature review. Epidemiologia e Psichiatria Sociale 2010;19(4):333-347.

6. Greenhalgh J, Knight C, Hind D, Beverley C, Walters S. Clinical and cost-effectiveness of electroconvulsive therapy for depressive illness, schizophrenia, catatonia and mania: systematic reviews and economic modelling studies. Health Technology Assessment (Winchester, England) 2005;9(9):1-156, iii-iv.

7. Keshtkar M, Ghanizadeh A, Firoozabadi A. Repetitive transcranial magnetic stimulation versus electroconvulsive therapy for the treatment of major depressive disorder, a randomized controlled clinical trial. Journal of ECT 2011;27(4):310-314.

8. Nordenskjold A, von Knorring L, Ljung T, Carlborg A, Brus O, Engstrom I. Continuation electroconvulsive therapy with pharmacotherapy versus pharmacotherapy alone for prevention of relapse of depression: a randomized controlled trial. Journal of ECT 2013;29(2):86-92.

Vedlegg

Vedlegg 1: Søkestrategier

ECT og selvmord

Kontaktperson: Jin Marte Øvreeide, Helsedirektoratet

Søk: Marita Heintz, Helsedirektoratet

Antall treff før dublettsjekk: 711

Antall treff etter dublettsjekk: 571

Kommentar: avgrenset til RCTer og systematiske oversikter. Tidsavgrensing 2004 - 2015

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

Dato: 13.01.2015

Antall treff: 118

#	Searches	Results
1	exp Electroconvulsive Therapy/	9624
2	electroshock/	11390
3	((electroconvulsive or electroconvulsant or ect or ecs) adj2 (therapy or therapies or treatment)).tw.	6123
4	((electric* or electro*) adj3 (shock* or convulsive)).tw.	6684
5	electroshock*.tw.	3363
6	or/1-5	27862
7	exp self-injurious behavior/	54461
8	(Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*").tw.	53699
9	((self or selfinflicted) adj (injur* or wounding* or poisoning* or killing* or harm* or mutilation*)).tw.	7840
10	(self adj ("inflicted injur*" or "inflicted wound*" or "destructive behavio?r*")).tw.	913
11	or/7-10	76548
12	6 and 11	587
13	randomized controlled trial.pt.	381731
14	controlled clinical trial.pt.	88452
15	(randomized or randomised).ab.	365361
16	placebo.ab.	156950
17	drug therapy.fs.	1725800
18	randomly.ab.	221939
19	trial.ab.	315466

20	groups.ab.	1403332
21	13 or 14 or 15 or 16 or 17 or 18 or 19 or 20	3432719
22	(animals not (humans and animals)).sh.	3877483
23	21 not 22	2947768
24	12 and 23	199
25	limit 12 to "reviews (best balance of sensitivity and specificity)"	162
26	24 or 25	288
27	limit 26 to yr="2004 -Current"	118

Database: Embase 1974 to 2015 January 12

Dato: 13.01.2015

Antall treff: 411

1	exp electroconvulsive therapy/	16010
2	electric shock/	10730
3	((electroconvulsive or electroconvulsant or ect or ecs) adj2 (therapy or therapies or treatment)).tw.	7798
4	((electric* or electro*) adj3 (shock* or convulsive)).tw.	7803
5	electroshock*.tw.	4050
6	or/1-5	32611
7	exp suicidal behavior/	71937
8	Automutilation/	11148
9	(Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*").tw.	67293
10	(self adj ("inflicted injur*" or "inflicted wound*" or "destructive behavio?r*")).tw.	1176
11	((self or selfinflicted) adj (injur* or wounding* or poisoning* or killing* or harm* or mutilation*)).tw.	9812
12	or/7-11	99837
13	6 and 12	1531
14	Clinical Trial/	841605
15	Randomized Controlled Trial/	358258
16	Randomization/	64182
17	Double Blind Procedure/	119321
18	Single Blind Procedure/	19235
19	Crossover Procedure/	41003
20	PLACEBO/	262626
21	placebo$.tw.	211476
22	randomi?ed controlled trial$.tw.	107138
23	rct.tw.	15525
24	random allocation.tw.	1397
25	randomly allocated.tw.	21512
26	allocated randomly.tw.	1993
27	(allocated adj2 random).tw.	801
28	single blind$.tw.	15290
29	double blind$.tw.	152347

30	((treble or triple) adj blind$).tw.	435
31	Prospective study/	270261
32	or/14-31	1427108
33	Case study/	29563
34	case report.tw.	280219
35	Abstract report/	89638
36	Letter/	839425
37	Human/	15221485
38	Nonhuman/	4426163
39	ANIMAL/	1588417
40	Animal Experiment/	1819566
41	38 or 39 or 40	6338558
42	41 not (37 and 41)	5027961
43	or/33-36,42	6177754
44	32 not 43	1337088
45	13 and 44	284
46	limit 13 to "reviews (best balance of sensitivity and specificity)"	484
47	45 or 46	582
48	limit 47 to yr="2004 -Current"	411

Database: PsycINFO 1806 to January Week 1 2015

Dato: 13.01.2015

Antall treff: 123

#	Searches	Results
1	electroconvulsive shock/	1235
2	exp electroconvulsive shock therapy/	5318
3	((electroconvulsive or electroconvulsant or ect or ecs) adj2 (therapy or therapies or treatment)).tw.	6017
4	((electric* or electro*) adj3 (shock* or convulsive)).tw.	6714
5	electroshock*.tw.	1315
6	or/1-5	13078
7	Suicide/	20606
8	Attempted Suicide/	8075
9	Suicidal Ideation/	5583
10	Suicide Prevention/	3318
11	Suicidology/	151
12	Suicide Prevention Centers/	125
13	self destructive behavior/	3180
14	self inflicted wounds/	760
15	self mutilation/	1088
16	(Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*").tw.	47604
17	(self adj ("inflicted injur*" or "inflicted wound*" or "destructive behavio?r*")).tw.	1216
18	((self or selfinflicted) adj (injur* or wounding* or poisoning* or killing* or harm* or mutilation*)).tw.	8731

19	or/7-18	54571
20	6 and 19	501
21	empirical methods/	2983
22	Experimental methods/	8929
23	Quasi experimental methods/	124
24	experimental design/	9437
25	between groups design/	105
26	followup studies/	12317
27	repeated measures/	590
28	experiment controls/	776
29	experimental replication/	3847
30	exp "sampling (experimental)"/	2572
31	placebo/	3957
32	clinical trials/	8251
33	treatment effectiveness evaluation/	17749
34	experimental replication.md.	9892
35	followup study.md.	51439
36	prospective study.md.	27348
37	treatment outcome clinical trial.md.	28652
38	placebo$.tw.	32099
39	randomi?ed controlled trial$.tw.	16422
40	rct.tw.	2151
41	random allocation.tw.	170
42	(randomly adj1 allocated).tw.	2139
43	(allocated adj2 random).tw.	51
44	((singl$ or doubl$ or treb$ or tripl$) adj (blind$3 or mask$3)).tw.	20348
45	(clinic$ adj (trial? or stud$3)).tw.	30837
46	or/21-45	197985
47	comment reply.dt.	103404
48	editorial.dt.	31723
49	letter.dt.	15279
50	clinical case study.md.	65514
51	nonclinical case study.md.	22706
52	animal.po.	319626
53	human.po.	3152778
54	52 not (52 and 53)	289180
55	or/47-51,54	517021
56	46 not 55	181917
57	20 and 56	37
58	limit 20 to "reviews (best balance of sensitivity and specificity)"	224
59	57 or 58	233
60	limit 59 to yr="2004 -Current"	123

Database: Cinahl

Dato: 13.01.2015

Antall treff: 30

S31	S30 Limiters - Published Date: 20040101-20151231	30
S30	S28 OR S29	53
S29	S15 Limiters - Clinical Queries: Review - Best Balance	45
S28	S15 AND S27	21
S27	S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26	749,756
S26	TX allocat* random*	132
S25	(MH "Quantitative Studies")	10,347
S24	(MH "Placebos")	7,121
S23	TX placebo*	26,328
S22	TX random* allocat*	2,657
S21	(MH "Random Assignment")	31,484
S20	TX randomi* control* trial*	48,573
S19	TX ((singl* n1 blind*) or (singl* n1 mask*)) or TX ((doubl* n1 blind*) or (doubl* n1 mask*)) or TX ((tripl* n1 blind*) or (tripl* n1 mask*)) or TX ((trebl* n1 blind*) or (trebl* n1 mask*))	622,666
S18	TX clinic* n1 trial*	119,563
S17	PT Clinical trial	51,624
S16	(MH "Clinical Trials+")	124,536
S15	S5 AND S14	93
S14	S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13	17,046
S13	TI (((self or selfinflicted) W0 (injur* or wounding* or poisoning* or killing* or harm* or mutilation*))) OR AB (((self or selfinflicted) W0 (injur* or wounding* or poisoning* or killing* or harm* or mutilation*)))	2,079
S12	TI ((self W0 ("inflicted injur*" or "inflicted wound*" or "destructive behavior*" or "destructive behaviour*"))) OR AB ((self W0 ("inflicted injur*" or "inflicted wound*" or "destructive behavior*" or "destructive behaviour*")))	180
S11	TI ((Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*")) OR AB ((Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*"))	11,010
S10	MH "Injuries, Self-Inflicted"	1,240
S9	MH "Self-Injurious Behavior"	1,423
S8	MH "Suicide, Attempted"	2,400
S7	MH "Suicidal Ideation"	1,959

S6	MH "suicide"	8,006
S5	S1 OR S2 OR S3 OR S4	1,378
S4	TI ((electroshock*)) OR AB ((electroshock*))	26
S3	TI (((electric* or electro*) N2 (shock* or convulsive))) OR AB (((electric* or electro*) N2 (shock* or convulsive)))	315
S2	TI (((electroconvulsive or electroconvulsant or ect or ecs) N1 (therapy or therapies or treatment))) OR AB (((electroconvulsive or electroconvulsant or ect or ecs) N1 (therapy or therapies or treatment)))	484
S1	MH "Electroconvulsive Therapy"	989

Database: Cochrane Database of Systematic Reviews (CDSR) Issue 1 of 12, January 2015, Other Reviews (DARE) Issue 4 of 4, October 2014, Trials (Central) Issue 12 of 12, Desember 2014, Methods Studies Issue 3 of 4, July 2012, Technology Assessments Issue 4 of 4, October 2014, Economic Evaluations Issue 4 of 4, October 2014.

Dato: 13.01.2015

Antall treff: 20 (fra Trials)

#1	MeSH descriptor: [Electroconvulsive Therapy] explode all trees	507
#2	MeSH descriptor: [Electroshock] this term only	136
#3	((electroconvulsive or electroconvulsant or ect or ecs) near/2 (therapy or therapies or treatment)):ti,ab,kw	875
#4	((electric* or electro*) near/3 (shock* or convulsive)):ti,ab,kw	273
#5	(electroshock*):ti,ab,kw	154
#6	#1 or #2 or #3 or #4 or #5	1214
#7	MeSH descriptor: [Self-Injurious Behavior] explode all trees	748
#8	(Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*"):ti,ab,kw	1906
#9	(self next ("inflicted injur*" or "inflicted wound*" or "destructive behavior*" or "destructive behaviour*")):ti,ab,kw	17
#10	((self or selfinflicted) next (injur* or wounding* or poisoning* or killing* or harm* or mutilation*)):ti,ab,kw	474
#11	#7 or #8 or #9 or #10	2163
#12	#6 and #11	29
#13	#6 and #11 Publication year from 2004-2015	20

Database: CRD

Dato: 15.01.2015

Antall treff: 2

Search	Hits	
1	MeSH DESCRIPTOR Electroconvulsive Therapy EXPLODE ALL TREES	46
2	MeSH DESCRIPTOR Electroshock	1

3	((electroconvulsive or electroconvulsant or ect or ecs) NEAR2 (therapy or therapies or treatment))	90
4	((electric* or electro*) NEAR3 (shock* or convulsive))	11
5	electroshock*	3
6	#1 OR #2 OR #3 OR #4 OR #5	98
7	MeSH DESCRIPTOR self-injurious behavior EXPLODE ALL TREES	130
8	(Suicid* or Parasuicid* or automutilation* or "auto mutilation*" or "artificial skin lesion*")	310
9	(self NEAR0 ("inflicted injur*" or "inflicted wound*" or "destructive behavior*" or "destructive behaviour*"))	0
10	((self or selfinflicted) NEAR0 (injur* or wounding* or poisoning* or killing* or harm* or mutilation*))	97
11	#7 or #8 or #9 or #10	366
12	#6 AND #11	5
13	(#12) FROM 2004 TO 2015	2

Database: Pubmed

Dato: 13.01.2015

Antall treff: 4

Kommentar: Avgrenset til artikler som er publisert "epub ahead of print". Ikke avgrenset på studiedesign pga antall treff.

#9	Search (Pubstatusaheadofprint AND #8)	4
#8	Search (#6 AND #7)	579
#7	Search ("self-injurious behavior"[Mesh] OR Suicid*[Title/Abstract] or Parasuicid*[Title/Abstract] or automutilation*[Title/Abstract] or auto mutilation*[Title/Abstract] or artificial skin lesion*[Title/Abstract] or self inflicted injur*[Title/Abstract] or self inflicted wound*[Title/Abstract] or self destructive behavior*[Title/Abstract] or self destructive behaviour*[Title/Abstract] or self injur*[Title/Abstract] or self wounding*[Title/Abstract] or self poisoning*[Title/Abstract] or self killing*[Title/Abstract] or self harm*[Title/Abstract] or self mutilation*[Title/Abstract] or selfinflicted injur*[Title/Abstract] or selfinflicted wounding*[Title/Abstract] or selfinflicted poisoning*[Title/Abstract] or selfinflicted killing*[Title/Abstract] or selfinflicted harm*[Title/Abstract] or selfinflicted mutilation*[Title/Abstract])	77866
#6	Search (#1 OR #2 OR #3 OR #4 OR #5)	25240
#5	Search electroshock*[Title/Abstract]	3640
#4	Search electric* shock*[Title/Abstract] OR electric* convulsive[Title/Abstract] OR electro shock*[Title/Abstract] OR electro convulsive[Title/Abstract]	1021
#3	Search electroconvulsive[Title/Abstract] OR electroconvulsant[Title/Abstract] OR "ect therapy"[Title/Abstract] OR "ect therapies"[Title/Abstract] OR "ect treatment"[Title/Abstract] OR "ecs therapy"[Title/Abstract] OR "ecs therapies"[Title/Abstract] OR "ecs treatment"[Title/Abstract]	7563

#2	Search "Electroshock"[Mesh:NoExp]	11392
#1	Search "Electroconvulsive Therapy"[Mesh]	9730

Database: SveMed+

Dato: 13.01.2015

Antall treff: 3

Kommentar: Ikke avgrenset på studiedesign pga antall treff.

1	exp:"Electroconvulsive Therapy"	76
2	noexp:"Electroshock"	1
3	electric* shock*	7
4	electric* convulsive	1
5	electro shock*	0
6	electroconvulsiv* OR electroconvulsant OR ect OR "ecs therapy" OR "ecs therapies" OR "ecs treatment" OR "electro convulsive" OR elektosjokk OR elektrokonvulsiv OR elektrochok OR elchock	82
7	#1 OR #2 OR #3 OR #4 OR #5 OR #6	88
8	exp:"Self-Injurious Behavior"	1098
9	Suicid* OR Parasuicid* OR automutilation*	1044
10	auto mutilation*	1
11	artificial skin lesion*	0
12	self inflicted injur*	3
13	self inflicted wound*	0
14	self destructive behavior*	3
15	self destructive behaviour*	0
16	self injur*	208
17	self wounding*	2
18	self poisoning*	22
19	self killing*	0
20	self harm*	34
21	self mutilation*	27
22	selfinflicted injur*	3
23	selfinflicted wounding*	0
24	selfinflicted poisoning*	1
25	selfinflicted killing*	0
26	selfinflicted harm*	0
27	selfinflicted mutilation*	1
28	#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27	1217
29	#7 AND #28	3

Vedlegg 2: Forskningsspørsmål og relevante referanser

PICO: population, intervention, comparison, outcome

Tabell 1: Forskningsspørsmål og spørsmålet i PICO format for de inkluderte oversiktene (N=4)

Vi innhentet informasjon fra sammendraget og satte den inn i tabellen nedenfor. Vi har ikke innhentet informasjon fra fulltekst og der det ikke er rapportert informasjon i sammendraget står cellen tom.

Spørsmålet	Spørsmålet i PICO format				Referansen	Resultater *	Konklusjon *
	P (Utvalget, deltagere)	I (Intervensjon, tiltak)	C (Sammenligning, kontroll)	O (Utfallsmål)			
Hva er effekten av ketamine som anestesimiddel i ECT sammenlignet med ketamin som behandlingsmiddel for behandlingsresistent depresjon?	major depressive disorder (MDD), bipolar depression, resistant depression design: randomized controlled trials, 9 non-ECT studies (192 patients with major depressive disorder and 34 patients with bipolar depression) 4 ECT trials (118 patients)	Non ECT - ketamine administration to patients with diagnosis of depression, and	ECT - Ketamine given as anesthetic agent in ECT, for resistant depression	evaluation of depression severity based on a validated scale. Secondary outcomes were the duration of ketamine's effect, the efficacy on suicidal ideations, the existence of a dose effect, and the safety/tolerance of the treatment	Fond 2014 (3)	Three of four studies found significant decrease of suicidal thoughts and one found no difference between groups, but suicidal ideations were only studied by the suicide item of the depressive scales. It was not possible to determine a dose effect; 0.5 mg/kg was used in the majority of the studies.	The present meta-analysis confirms ketamine's efficacy in depressive disorders in non-ECT studies, as well as in ECT studies

Hva er effekten av farmakologisk, psykologisk kombinationsterapi, komplementær behandling for depresjon hos barn og ungdom?	children and adolescents with depression included: *21 systematic reviews*, RCTs, or observational studies	electroconvulsive therapy, escitalopram, family therapy, fluoxetine (alone or with cognitive therapy or CBT), fluvoxamine, group therapeutic support (other than CBT), guided self-help, individual psychodynamic psychotherapy, interpersonal therapy, lithium, mirtazapine, monoamine oxidase inhibitors (MAOIs), omega-3 polyunsaturated fatty acids, paroxetine, sertraline (alone or with CBT), St John's Wort (Hypericum perforatum), tricyclic antidepressants, and venlafaxine.	-	-	Hazell 2011 (4)	We performed a GRADE evaluation of the quality of evidence for interventions	information presented relating to the effectiveness and safety of the interventions
Hva er effekten av ECT sammenlignet med placebo/sham-ECT (SECT)?	To review the literature on the efficacy of electroconvulsive therapy [ECT], with a par-	ECT	simulated-ECT [SECT]	-	Read 2010 (5)	There are no placebo-controlled studies evaluating the hypothesis that ECT prevents suicide, and no robust evidence from other	Given the strong evidence (summarised here) of persistent and, for some, permanent brain dysfunction, primarily evidenced in the

	ticular focus on depression, its primary target group Included: all studies comparing ECT with simulated-ECT [SECT]					kinds of studies to support the hypothesis	form of retrograde and anterograde amnesia, and the evidence of a slight but significant increased risk of death, the cost-benefit analysis for ECT is so poor that its use cannot be scientifically justified.
Er ECT klinisk effektiv og kost-effektiv for depressive lidelse, schizofreni, katatoni og mani?	Two good-quality *systematic reviews of randomised evidence* of the efficacy and safety of ECT in people with depression, schizophrenia, catatonia and mania were identified. Four systematic reviews on non-randomised evidence were also identified, although only one of these could be described as good quality	ECT og annet	-	The economic modelling results for depression did not demonstrate that any of the scenarios had a clear economic benefit over the others, mainly because of the uncertainty surrounding the clinical effectiveness of the different treatments and the quality of life utility gains. Sensitivity analysis surrounding the cost of ECT and the quality of life utility values had little effect on the overall results	Greenhalgh 2005 (6)	There was no randomised evidence of the effectiveness of ECT in specific subgroups including older people, children and adolescents, people with catatonia and women with postpartum exacerbations of depression or schizophrenia. .	Real ECT is probably more effective than sham ECT, but as stimulus parameters have an important influence on efficacy, low-dose unilateral ECT is no more effective than sham ECT. ECT is probably more effective than pharmacotherapy in the short term and limited evidence suggests that ECT is more effective than repetitive transcranial magnetic stimulation. Tricyclic antidepressants (TCAs) may improve the antidepressant effect of ECT during the course of treatment. Continuation pharmacotherapy with TCAs combined with lithium in people who have responded to ECT reduces the rate of relapses. Overall, gains in the efficacy of the intervention depending on the stimulus parameters of ECT

							are achieved only at the expense of an increased risk of cognitive side-effects. Limited evidence suggests these effects do not last beyond 6 months, but there is no evidence examining the longer term cognitive effects of ECT. There is little evidence of the long-term efficacy of ECT. ECT either combined with antipsychotic medication or as a monotherapy. monotherapy is not more effective than antipsychotic medication in people with schizophrenia. More research is needed to examine the long-term efficacy of ECT and the effectiveness of post-ECT pharmacotherapy, the short-term and longer term cognitive side-effects of ECT, and the impact of ECT on suicide and all-cause mortality. Further work is needed to examine the information needs of people deciding whether to accept ECT and how their decision-making can be facilitated. More research is also needed on the mechanism of action of

							ECT. Finally, the quality of reporting of trials in this area would be vastly improved by strict adherence to the Consolidated Standards of Reporting Trials recommendations. Economic analysis may identify areas in which research would be best targeted by identifying parameters where reducing the level of uncertainty would have the most effect in helping to make the decision on whether ECT is a cost-effective treatment.

*Innhentet fra abstrakt, IKKE fra fulltekst

Tabell 2: Forskningsspørsmål og spørsmålet i PICO format for RCT studiene (N=2)

Vi innhentet informasjon fra sammendraget og satte den inn i tabellen nedenfor. Vi har ikke innhentet informasjon fra fulltekst og der det ikke er rapportert informasjon i sammendraget står cellen tom.

Spørsmålet og referansen	Spørsmålet i PICO format				Resultater *	Konklusjon *
	P (Utvalget, deltagere)	I (Intervensjon, tiltak)	C (Sammenligning, kontroll)	O (Utfallsmål)		

Hva er effekten av ECT for sammenlignet med rTMS for å redusere suicidal atferd? Keshtkar (7) 2011	73 patients with MDD diagnosed according to Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria	ECT	rTMS	Beck Depression Inventory, Hamilton Depression Rating Scale	Both ECT and rTMS significantly improved depression and suicidal behavior scores	ECT led to greater reductions in suicidal behavior than rTMS. Until strong evidence for the safety and efficacy of rTMS is available, further studies are needed to compare ECT and rTMS in terms of the long-term relapse rate and quality of life.
Hva er effekten av vedlikeholdsbehandling ECT sammenlignet med farmakoterapi over 1 år, for å redusere suicid og suicidforsøk? Nordenskjold (9) 2013	56 patients with unipolar or bipolar depression, in 4 hospitals in Sweden, from 2008 to 2012.	29 treatments of continuation ECT, for 1 year	pharmacotherapy or pharmacotherapy alone, for 1 year	Relapse was defined as 20 or more points on the Montgomery Asberg Depression Rating Scale or inpatient psychiatric care or suicide or suspected suicide	Sixty-one percent of the patients treated with pharmacotherapy versus 32% of the patients treated with ECT plus pharmacotherapy relapsed within 1 year (P = 0.036). The Cox proportional hazard ratio was 2.32 (1.03-5.22).	One suspected suicide and 3 suicide attempts by intoxication occurred, all in the pharmacotherapy-alone group.

*Innhentet fra abstrakt, IKKE fra fulltekst

Vedlegg 3: Tematisk relevante ekskluderte studier

Vedlegg 3: Tematisk relevante ekskluderte referanser

Vi ekskluderte i alt 44 referanser, 40 studier på bakgrunn av studiedesign og/eller usikker omtale av suicidalitet og 4 norske mastergrad og doktorgradsavhandlinger.

Oversikter, ikke systematiske (9)

Vi ekskluderte ni ikke systematisk oversikt, åtte omtalte suicidalitet hos voksne og en selvskading hos barn og ungdom

Voksne (N=8)	
Førsteforfatter og årstall	Tittel og sammendrag
Fink 2014 (1)	The role of ECT in suicide prevention Abstract: Suicide is a leading cause of death among psychiatric patients, and a leading cause of death from all causes in people younger than 30 years. The rapid relief of severe depression, mania, and psychosis by electroconvulsive therapy (ECT) is accompanied by the rapid reduction in suicide drive. Electroconvulsive therapy use is, however, inhibited by fear of electricity, unreasoned prejudice, legislative restrictions, and the limited availability of trained professionals and adequate facilities. This review assesses the experience with ECT in persons with suicide risk and recommends the consideration of ECT in treatment algorithms to reduce suicide rates.
Fink 2014 (2)	What was learned: studies by the consortium for research in ECT (CORE) 1997-2011 Abstract: OBJECTIVE: To review the findings of the four-hospital collaborative studies of electroconvulsive therapy (ECT) in unipolar depressed patients known as CORE between 1997 and 2011. Unipolar depressed patients were treated with bilateral ECT, and on remission were randomly assigned to a fixed schedule continuation ECT or to combined lithium and nortriptyline for 6 months. A second study compared three electrode placements in unipolar and bipolar depressed patients. METHOD: *Nineteen published reports were reviewed*. The findings are compared with those of a parallel multi-hospital study of ECT led by a Columbia University Collaboration (CUC) team that studied right unilateral ECT in a similar population with similar inclusion/exclusion and remission criteria. Successful ECT was followed by placebo, nortriptyline alone, or combined lithium, and nortriptyline. RESULTS: Relapse rates after remission were similar with fixed schedule ECT as with medications. Predictors of outcome (psychosis, suicide risk, polarity, melancholia, atypical depression, age) and technical aspects (electrode placement, seizure threshold, speed of response) are discussed. CONCLUSION: The findings offer criteria to optimize the selection of patients, the technique, and outcome of ECT for unipolar and bipolar depressed patients. Continuation ECT is an effective alternative to continuation treatment with lithium and nortriptyline. Bilateral electrode placement is more efficient than alternative placements. ECT relieves both bipolar and unipolar depression.
Riva-Posse 2013 (3)	The role of electroconvulsive and neuromodulation therapies in the treatment of geriatric depression Abstract: Geriatric depression is associated with increased mortality because of suicide and decreases in functional and physical health. Many elders' depression is resistant to psychotherapy and medication and can become chronic. Electroconvulsive therapy (ECT) is increasingly used in the treatment of medication-resistant or life-

	threatening geriatric depression. Neuromodulation therapies (subconvulsive, focal, or subconvulsive and focal) are alternatives for the management of treatment-resistant depression in the elderly. Therapies that combine both strategies could be safer but may not be as effective as ECT. This review covers the evidence on the safety and efficacy of ECT and the neuromodulation therapies in geriatric depression.
Levy 2012 (4)	Use of ultra-brief pulse electroconvulsive therapy to treat severe postnatal mood disorder Abstract: OBJECTIVE: To describe the use of ultra-brief electroconvulsive therapy (ECT) in three postnatal women with severe, treatment resistant depression. The indications and evidence for the use of ECT in the treatment of postnatal depression are discussed. METHOD: We present *a case series and review relevant literature*. RESULTS: Three patients with severe episodes of depression postnatally, not responding to medication, presented to a private mother-baby inpatient unit. All three patients had significant suicidal ideation and two underwent involuntary treatment in public hospitals during the course of their presenting illnesses. They were treated with right unilateral ultra-brief ECT and a range of medications. All women began to respond within 3-6 treatments and no significant cognitive side effects were observed. CONCLUSIONS: Our findings suggest that right unilateral ultra-brief ECT is a useful treatment modality for severe and treatment resistant depression in the postnatal period. ECT is a useful option in women who have experienced significant medication side effects, or for those whose severity of illness necessitates rapid symptom resolution. Ultra-brief ECT caused minimal clinically observable side effects, which may assist mothers to resume care of their infants more rapidly.
Sienaert 2011 (5)	What we have learned about electroconvulsive therapy and its relevance for the practising psychiatrist Abstract: In this *narrative review*, the current knowledge base on the efficacy and the *practice of electroconvulsive therapy (ECT) is reviewed*, and its relevance for the practising psychiatrist is appreciated. In the past decade, several large-scale studies have confirmed the significant superiority of ECT in the treatment of severe and refractory psychiatric conditions, such as major depressive disorder and bipolar disorder. However, the efficacy of ECT is not reflected in current treatment algorithms, where ECT is often reserved as a last resort. However, clinical characteristics, such as the presence of psychotic symptoms, suicidality, or catatonic signs, should prompt the clinician to consider ECT earlier in the treatment course. ECT is a safe procedure, without absolute contraindications for its use. Nevertheless, patients' fears and complaints should be acknowledged, and patients should be adequately informed about expected benefits and possible risks, such as memory problems, that are generally transient. Research focusing on further minimizing memory problems, while maintaining a superior efficacy, is ongoing. Adequate continuation treatment, either pharmacotherapy or continuation ECT, after a successful ECT course is of vital importance to maintain the benefits achieved and should be the focus of future research.
Gournellis 2006 (6)	Psychotic (delusional) major depression in the elderly: A review Abstract: The prevalence in the community of psychotic (delusional) major depression (PMD) in the elderly was found to be 1%. In impatient settings the frequency of the disorder varies between 24% and 53%. There is also evidence that its frequency increases in old age. In the elderly, PMD compared to non-PMD was found to be a more severe and melancholic form of depression with more psychomotor disturbances (agitation or retardation) and feelings of guilt, more anxiety and hypochondriacal complains and less insight. Delusional beliefs of paranoid and hypochondriacal content have been found to be prominent. Additionally, elderly psychotic depressives (PDs) are possibly at greater risk of suicide attempt. Also, elderly PDs have been observed to have more cognitive processing difficulties. As regards neurobiological findings,

	they have been found to have lower dopamine-beta-hydroxylase activity, smaller volume of prefrontal cortex, more brain stem and left-side frontotemporal atrophy, enlargement of the third ventricle and pontine reticular formation hypertensities. The prognosis for the disorder seems worse, with higher relapse rates and mortality although not all studies are in agreement. In the acute phase, the response to ECT is favourable (88%), however the response rates to combination of an antipsychotic and an antidepressant (25-50%) seem to be inferior to those observed in younger adults (70-80%). Close follow-up and continuation therapy with an antidepressant is needed to avoid relapses.
Silverstone 2004 (7)	A review of acute treatments for bipolar depression Abstract: Bipolar patients generally spend much more time in the depressed phase of their illness than the manic phase, and there are many more bipolar type II and bipolar spectrum disorder patients than there are bipolar type I. Additionally, there is a significant risk of suicide in bipolar patients when depressed. The treatment of the depressed phase of bipolar disorder is therefore a matter of some priority. Here, we review current evidence supporting the use of five groups of treatments: anti-depressants; lithium; anti-convulsants (valproate, and carbamazepine, lamotrigine, gabapentin); anti-psychotics; and other treatments (*electroconvulsive therapy*, benzodiazepines, sleep-deprivation, and dopamine agonists). From this review, it is apparent that the literature regarding the treatment of bipolar depression is significantly limited in several key areas. Nonetheless, from the evidence currently available, the treatments with the best evidence for efficacy are selective serotonin reuptake inhibitors (SSRIs) and lamotrigine. There is also some evidence in favour of bupropion and moclobemide. Although lithium and olanzapine monotherapies can also be beneficial, they appear less efficacious than antidepressants. One of the major concerns about treatment with antidepressants has been the risk of precipitating a switch into mania. However, recent studies suggest that, if a mood stabilizer and antidepressant are given concurrently, then the risk of switching is minimized. There is also recent evidence for an independent antidepressant action for at least one atypical antipsychotic. Therefore, the conclusion from this review, in contrast to previous suggestions, is that a combination of an atypical antipsychotic and either an SSRI or lamotrigine may provide a useful first-line treatment for depressed bipolar disorder patients. Further research is clearly required to examine this approach and compare it with other possible treatment options.
Swann 2005 (8)	Long-term treatment in bipolar disorder Abstract: Bipolar disorder is a lifelong illness with a course that is usually chronic or recurrent. Severity of complications is generally proportionate to the number of episodes, especially depression. In addition to potentially preventing episodes, effective treatment reduces mortality. This article reviews long-term treatment strategies for bipolar disorder, focusing on depressive episodes, and discusses treatment studies, including problems in design. Treatment effectiveness, including reduction of suicide risk, is enhanced if patients and physicians collaboratively recognize and treat prodromal symptoms, preventing the emergence of episodes. Strategies for treatment differ as one progresses from obtaining syndromal recovery in the acute episode, to functional recovery during continuation treatment, to stability during maintenance treatment. Successful long-term treatment of bipolar disorder requires integrated pharmacologic and *nonpharmacologic treatments* combined with a therapeutic alliance that facilitates a proactive, preventive approach to the illness.
Barn og ungdom (N=1)	
Shoirah 2011 (9)	Electroconvulsive therapy in children and adolescents

	Abstract: Electroconvulsive therapy (ECT) is a recognized and effective treatment in adults for several psychiatric and neurological conditions in which the use of pharmacotherapy is ineffective, untimely or contraindicated. It has been used with success in mood and psychotic disorders, catatonia, neuroleptic malignant syndrome, Parkinsons disease and intractable seizures. Its benefits have been recognized and its risks identified through an extensive body of research. The benefits of ECT are not limited to the adult population; research has been conducted on its use in child and adolescent populations for decades. In 2004, the American Academy of Child and Adolescent Psychiatry published practice parameters for the use of ECT in adolescent populations. However, ECT continues to be underused in cases where it is clearly indicated. In this article, we review the use of ECT in the adolescent population; its indications, administration, contraindications and risks, with emphasis on articles published after the American Academy of Child and Adolescent Psychiatry practice parameters were formulated. We also review reasons behind the underutilization of ECT in adolescents for whom this treatment modality is indicated.

RCT og Multisenterstudie (2)

Vi ekskluderte en RCT genstudie, en multisenter observasjonsstudie om ECT .

Førsteforfatter og årstall	Tittel og sammendrag
Lin (10) 2014	Influence of Val108/158Met COMT Gene Polymorphism on the Efficacy of Modified Electroconvulsive Therapy in Patients with Treatment Resistant Depression Depression is a common emotional disorder associated with increased risk of suicide and rate of disability. In this double-blinded control study, we tested the efficacy of modified electroconvulsive therapy (MECT) in patients with treatment resistant depression (TRD) using the Hamilton Depression Rating Scale for Depression (HAMD). The total scores of HAMD were found to be significantly decreased after the treatment. The genotyping of catechol-O-methyltransferase (COMT) was carried out with polymerase chain reaction-based testing. Our results demonstrated that frequency of mutant COMT alleles in TRD patients was significantly higher than that of the controls indicating a correlation of the enzyme genotype to the occurrence of TRD. Moreover, the patients homozygous for wild-type COMT gene (G/G) were evidenced to be more sensitive to MECT treatment than those with an heterozygous mutant genotype (A/G).
Kellner (11) 2005	Relief of Expressed Suicidal Intent by ECT: A Consortium for Research in ECT Study Abstract. Objective: This study assessed the incidence, severity, and course of expressed suicidal intent in depressed patients who were treated with ECT. The data are from the first phase of an ongoing, collaborative multicenter study, the overall aim of which was to compare continuation ECT with pharmacotherapy in the prevention of relapse after a successful course of ECT. Method: Suicidal intent, as expressed by patients during an interview, was scored at baseline and before each ECT session with item 3 on the 24-item Hamilton Depression Rating Scale in 444 patients with unipolar depression. Results: One hundred thirty-one patients (29.5%) reported suicidal thoughts and acts (score of 3 or 4) at baseline. Scores decreased to 0 after 1 week (three ECT sessions) in 38.2% of the patients, after 2 weeks (six ECT sessions) in 61.1%, and in 80.9% at the end of the course of treatment. Conclusions: Expressed suicidal intent in depressed patients was rapidly relieved with ECT. Evidence-based treatment algorithms for major depressive mood disorders should include dichotomization according to suicide risk, as assessed by interview. For patients at risk, ECT should be considered earlier than at its conventional "last resort" position

Registerdatastudier (2)

Vi ekskluderte to registerdatastudier som undersøkte mortalitet sekundært til ECT.

Førsteforfatter og årstall	Tittel og sammendrag
Munk-Olsen (12) 2007	All-cause mortality among recipients of electroconvulsive therapy: Register-based cohort study Background: Studies investigating mortality secondary to electroconvulsive therapy (ECT) are few. Aims: To assess the risk of mortality from natural and unnatural causes among ECT recipients compared with other psychiatric in-patients over a 25-year period. Method: Register-based cohort study of all in-patients admitted to a psychiatric hospital from 1976 to 2000. Cause-specific mortality was analysed using log-linear Poisson regression. Results: There were 783 deceased in-patients who had received ECT compared with 5781 who had not. Patients who had received ECT had a lower overall mortality rate from natural causes (RR = 0.82, 95% CI 0.74-0.90) but a slightly higher suicide rate (RR = 1.20, 95% CI 0.99-1.47), especially within the first 7 days after the last ECT treatment (RR = 4.82, 95% CI 2.12-10.95). Conclusions: Further investigation of the effect of ECT on physical health and the observed increased suicide rate immediately following treatment are needed, although the last finding is likely to result from selection bias.
Hunt (13) 2011	Electroconvulsive therapy and suicide among the mentally ill in England: A national clinical survey We aimed to determine the number and characteristics of psychiatric patients receiving electroconvulsive therapy (ECT) who had subsequently died by suicide. Data were collected on an 8-year (1999-2006) sample of suicide cases in England who had been in recent contact with mental health services. Of 9752 suicides, 71 (1%) were being treated with ECT at the time of death. Although the number of patients who received ECT had fallen substantially over time, the rate of suicide in these individuals showed no clear decrease and averaged 9 deaths per year, or a rate of 10.8 per 10,000 patients treated. These suicide cases were typically older, with high rates of affective disorder and previous self-harm. They were more likely to be an in-patient at the time of death than other suicide cases. Nearly half of the community cases who had received ECT had died within 3 months of discharge. Our results demonstrated that the fall in the use of ECT has not affected suicide rates in patients receiving this treatment. Services appear to acknowledge the high risk of suicide in those receiving ECT. Improvements in care of these severely ill patients may include careful discharge planning and improved observation of in-patients in receipt of ECT.

Kasuistikkstudier (16)

Vi ekskluderte 15 kasuistikkstudier som omtalte suicidalatitet og 1 selvskading hos barn/ungdom (totalt 16).

Kasuistikkstudier med omtale av suicalitet (N=15)	
Førsteforfatter og årstall	Tittel og sammendrag
Struglia (14) 2013	Electroconvulsive therapy in resistant depression: A case series of 25 patients Objectives: The electroconvulsive therapy (ECT) is a non-pharmacological somatic treatment whose effectiveness has been demonstrated for patients suffering from severe and resistant depression (i.e. cases in which patients do not respond adequately to antidepressant treatment). It is estimated that Treatment Resistant Depression oc-

	curs in up to 30% to 40% of depressive episodes adequately treated with first-line antidepressant therapy in psychiatric setting. Treatment Resistant Depression results in disproportionate burdens, escalating medical and mental health care costs, clinicians time, and personal suffering. Several studies demonstrated ECT's efficacy in different subgroups, such as patients with bipolar depression, mixed state, psychotic features and suicidal ideation. Methods: We report a case series of 25 patients with treatment-resistant major depression who received ECT at the psychiatric unit of Casa di Cura "Villa Serena", Citta Sant'Angelo. The subjects included in the study had at least 18 years of age and met the criteria of the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), for a major depressive episode associated with major depressive disorder (MDD) (n = 11, 44%), bipolar disorder (BP) (n = 11, 44%) and schizoaffective disorder (n = 3, 12%). The group consisted of 8 men and 17 women with a mean age +/- SD of 53.72 +/- 13.88 years and with a mean age of onset of 32.12 +/- 14.16 years. 9 patients (36%) had a temperament hyperthymic, 7 (28%) depressive, and 9 (36%) anxious. 11 patients (44%) had a history of suicidal behavior. Patients have been evaluated before treatment, one week, 6 months and 1 year after the treatment with a global clinical assessment (CGI). Results: Clinical evaluations made a week after the ECT showed a clinical improvement overall in 10 patients (90%) with a diagnosis of depressive disorder, 7 (63%) with bipolar disorder and 3 (100%) with schizoaffective disorder. The same evaluation repeated 6 months and 1 year after the ECT reaffirmed a global clinical improvement in 8 patients (72%) with a diagnosis of depressive disorder, 6 (54%) with bipolar disorder and in 1 subject (33%) diagnosed with schizoaffective disorder. Conclusions: Electroconvulsive therapy appears to be effective in determining the overall clinical improvement in treated subjects. All subjects with depressive temperament show an improvement in global clinical assessments at all the three post-treatment evaluations. In particular, in our sample there were no differences in outcome due to diagnostic subgroup belonging, to presence or absence of suicidality and to temperamental characteristics. These conclusions are, however, limited by the experimental design and therefore liable to many uncontrolled variables.
Harris (15) 2013	Testosterone replacement in male patient with treatment-resistant depression and hypogonadism Background: Research suggests testosterone may be effective as an antidepressantaugmentation strategy in men with low testosterone levels and who are only partially responsive to antidepressants. No formal guidelines exist for the use of testosterone in such individuals. Review of the Literature: A PubMed search revealed limited RCTs with inconsistent results, possibly influenced by differences in patient population and route of administration. A recent meta-analysis of 7 studies showed a significant positive effect of testosterone replacement in depressed men, but results varied depending on administration route. Patient History: The patient is a 40 year old Caucasian male with history of chronic depression committed after a recent overdose. He claimed he has been suicidal for years with symptoms of low energy, frequent crying, hopelessness, and a non-existent sex drive. The patient has had several psychiatric admissions in the last 5 years and multiple medication trials. Medical co-morbidities include chronic back pain and hypogonadism. A baseline testosterone level was subtherapeutic at 176 ng/dL (348-1197 ng/dL). Initial attempts were made to optimize the patient's antidepressant regimen but depressive symptoms persisted. Due to his report of past response to testosterone replacement, Endocrinology was consulted at Week 3, and Testosterone 1% gel 5 g daily was initiated. A testosterone level at Week 7 was still low (260 ng/dL), resulting in a dose increase to 7.5 g daily. On Week 8, the level had unexpectedly decreased to 187 ng/dL, which resulted in a change to Testosterone cypionate 200 mg IM Q 2 weeks to avoid poor absorption. Testosterone levels at Weeks 11 and 13 were in the normal range (830 and 911 ng/dL, respectively). By

	week 17, after 6 weeks of therapeutic levels, the patient's intrusive thoughts of suicide and endorsements of unchanged mood persisted. Due to his refractory symptoms, ECT has been pursued. Conclusion: Despite achieving therapeutic testosterone levels for 6 weeks, a trial duration consistent with clinical studies, our patient did not achieve a significant improvement in mood. Our case demonstrates absorption variability among formulations and affirms observations noted in the literature suggesting idiosyncratic responses to testosterone, with occasional cases of marked response and many others showing none.
Rapinesi (16) 2012	Successful and rapid response to electroconvulsive therapy of a suicidal patient with comorbid bipolar i disorder and histrionic personality disorder A woman with bipolar disorder I, histrionic personality disorder, and suicidal ideation with repeated suicide attempts, who had been treated for 2 years with mood stabilizers, antipsychotics, and benzodiazepines, received a total of 8 bitemporal-biparietal electroconvulsive therapy sessions. Her suicidal ideation and self-harm behavior disappeared immediately after the first session and her psychopathology soon after. This supports the existence of a relatively independent suicidal syndrome and confirms data on its immediate responsiveness to electroconvulsive therapy. Electroconvulsive therapy must not be long withheld from patients with such characteristics to reduce unnecessary sufferance and suicidality.
Hausn (17) 2012	Maintenance strategy with electro-convulsive treatment in severe chronic schizophrenia: Two case reports and review. [German] Electroconvulsive therapy (ECT) was established in the 1930s and still remains an important alternative in case of psychosis or depression even after inauguration of antipsychotics and antidepressants. Two instructive case reports show that patients may benefit from maintenance ECT (M-ECT). In a 67 year old male suffering from catatonic psychosis since youth and Parkinson disease for 10 years received M-ECTs during 31/2 years with intervals between 2 and 3 weeks. During M-ECT he was not referred to hospital until severe urinary tract infection lead to a deterioration of his psychosis. In an 81 year old female with schizoaffective psychosis and suicide ideations out-patient treatment was warranted for 2 years by means of M-ECT with intervals of 2 to 3 weeks. Both patients reported a good quality of life continuing their homecare service. All ECT treatments were organized in an out-patient setting and were well tolerated and efficient.
Omprakash (18) 2011	Prolonged apnea following modified electroconvulsive therapy with suxamethonium. A 36-year-old male from an urban middleclass family with strained relationship among family members was referred from a corporate hospital for further management of psychological problem. As he was attempting suicide repeatedly, Electroconvulsive Therapy (ECT) was planned. After preoperative assessment and preparation, modified ECT was done with thiopentone and 0.5 mg/kg of suxamethonium. Apnea following suxamethonium was prolonged for 2 hours. Subsequent enquiry revealed that patient was treated for organophosphate poisoning and was on ventilator support for 15 days. This was concealed by the relatives. On searching patient previous records, Butyrylcholinesterase levels were very low, i.e., 350 u/l (normal reference range is 5 500 - 12 500 u/l). Prolonged suxamethonium apnea should be anticipated in patients with recent history of organophosphate poisoning; it is advisable to estimate the levels of butyrylcholinesterase and avoid suxamethonium in patients with low enzyme levels.
Kobeissi (19) 2011	Resolution of severe suicidality with a single electroconvulsive therapy Electroconvulsive therapy is a rapid and effective treatment of severe depression that has been shown to quickly decrease or eliminate suicidal thoughts and behaviors. We describe the case of an 88-year-old man hospitalized for a carefully premeditated suicide attempt with highly lethal means. He was treated with a single electroconvulsive

	therapy (ECT) and improved markedly. His suicidal ideation remitted, and the patient was still free of suicidal ideation at 5 months of follow-up. We discuss the effect of ECT on suicidal ideation, the benefit of minimizing the number of total ECT treatments, and the possible biological markers of change after a single treatment in an ECT-naive patient.
Jayaraman (20) 2011	Delayed encephalopathy from carbon-monoxide poisoning: Can it be precipitated by electroconvulsive therapy (ECT)? Carbon Monoxide (CO) poisoning presents either as an acute CO intoxication or as delayed encephalopathy with 2-4 weeks latency. 46 years old male with history of depression, having survived 2 consecutive six days apart CO self-poisoning attempts, 24 days later developed delayed encephalopathy. He presented to general hospital 6 days after his suicidal attempts with complaints of weakness, giddiness, poor concentration and appetite. Due to delayed presentation and low levels of Carboxyheamoglobin, he did not require active treatment for CO-poisoning. He was transferred to the psychiatric hospital in view of depressive symptoms and suicidal risk. He was initially commenced on antidepressants, but due to lack of response and high suicide risk, he was started on a course of thrice weekly Electro Convulsive Treatment (ECT). The day after his 5th ECT, he developed delirium, gait disturbances and worsening incontinence. MRI showed diffuse heterogenous increased signal noted in the peri-ventricular white matter of fronto-parietal areas, and more extensively in the temporal and occipital lobes with loss of differentiation of the grey-white matter. EEG showed bi-frontal maximum generalized slowing suggestive of a mild diffuse encephalopathy with normal CSF and extensive blood investigations. These findings were consistent with that of a delayed leucoencephalopathy secondary to CO poisoning. Literature search yielded only one similar case report of CO poisoning related neuropsychiatric relapse following ECT treatment. Despite rehabilitation, the patient still exhibits personality changes. We would like to emphasize and warn that ECT could potentially worsen the underlying brain damage from CO poisoning.
Berg (21) 2011	Electroconvulsive treatment of a patient with Parkinson's disease and moderate depression Depression is a usual comorbidity in patients with Parkinson's disease. It has been known for more than 50 years that electroconvulsive treatment (ECT) has a positive effect on the muscular symptoms of Parkinson's disease. Many countries do not allow giving ECT for this indication. We have recently treated a resident patient in an acute psychiatric facility referred to the hospital with moderate depressive symptoms and strong suicidal ideation. Before and after a series of ECT he filled out the Beck Depression Inventory and the Antonovsky Sense of Coherence test. The scores before ECT were 20 and 2.69, respectively, and after 12 treatments 14 and 3.38. Both test results indicate improvement regarding level of depression and coping in life. The physiotherapists treating him observed that his rigidity was reduced and his gait improved. Muscular tonus was reduced and increased his tendency of falling as he had less tonus in muscles close to joints. Self help efficiency in daily tasks improved. He got cognitive impairment during and in the weeks after ECT. Electroconvulsive treatment should be offered to more patients with Parkinson disease and depression in order to lessen the burden of both depression and Parkinson symptoms.
Zaidner (22) 2010	New-onset dissociative disorder after electroconvulsive therapy Electroconvulsive therapy (ECT) is an exceptionally effective treatment for a number of psychiatric conditions; however, a common adverse effect is temporary cognitive impairment, especially memory loss. The dissociative disorders also involve disturbances of memory, as well as consciousness and personal identity, but are rarely iatrogenic. We report a case in which dissociative symptoms developed after ECT. A 51 -year-old woman with hypothyroidism, migraine headaches, bipolar disorder, and anorexia by history was admitted for worsening depression with suicidal ideation. After a course

	of 7 right-sided ECT treatments, she experienced remarkable personality change, claiming that it was 1976 and behaving as though she was 30 years younger. Neuropsychological tests were normal, and her memory and former personality spontaneously returned 2 weeks later. This case illustrates that such events may be seen in patients with certain psychiatric profiles, and further studies are needed to determine the risk factors for the occurrence of dissociative episodes after ECT.
Virit (23) 2010	Effective treatment with electroconvulsive therapy of three cases with Parkinson disease, psychosis and depression Parkinson disease (PD) is frequently complicated by a range of psychiatric disorders. Depression occurs approximately 40% and psychosis is seen in up to 30% in patients with PD. Psychosis is predominantly as a side effect of dopaminergic treatment. Herein, we present three cases with PD,' psychosis and depression which treated with electroconvulsive therapy (ECT). ECT was started for suicide risk in one case and for treatment resistance in two cases. All cases demonstrated marked improvement with ECT in psychotic and depressive symptoms. In addition, PD symptoms were reduced in the cases. We suggest ECT is a safe and effective treatment option for depression and psychosis in PD. However, ECT is a beneficial treatment method for improvement of PD symptoms.
Bjerre (24) 2010	Ketamine in melancholic depression [Dansk] A 35-year-old male known with bipolar disorder was admitted after a suicide attempt with cuts in both wrists. The patient had a major depression with melancholic symptoms and nihilistic delusions. To relieve the patient's agony in the days before electroconvulsive therapy and to reduce the risk of suicide, the patient was treated with S-ketamine 0,5 mg/kg. The patient's symptoms were reduced two hours after treatment and the effect was measurable for five days.
Yeh (25) 2009	Hyperventilation with acute respiratory alkalosis veils an unusual suicidal attempt We present a patient with a history of bipolar disorder, who attempted suicide by administering air intravenously. The initial presentation of hyperventilation and acute respiratory alkalosis masked this unusual suicidal attempt. This 23-year-old man had a three-year history of bipolar II disorder. Considering both bipolar psychotic depression and high suicide risk, we submitted this patient to electroconvulsive therapy (ECT). This report highlights the dangers of leaving indwelling catheters in depressed patients undergoing ECT. Hyperventilation can present as a medical emergency in psychiatric patients, and organic or psychogenic causes should be differentiated to provide appropriate treatment. Before the patients respond to ECT, any suicidal behaviors should be prevented cautiously.
Keks (26) 2009	Evaluation of treatment in 35 cases of bipolar suicide Objective: The aim of the present study was to evaluate clinical factors relevant to suicide prevention (including treatment) in cases of bipolar suicide with available therapeutic histories. Method: Victorian Coroner's Office data enabled identification of suicides that occurred between March 1993 and December 2001. Cases involving sufficient clinical notes to enable diagnosis of DSM-IV bipolar disorder and review of treatment were de-identified and assessed by an expert clinical panel. Results: From 3752 suicides, 35 eligible bipolar subjects (22 men, 13 women) aged 40.3 +/- 1.8 years were identified. Duration of illness was 11.9 +/- 1.1 years. A total of 86% had made at least one previous suicide attempt, and 83% were in the depressed phase of illness. A total of 63% manifested psychosis at some time during lifetime illness. Fourteen per cent were inpatients, and 26% suicided within 6 weeks of hospital discharge. The panel's retrospective risk assessment concluded that only 48% of cases could have been assessed as high risk. In the 4 weeks prior to suicide, treatment was rated as not reaching benchmark standards in 60% of cases. Electroconvulsive therapy had

	been given to 11%, lithium to 43% (but definitely therapeutic in only 11%), 31% had never been treated with lithium, and psychosocial interventions did not reach adequate standards in 57% during the previous year. Conclusions: In the majority of bipolar suicide cases in the present case series the subjects did not receive treatment at or above a benchmark standard, often due to illness and situational factors, but also possibly due to inadequate clinical interventions. Strategies to improve treatment may reduce suicide in bipolar disorder.
van Niel (27) 2007	Electroconvulsive therapy in depressed adolescents [Dutch] Two patients, young women aged 15 and 17, both suffering from major depression with psychotic features, were resistant to treatment with antidepressive regimen and psychotherapy. Both patients became severely suicidal and were subsequently successfully treated with electroconvulsive therapy (ECT). The second patient needed maintenance ECT once a month in order to stay in remission. Whereas ECT is a well-studied and accepted treatment option in adult psychiatry, in child psychiatry people are reluctant to even consider this option. This resistance is partly based on the possible side effects ofECT i.e. memory problems. As a result, the effect ofECT in adolescents has not yet been well studied. In 2004, the American Academy of Child and Adolescent Psychiatry proposed guidelines for the use of ECT in adolescents. Following these guidelines, the use ofECT in adolescents seems to be a safe treatment option, however further research to the effect of ECT in this age group is warranted.
Abdi (28) 2004	Electroconvulsive therapy for neuropathic pain: a case report and literature review OBJECTIVE: To describe a case of intractable brachial plexopathy-induced neuropathic pain syndrome treated with electroconvulsive therapy after a failed trial of conventional drugs and interventional pain management. CASE REPORT: A 32-year-old male had chronic intractable neuropathic pain of the right upper extremity and shoulder for about 10 years, due to brachial plexopathy. He tried multiple pain medications and underwent various interventional pain procedures without significant pain relief. When the patient subsequently developed severe depression with suicidal ideation, he underwent electroconvulsive therapy, which significantly improved the depression and pain for two months. DISCUSSION: There is a growing list of non-psychiatric conditions that may be treated with electroconvulsive therapy. Chronic intractable pain with or without depression has been on and off the list for years. Further studies may eventually demonstrate efficacy of ECT for intractable neuropathic pain syndromes.
Kasuistikkstudier med omtale av selvskading (N=1)	
Wachtel 2009 (29)	ECT for self-injury in an autistic boy Objective: Self-injurious behavior presents a significant challenge in autism, and first-line psychopharmacological and behavioral interventions have limited efficacy in some patients. These intractable cases may be responsive to electroconvulsive therapy. Clinical picture: This article presents an eight-year-old boy with autism, mental retardation, prominent mood lability and a five-year history of extreme self-injurious behavior towards his head, averaging 109 self-injurious attempts hourly. The patient was at high risk for serious head trauma, and required usage of bilateral arm restraints and protective equipment (i.e., padding on shoulders, arms, and legs). All areas of daily functioning were profoundly impacted by dangerous self-injury. Treatment: Fifteen bilateral ECT treatments resulted in excellent mood stabilization and reduction of self-injury to 19 attempts hourly, and maintenance ECT was pursued. The patient was able to return to developmentally-appropriate educational and social activities. Conclusion: ECT should be considered in the treatment algorithm of refractory cases of severe self-injury in autism.

Bøker, bok kapitler (11)

Vi ekskluderte totalt 11 bøker/ bok kapitler kapitler, 9 omtalte ECT og suicidalatitet, 1 omtalte suicidalitet og muligens ECT, og 1 selvskading og ECT hos barn/ungdom.

Bøker/bok kapitler, ECT og omtale av suicidalitet (N=9)	
Førsteforfatter og årstall	Tittel og sammendrag
Read 2013 (30)	Electroconvulsive therapy (create) Electroconvulsive therapy (ECT) involves passing sufficient electricity through the brain to cause a grand mal seizure. It is usually performed 6-12 times over a three- or four-week period. Although nowadays used mostly for depression, ECT was invented to treat 'schizophrenia', which remains the second most common diagnostic indicator for ECT. Other factors, however, are more predictive than diagnosis. Women, internationally, are about twice as likely to get ECT as men. Every administration of ECT causes loss of memory for the period surrounding the treatment. For some people the loss is persistent and covers a greater time span. For others the damage is permanent. Besides the fear and other psychological effects, short-term effects include headaches, muscular aches, drowsiness, weakness, nausea and anorexia. There is no evidence that ECT has any benefit lasting beyond a few days. It does not prevent suicide and, for a minority, may precipitate it. The short-term benefit gained by a small minority does not warrant the risks involved In other branches of medicine, a treatment with such an imbalance between risk and benefit would be deemed unethical
Kim 2012 (31)	Psychopharmacotherapy and electroconvulsive therapy The risk of suicide and suicidal behaviors increases dramatically in psychiatric populations. Among individuals with mood disorders, including unipolar major depression and bipolar disorder, the lifetime suicide risk is 15-20 times greater than the risk in the general U.S. population. Thus, it is of utmost importance that suicidal individuals receive treatment for underlying psychiatric disorders. Key concepts presented in this chapter include the following points. Treatment of suicide and suicidal behaviors is complex and multidisciplinary and includes aggressive pharmacotherapy in conjunction with a strong psychotherapeutic alliance with the affected individual. Medications to treat symptoms such as psychic pain, anxiety and turmoil, panic attacks, agitation, impulsiveness, aggression, and feelings of hopelessness can be extremely helpful in managing the patient with suicidal tendencies. *Good short-term and long-term data are lacking regarding the clinical effectiveness of psychiatric medications and electroconvulsive therapy (ECT) on suicidal behaviors, largely because data on suicidal behaviors are obtained through secondary analyses of treatment efficacy studies and meta analyses.* Despite this, lithium and the atypical antipsychotic agent clozapine appear to exert a positive effect on suicidal behaviors. Data are accruing for effects of the newer atypical antipsychotic agents and antiepileptic mood stabilizers on suicidal behaviors. Even though there is inconclusive evidence for improvement in suicide rates and suicidal behaviors with antidepressant treatment, antidepressants are still effective treatments for the affective disorders often underlying suicidal behaviors and have established benefit in the acute short and long term for patients with affective disorders. Close monitoring by the clinician and patient education, especially during initiation of therapy with an antidepressant medication, are critical to ensuring the safety of the suicidal patient treated with antidepressants. *Although data are limited as to the effects of ECT on suicide rates, ECT can be helpful for severe major depressive episodes accompanied by suicidal behavior, especially when a delay in treatment response would be life-threatening, such as for patients who are overtly psychotic, catatonic, or refusing to eat.*
Fink 2012 (32)	The responsible role for ECT in suicide prevention and treatment

	(from the chapter) In patients with high risk for suicide, treatment with medications is both slow and less effective compared to electroconvulsive therapy (ECT). Referral for ECT is an integral part of the management of patients considered to have a high risk of suicide. Monitoring with neuroendocrine measures offers opportunities for the independent assessment of suicidal risk and resolution. The stigma of ECT and the rejection of laboratory tests in clinical practice have unnecessarily increased the risk for death by suicide.
Barker 2011 (33)	ECT and informed consent (from the chapter) This chapter focuses, of necessity, on the potential for brain damage involved in ECT. After all, its brain-damaging was one of its attractive features for early American practitioners. For all who receive it, ECT produces memory loss around the time of the treatment, which may persist over a long period for many 'patients'. Also, as Johnstone found, the nature of the 'treatment' can be highly disturbing, generating feelings of humliation, failure, worthlessness and a powerful sense of being abused and assaulted. Any 'benefit' gained from ECT is likely to be short-lived, lasting only a few days (hence the need to repeat the procedure, ad nauseam). *Neither does it prevent suicide, as has often been claimed*. Suggested at the outset that the ethical problems associated with ECT are straightforward: if people wish to have such a 'treatment', however dubious its effectiveness and however dangerous its effects, they should be free to ask for it. The real ethical problems arise when we consider the role of professionals in responding to such requests; especially where they suggest ECT as a 'treatment option'.
Grunebaum 2010 (34)	Suicide prevention (from the chapter) In this chapter we attempt to review concisely the evidence regarding many different models of suicide prevention. We first briefly review the epidemiology, risk, and protective factors for suicide. Next, we review evidence on primary prevention efforts, which seek to reduce suicide rates by decreasing the development of suicidal risk in people and populations. Such efforts include public education, gatekeeper education, education of healthcare professionals, screening and treatment, and multi-level prevention programs. We next review the evidence regarding secondary prevention approaches, those designed to reduce repeat suicidal behavior in vulnerable groups. We discuss the evidence related to suicide prevention with pharmacotherapy, electroconvulsive therapy, and psychotherapies, as well as other social interventions such as telephone hotlines, community outreach, restrictions on the means of suicide, and issues related to media reporting. Tertiary prevention, which aims to reduce the long term effects of suicidal behavior, is reviewed with respect to use of safer medications, the importance of followup, and the identification of persons at risk. We then review evidence specifically related to suicide prevention in adolescents. The chapter concludes with a section on clinical suicide prevention advice for practitioners. Overall, we hope to convey that suicide is a behavioral phenomenon that is an outcome of a complex interplay of biopsychosocial stress and vulnerability and, therefore, that prevention should be similarly multi-faceted. There are many potentially modifiable risk and protective factors for suicide, and targeting as many as possible will have the best chance of reducing the overall risk.
Shorter 2007 (35)	Shock therapy: A history of electroconvulsive treatment in mental illness (from the jacket) Shock therapy is making a comeback today in the treatment of serious mental illness. Despite its reemergence as a safe and effective psychiatric tool, however, it continues to be shrouded by a longstanding negative public image, not least due to films such as the classic One Flew over the Cuckoo's Nest, where an inmate of a psychiatric clinic (played by Jack Nicholson) is subjected to electro-shock to curb his rebellious behavior. Beyond its vilification in popular culture, the stereotype of convulsive therapy as a dangerous and inhumane practice is fuelled by professional posturing and public misinformation. Electroconvulsive therapy, or ECT, has in the last

	thirty years been considered a method of last resort in the treatment of debilitating depression, suicidal ideation, and other forms of mental illness. Yet, ironically, its effectiveness in treating these patients would suggest it as a frontline therapy, bringing relief from acute symptoms and saving lives. In this book, Edward Shorter and David Healy trace the controversial history of ECT and other "shock" therapies. Drawing on case studies, public debates, extensive interviews, and archival research, the authors expose the myths about ECT that have proliferated over the years. By showing ECT's often life-saving results, Shorter and Healy endorse a point of view that is hotly contested in professional circles and in public debates, but for the nearly half of all clinically depressed patients who do not respond to drugs, this book brings much needed hope.
Raja 2007 (36)	Management of suicidal schizophrenic patients in a psychiatric emergency unit (from the chapter) The chapter discusses the management of psychotic patients with high suicide risk in the Emergency Room (ER) and in the Psychiatric Intensive Care Unit (PICU). In the ER, the evaluation of suicidality is the most important aspect of the psychiatric consultation. It must be systematic and accurate. Not realizing the true high risk of suicide may be frequent visiting patients with mild depressive symptoms, comorbid personality disorder, prominent negative signs, concomitant severe medical illness, alcohol or drug abuse, and very young people. The final decision on patient's admission should be based on a sound clinical evaluation of accurately collected data. Medical management is priority. In the PICU, every effort should be done to prevent any suicide attempt during the hospitalization. In the treatment of patients with acute suicidal risk, there is little room for antidepressants. The first need is to tranquillize the patient, to reduce his/her impulsivity, aggressiveness, agitation, excitement, anguish. Sleep is the most beneficial therapy. Electro-convulsive therapy, clozapine and lithium are the most effective treatment in preventing suicide of psychiatric patients. Before discharging the patients from hospital, clinicians should arrange an adequate therapeutic plan after discharge, agreed upon by the patient, his or her relatives, and the treating psychiatrist.
Flores 2006 (37)	Psychotic Depression (from the chapter) Psychotic depression is a relatively common psychiatric condition that affects up to 20% of patients with major depression. Psychotic depression appears distinct from nonpsychotic depression on the basis of noted differences in family psychiatric histories, with an increased risk of schizophrenia, bipolar affective disorder, and unipolar depression reported. Psychotic depression is also differentiated from nonpsychotic depression by the greater severity of depressive symptoms. Data thus far best support efficacy for the combination of an antidepressant and an antipsychotic or ECT in the treatment of psychotic depression. Data are limited on the utility of lithium augmentation in treatment-refractory psychotic depression. Recent findings suggest the possible utility of glucocorticoid receptor antagonists in the treatment of psychotic depression. In addition, studies have shown that psychotic depression is associated with a greater risk of relapse, suicide, mortality, and poor long-term psychosocial functioning as compared with nonpsychotic depression. Unfortunately, data also have been put forth suggesting that psychotic depression may be frequently underdiagnosed and undertreated. Such findings greatly underscore the importance of both distinguishing psychotic depression from nonpsychotic depression and improving the diagnostic criteria for and treatment of this condition.
Ghaziuddin 2013 (38)	ECT for mood disorders (from the chapter) In this chapter, the authors define treatment resistant mood disorders (TRM) *in youth*, the factors associated with treatment resistance (TR), the complications of TRM which includes academic and psychosocial failure, association with substance abuse, illness-continuation into adulthood, recurrence and relapse, and the

	risk of suicide and the role of electroconvulsive therapy (ECT). Historical and epidemiological perspectives are presented to underscore the existence of TRM and to compare the criteria used for different age groups when using ECT. Since there are no controlled trials of ECT for the treatment of mood disorders in youth, the authors stress the need for systematic, multi-center studies to identify and ensure optimum practice.
Bøker/bok kapitler om suicidalitet som muligens omtaler ECT (N=1)	
Simon 2012 (39)	The American Psychiatric Publishing textbook of suicide assessment and management (2nd ed.) (from the cover) A thorough understanding of suicide, risk assessment, and treatment is a required competency for psychiatrists. At the same time, the demands of managed care make suicide assessment more difficult and more fraught with risk, magnifying the clinician's need for a comprehensive and current resource. Surpassing the first edition in terms of structure, scope, and hands-on utility, this new edition of The American Psychiatric Publishing Textbook of Suicide Assessment and Management follows the natural sequence of events in evaluating and treating patients: assessment, major mental disorders, treatment, treatment settings, special populations, special topics, prevention, and the aftermath of suicide. The number of chapters has been increased, from 28 to 34. In addition, 22 new chapter authors were recruited for the second edition, representing nearly half of the 50 authors from the first edition, to present more diverse perspectives. Case scenario questions for self-study, along with an answer guide, have also been added. The result is a larger and more substantive text, one that addresses everything today's practitioner needs to know, from the basic biological mechanisms associated with suicide to the effects of Internet harassment. The American Psychiatric Publishing Textbook of Suicide Assessment and Management is essential reading for all physicians
Bøker/bok kapitler, omtale av ECT og selvskading (N=1)	
Wachtel (40) 2013	Kapitel: ECT for self-injurious behavior Bok: Electroconvulsive therapy in children and adolescents This chapter provides an overview of self-injurious behavior (SIB) *in youth* with intellectual disability (ID) and other forms of developmental disorders. These behaviors may be maintained by operant reinforcement and by concomitant psychiatric, medical, or genetic conditions. Several recent reports describe the successful use of electroconvulsive therapy (ECT) for the treatment of intractable SIB in children, adolescents, and adults with autism or ID. However, large-scale or controlled studies of such are currently lacking. Self-injury is further explored in relation to stereotypes, tics, and the repetitive movements of catatonia, leading to the proposal that self-injury appears to be an alternate sign of catatonia, with direct implications for effective treatment with ECT. Historical and modern evidence of self-injury as part of the catatonic spectrum is presented, including case presentations of intractable SIB, which was effectively treated with acute and maintenance ECT. Safety and ethical issues, caregiver perceptions, and vistas for future research are also reviewed in this chapter.

Master og doktorgradsavhandlinger (norske) (4)

Vi ekskluderte tre norske doktorgradsavhandlinger og en mastergrad.

Doktorgradsavhandlinger om ECT som muligens omfatter suicidalitet (N=3)	
Førsteforfatter og årstall	Tittel og sammendrag
Dybedal (41) 2015	Cognitive effects of electroconvulsive therapy in nondemented elderly depressed patients *Universitetet i Oslo, Psykologisk fakultet o*

Kessler (42) 2014	Electroconvulsive therapy for bipolar disorder depression: effects on depressive symptoms and cognitive function *Universitetet i Bergen, Medisinsk fakultet*
Jarosch-von Schweder (43) 2015	Use of electroconvulsive therapy in psychiatry *Universitetet i Trondheim, NTNU, Medisinsk fakultet*
Mastergradsoppgaver om suicidalitet som muligens omfatter ECT (N=1)	
Førsteforfatter og årstall	Tittel og sammendrag
Husabø og Riis (44) 2014	Interventions Targeting Suicide-Related Behavior In Depressed Adolescents: A Systematic Review *Universitetet i Bergen, Psykologisk fakultet*
	Sammendrag: Formålet med denne studien var å gjennomføre en systematisk kunnskapsoppsummering av indikative intervensjoner for suicidal atferd hos deprimert ungdom. Et annet formål var å vurdere resultatene opp mot Nasjonale retningslinjer for selvmordsforebygging i psykisk helsevern og Handlingsplan for forebygging av selvmord og selvskading. Vi utførte et omfattende søk i MEDLINE, EMBASE, PsycINFO og "Cochrane Central Register of Controlled Trials". Vi gjennomførte også et referansesøk i Web of Science og et manuelt søk i studienes referanselister. Vi inkluderte og ekskluderte studier hver for oss. Vi vurderte også inkluderte studiers kvalitet individuelt, og i tråd med Cochranes håndbok for systematiske kunnskapsoppsummeringer for intervensjoner. Vi inkluderte randomiserte kontrollerte studier som undersøkte effekten av indikative intervensjoner. Deltakerne i studiene måtte være i alderen 10 til 26 år, vise suicidal atferd og være diagnostisert som deprimerte eller være utredet som depressive. Vi identifiserte 18 relevante studier og kvaliteten på disse varierte. Kognitiv atferdsterapi og familiebasert terapi viste lovende resultater, og flertallet av studiene som undersøkte disse intervensjonene ble vurdert til å ha god kvalitet (få skjevheter). Resultatene våre var i tråd med de Nasjonale retningslinjene og Handlingsplanen. Imidlertid er det nødvendig med mer forskning for å etablere evidensbaserte intervensjoner som fokuserer på suicidal atferd hos deprimert ungdom.

Kommentarer til ekskluderte

Oversikt til Fink (1) virker tematisk sentralt men ble eksludert ettersom den ikke er systematisk. Dennne oversikten (1) gir uttrykk for at ECT bidrar vesentlig til både suicid forebygging og reduksjon av suicidraten. Eksluderte regiserdatastudier fra Danmark og England (se vedlegg 3) å kommer imidlertid frem til et annet resultat, ettersom de *ikke* stadfester reduksjon av mortalitet sekundært til ECT (12, 13). Fra Danmarks registerdatastudie rapporteres det også om økt selvmordsfare like etter ECT intervensjonen (12). De 16 identifiserte kasuistikkstudiene avspeiler klinisk praksis og gir inntrykk av at ECT kan være «livreddende» i prekære situasjoner. I tillegg indikerer disse kasustikkstudiene en klinisk praksis hvor suicidalitetsvurdering blir anvendt som både en indikator for alvorlighetsgrad av grunnlidelsen og som et eget indikasjonskriterium for ECT.

Referanseliste ekskluderte

1. Fink M, Kellner CH, McCall W. The role of ECT in suicide prevention. The Journal of ECT 2014;30(1):5-9.

2. Fink M. What was learned: studies by the consortium for research in ECT (CORE) 1997-2011. Acta Psychiatrica Scandinavica 2014;129(6):417-426.

3. Riva-Posse P, Hermida AP, McDonald WM. The role of electroconvulsive and neuromodulation therapies in the treatment of geriatric depression. Psychiatric Clinics of North America 2013;36(4):607-630.

4. Levy Y, Austin MP, Halliday G. Use of ultra-brief pulse electroconvulsive therapy to treat severe postnatal mood disorder. Australasian Psychiatry 2012;20(5):429-432.

5. Sienaert P. What we have learned about electroconvulsive therapy and its relevance for the practising psychiatrist. Canadian Journal of Psychiatry - Revue Canadienne de Psychiatrie 2011;56(1):5-12.

6. Gournellis R, Lykouras L. Psychotic (delusional) major depression in the elderly: A review. Current Psychiatry Reviews 2006;2(2):235-244.

7. Silverstone PH, Silverstone T. A review of acute treatments for bipolar depression. International Clinical Psychopharmacology 2004;19(3):113-124.

8. Swann AC. Long-term treatment in bipolar disorder. Journal of Clinical Psychiatry 2005;66(1):7-12.

9. Shoirah H, Hamoda HM. Electroconvulsive therapy in children and adolescents. Expert Review of Neurotherapeutics 2011;11(1):127-137.

10. Lin Z, He H, Zhang C, Wang Z, Jiang M, Li Q, et al. Influence of Val108/158Met COMT Gene Polymorphism on the Efficacy of Modified Electroconvulsive Therapy in Patients with Treatment Resistant Depression. Cell Biochem Biophys 2014.

11. Kellner CH, Fink M, Knapp R, Petrides G, Husain M, Rummans T, et al. Relief of Expressed Suicidal Intent by ECT: A Consortium for Research in ECT Study. The American Journal of Psychiatry 2005;162(5):977-982.

12. Munk-Olsen T, Laursen TM, Videbech P, Mortensen PB, Rosenberg R. All-cause mortality among recipients of electroconvulsive therapy: Register-based cohort study. The British Journal of Psychiatry 2007;190:435-439.

13. Hunt IM, Windfuhr K, Swinson N, Shaw J, Appleby L, Kapur N. Electroconvulsive therapy and suicide among the mentally ill in England: A national clinical survey. Psychiatry Research 2011;187(1-2):145-149.

14. Struglia F, Nistico R, Londrillo F, Rossi A. Electroconvulsive therapy in resistant depression: A case series of 25 patients. Journal of Psychopathology / Giornale di Psicopatologia 2013;19(2):160-163.

15. Harris SC, Robbins BV. Testosterone replacement in male patient with treatment-resistant depression and hypogonadism. Journal of Pharmacy Practice 2013;26 (3):345-346.

16. Rapinesi C, Serata D, Del Casale A, Simonetti A, Milioni M, Mazzarini L, et al. Successful and rapid response to electroconvulsive therapy of a suicidal patient with comorbid bipolar i disorder and histrionic personality disorder. Journal of ECT 2012;28(1):57-58.

17. Hausn P, Schneider A, Muller B, Koch HJ. Maintenance strategy with electro-convulsive treatment in severe chronic schizophrenia: Two case reports and review. [German]. Internistische Praxis 2012;52(4):799-805.

18. Omprakash TM, Surender P. Prolonged apnea following modified electroconvulsive therapy with suxamethonium. Indian Journal of Psychological Medicine 2011;33(2):191-193.

19. Kobeissi J, Aloysi A, Tobias K, Popeo D, Kellner CH. Resolution of severe suicidality with a single electroconvulsive therapy. The Journal of ECT 2011;27(1):86-88.

20. Jayaraman H, Lee D. Delayed encephalopathy from carbon-monoxide poisoning: Can it be precipitated by electro convulsive therapy (ECT)? Asian Journal of Psychiatry 2011;4:S69.

21. Berg JE. Electroconvulsive treatment of a patient with Parkinson's disease and moderate depression. Mental Illness 2011;3(1):e3.

22. Zaidner E, Sewell R, Murray E, Schiller A, Price BH, Cunningham MG. New-onset dissociative disorder after electroconvulsive therapy. The Journal of ECT 2010;26(3):238-241.

23. Virit O, Altindag A, Akcali A, Bulut M, Savas HA. Effective treatment with electroconvulsive therapy of three cases with Parkinson disease, psychosis and depression. Anadolu Psikiyatri Dergisi 2010;11(1):79-82.

24. Bjerre J, Fontenay C. [Ketamine in melancholic depression]. Ugeskrift for Laeger 2010;172(6):460-461.

25. Yeh Y-W, Kuo S-C, Chen C-Y, Huang S-Y. Hyperventilation with acute respiratory alkalosis veils an unusual suicidal attempt. Progress in Neuro-Psychopharmacology & Biological Psychiatry 2009;33(8):1555-1556.

26. Keks NA, Hill C, Sundram S, Graham A, Bellingham K, Dean B, et al. Evaluation of treatment in 35 cases of bipolar suicide. Australian and New Zealand Journal of Psychiatry 2009;43(6):503-508.

27. van Niel MC, Hegeman JM, van Megen HJ. [Electroconvulsive therapy in depressed adolescents]. Nederlands Tijdschrift voor Geneeskunde 2007;151(32):1765-1769.

28. Abdi S, Haruo A, Bloomstone J. Electroconvulsive therapy for neuropathic pain: a case report and literature review. Pain Physician 2004;7(2):261-263.

29. Wachtel LE, Contrucci-Kuhn SA, Griffin M, Thompson A, Dhossche DM, Reti IM. ECT for self-injury in an autistic boy. European Child and Adolescent Psychiatry 2009;18(7):458-463.

30. Read J, Bentall R, Johnstone L, Fosse R, Bracken P. Electroconvulsive therapy. I: Models of madness: Psychological, social and biological approaches to psychosis. 2nd. New York, NY: Routledge/Taylor & Francis Group; US; 2013. s. 90-104.

31. Kim HF, Chen F, Yudofsky SC. Psychopharmacotherapy and electroconvulsive therapy. I: The American Psychiatric Publishing textbook of suicide assessment and management. 2nd. Arlington, VA: American Psychiatric Publishing, Inc ; US; 2012. s. 211-231.

32. Fink M. The responsible role for ECT in suicide prevention and treatment. I: Suicide from a global perspective: Risk assessment and management. Hauppauge, NY: Nova Science Publishers; US; 2012. s. 113-118.

33. Barker P. ECT and informed consent. I: Mental health ethics: The human context. New York, NY: Routledge/Taylor & Francis Group; US; 2011. s. 169-179.

34. Grunebaum MF, Soleimani L. Suicide prevention. I: Clinical manual of prevention in mental health. Arlington, VA: American Psychiatric Publishing, Inc ; US; 2010. s. 211-242.

35. Shorter E, Healy D. Shock therapy: A history of electroconvulsive treatment in mental illness. Piscataway, NJ: Rutgers University Press; US; 2007.

36. Raja M. Management of suicidal schizophrenic patients in a psychiatric emergency unit. I: Suicide in schizophrenia. Hauppauge, NY: Nova Biomedical Books; US; 2007. s. 259-274.

37. Flores BH, Schatzberg AF. Psychotic Depression. I: The American Psychiatric Publishing textbook of mood disorders. Arlington, VA: American Psychiatric Publishing, Inc ; US; 2006. s. 561-571.

38. Ghaziuddin N. ECT for mood disorders. I: Electroconvulsive therapy in children and adolescents. New York, NY: Oxford University Press; US; 2013. s. 161-190.

39. Simon RI, Hales RE. The American Psychiatric Publishing textbook of suicide assessment and management (2nd ed.). I: The American Psychiatric Publishing textbook of suicide assessment and management (2nd ed). Arlington, VA: American Psychiatric Publishing, Inc; 2012. s. xxv, 744.

40. Wachtel LE, Dhossche DM. ECT for self-injurious behavior. I: Electroconvulsive therapy in children and adolescents. New York, NY: Oxford University Press; US; 2013. s. 247-280.

41. Dybedal GS. Cognitive effects of electroconvulsive therapy in nondemented elderly depressed patients. Oslo: Unipub; 2015.

42. Kessler U. Electroconvulsive therapy for bipolar disorder depression: effects on depressive symptoms and cognitive function. [Bergen]: University of Bergen; 2014.

43. Jarosch-von Schweder L. Use of electroconvulsive therapy in psychiatry. Trondheim: Norges teknisk-naturvitenskapelige universitet; 2015.

44. Husabø IE, Riis K. Interventions Targeting Suicide-Related Behavior In Depressed Adolescents: A Systematic Review. Bergen: Det psykologiske fakultetet; 2014