

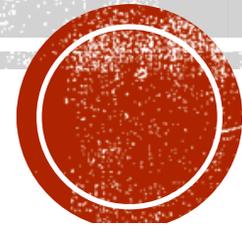
**1<sup>er</sup> Congrès**  
**Société Francophone**  
de **Psychogériatrie** et de **Psychiatrie**  
de la **Personne Âgée [SF3PA]**

34<sup>ème</sup> Congrès de la Société de Psychogériatrie de Langue Française (SPLF)

# QUELLE EST LA PLACE DE L'ECT EN PSYCHIATRIE DE LA PERSONNE ÂGÉE?

20 septembre 2018

Dr A. Yroni



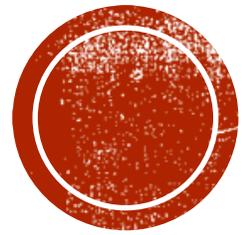
- **Pas de conflit d'intérêt sur le sujet**



# PLAN

- Aspects généraux
- Spécificités des ECT personnes âgées
- Lien avec pathologie neuro dégénérative?





# ASPECTS GÉNÉRAUX



# HISTORIQUE

## Une thérapie ancienne ...

- Evolution des « thérapies de chocs »
- Années 30 : BINI & CERLETTI
- Stimulation bilatérale : les abattoirs de Rome

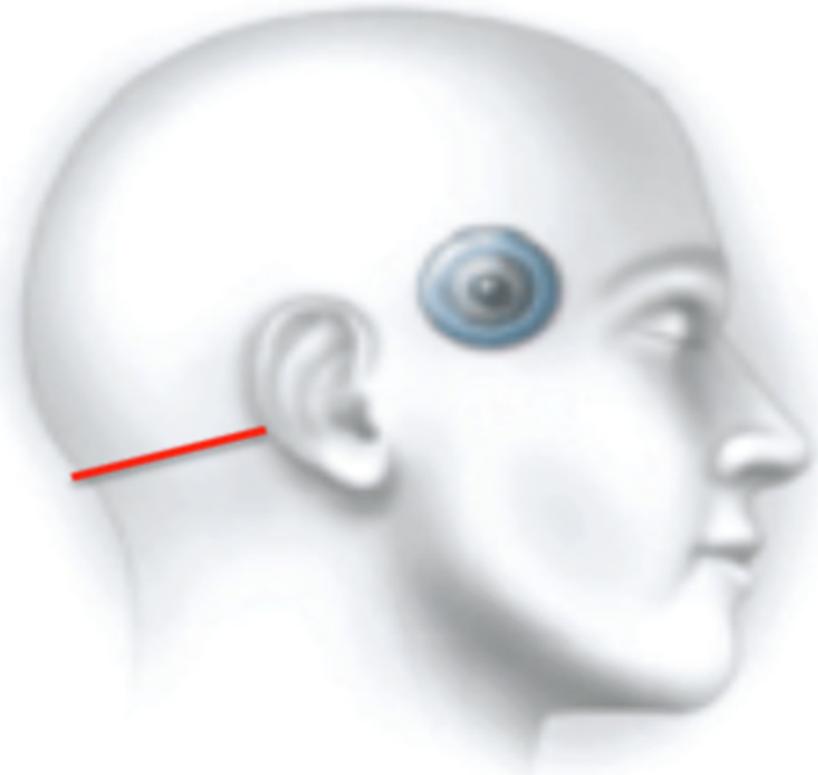


# INDICATIONS

- Episode dépressif caractérisé :
  - Intensité sévère
  - Caractéristiques mélancoliques et/ou psychotiques
  - Résistance au traitement
  - Altération majeure de l'état général
  - Risque suicidaire élevé
  - Désir du patient
- Syndrome catatonique
- Schizophrénie Résistance
- Manie Résistante



# MODALITÉS



**Bitemporal**



**Right unilateral**



**Bifrontal**



# EFFICACITÉ DANS L'EDC

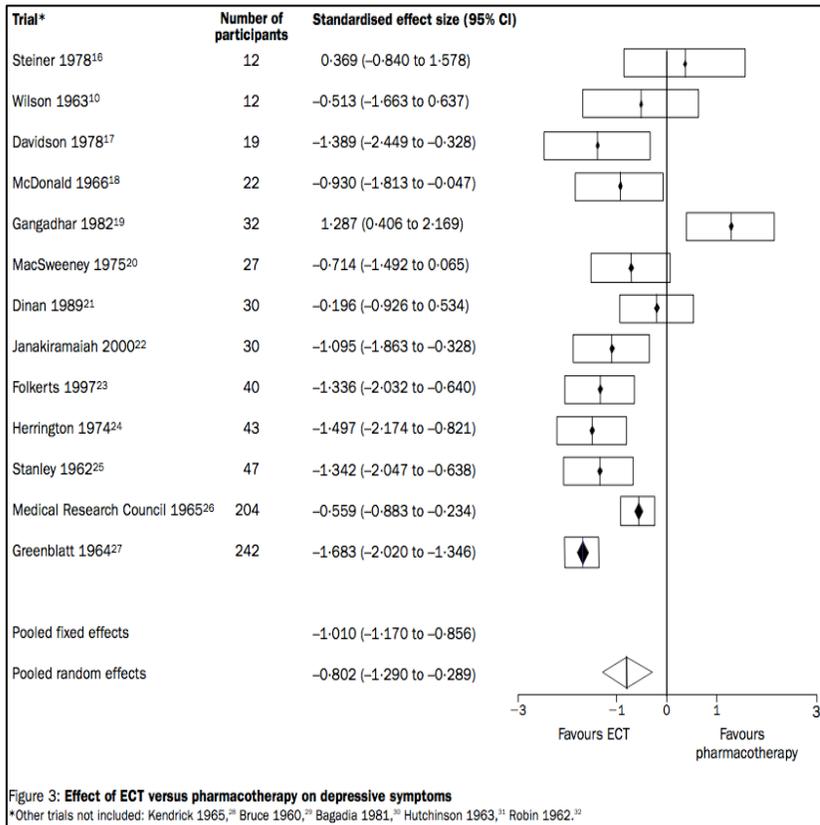
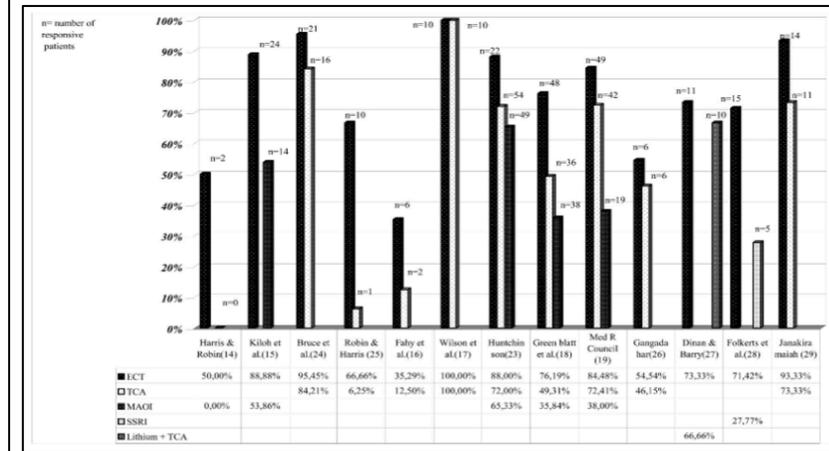


Figure 3: Effect of ECT versus pharmacotherapy on depressive symptoms  
 \*Other trials not included: Kendrick 1965,<sup>28</sup> Bruce 1960,<sup>29</sup> Bagadia 1981,<sup>30</sup> Hutchinson 1963,<sup>31</sup> Robin 1962.<sup>32</sup>

- Preuves de l'efficacité versus Pharmacothérapie dans l'EDC
- Chances de réponse avec l'ECT:
  - X 4 / Pharmacothérapie**  
(OR 3,72 ; 95% IC, 2,60 – 5,32)
  - X 3 / Imipraminique  
(OR 2,99 ; 95% IC, 1,91 – 4,71)
  - X 6 / IMAO  
(OR 6,13 ; 95% IC, 3,82 – 9,83)



UK ECT Review Group  
 Lancet 2003, Pagnin et al.  
 J ECT 2004.



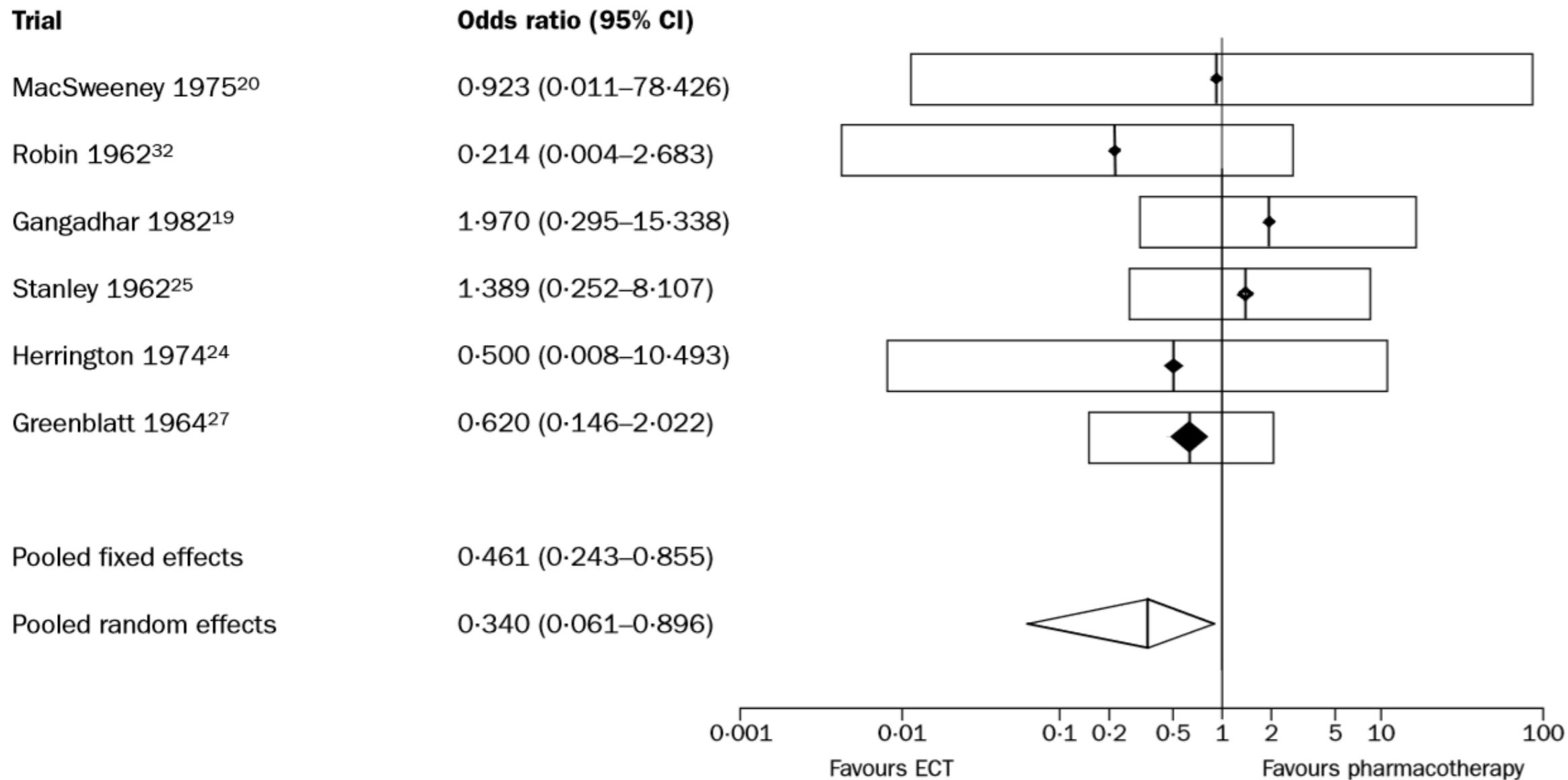
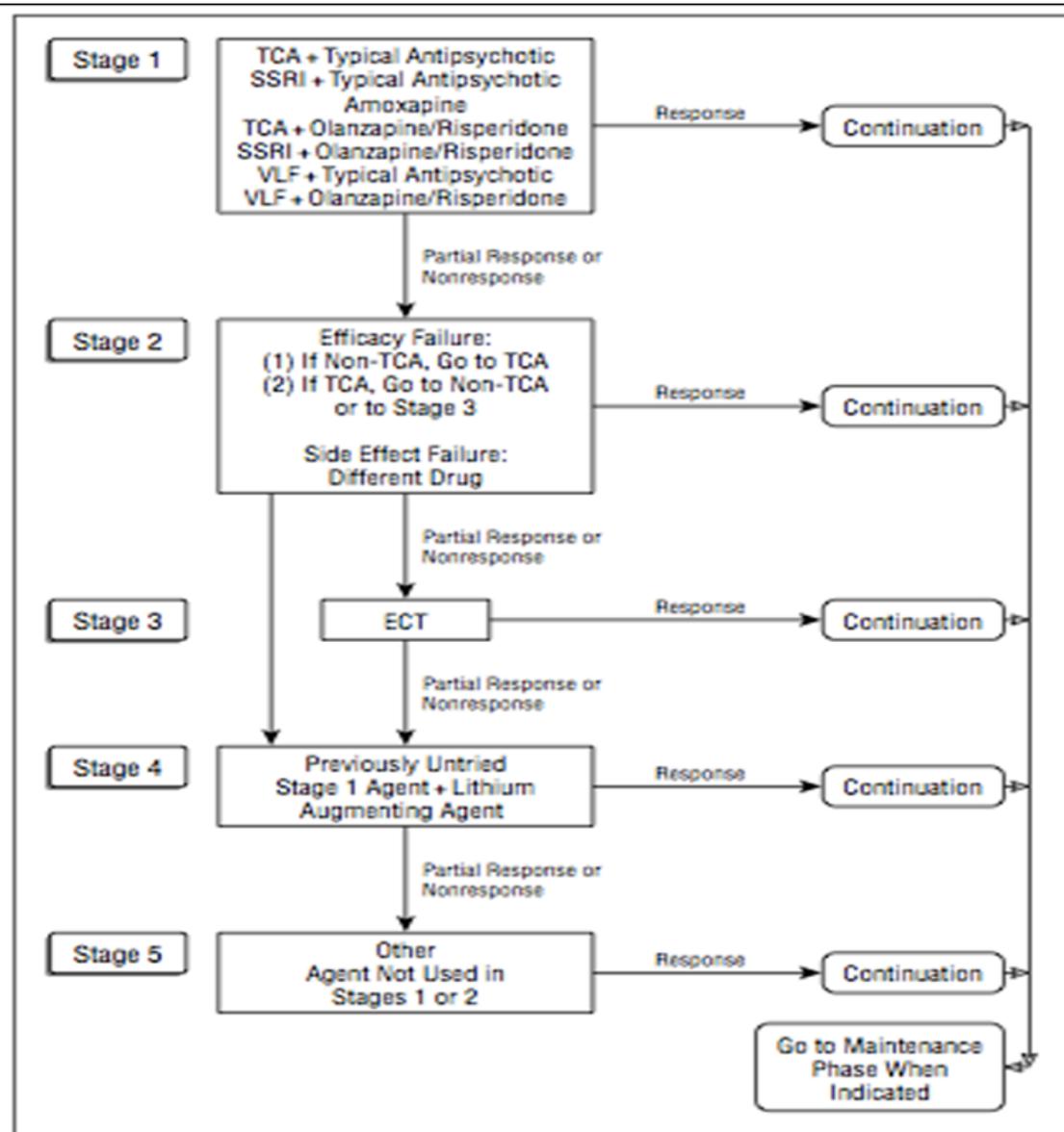
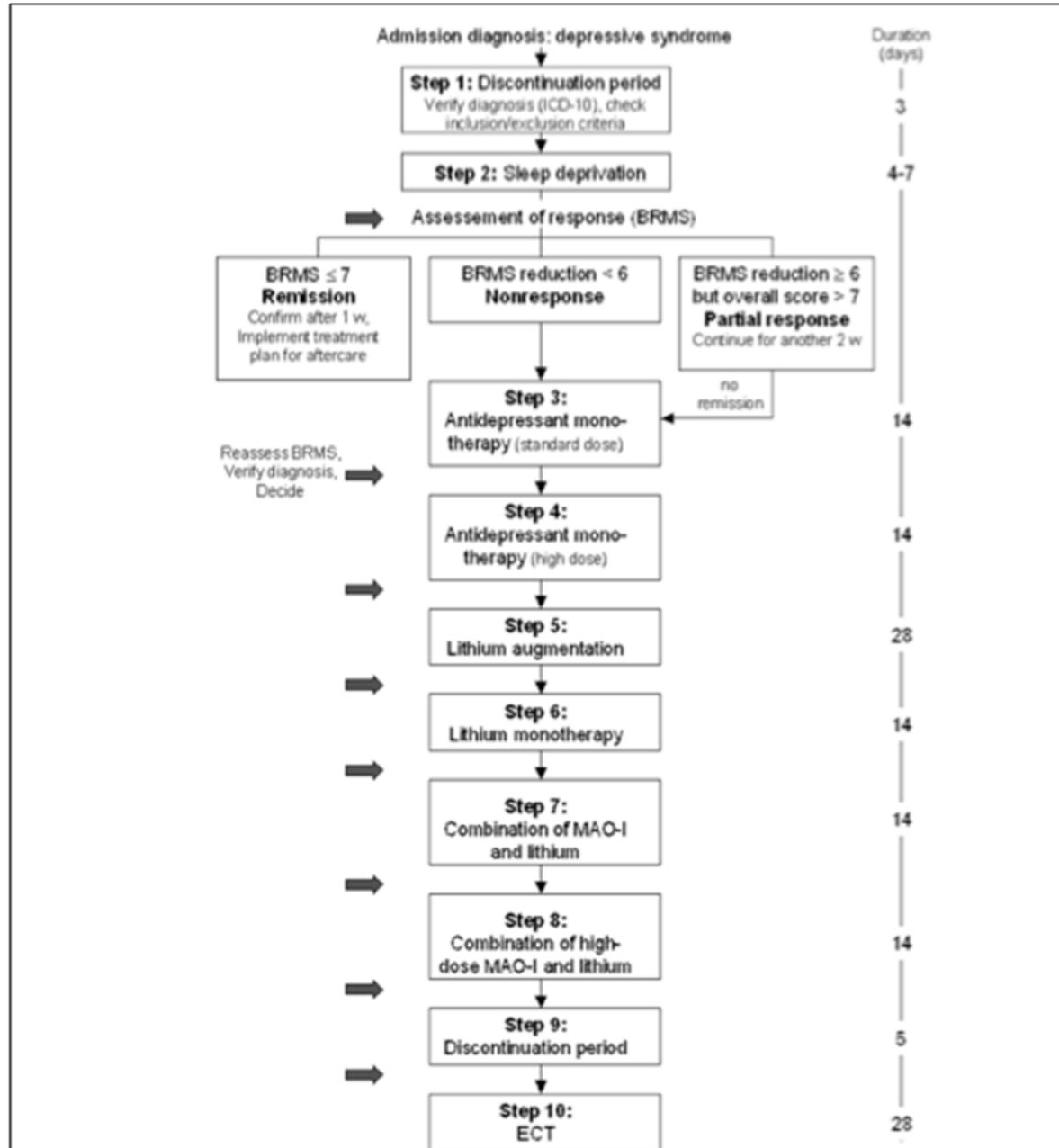


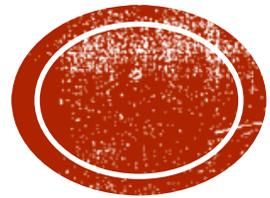
Figure 4: **Effect of ECT versus pharmacotherapy on withdrawal from trial**



**Figure 2.** Strategies for the treatment of psychotic major depressive disorder. ECT indicates electroconvulsive therapy; SSRI, selective serotonin reuptake inhibitor; TCA, tricyclic antidepressant; VLF, venlafaxine. This figure is published with permission from the Texas Department of Mental Health and Mental Retardation and is part of a state-funded project.



**FIGURE 1.** Overview of the SSTR for inpatients with depression. For each of the treatment steps 3 to 10, the decision process was applied as shown for step 2.



# SPÉCIFICITÉS PERSONNES ÂGÉES

# FACTEURS PRÉDICTIFS CLINIQUES

BJPsych

The British Journal of Psychiatry (2018)  
212, 71–80. doi: 10.1192/bjp.2017.28

## Review article

### Prediction of electroconvulsive therapy response and remission in major depression: meta-analysis

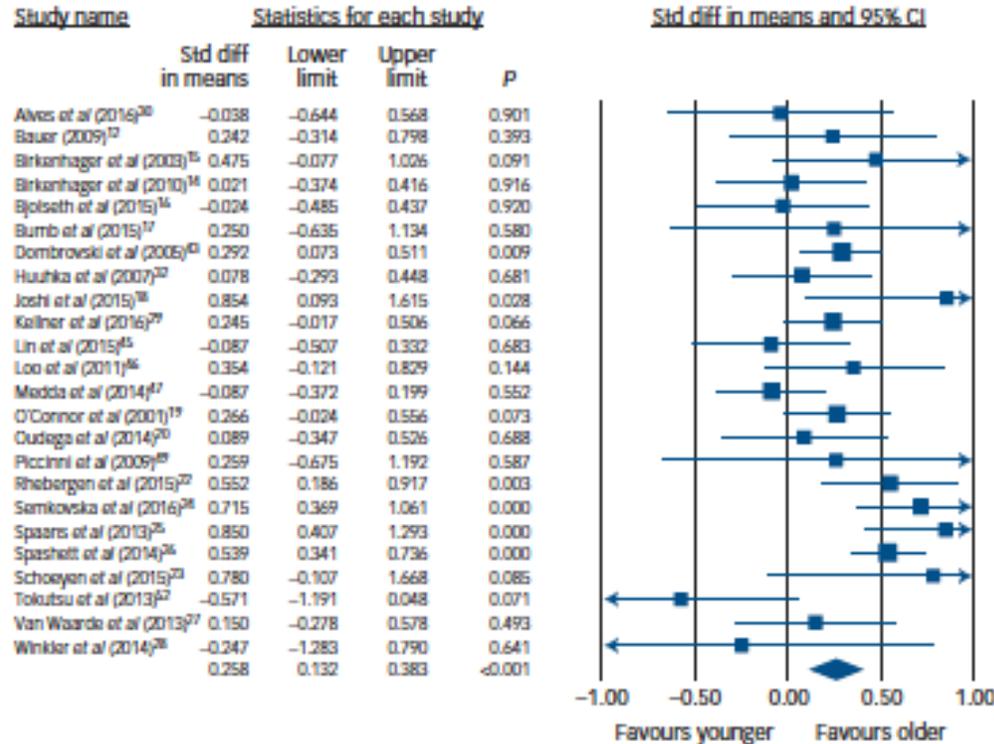
Linda van Diermen, Seline van den Ameele, Astrid M. Kamperman, Bernard C.G. Sabbe, Tom Vermeulen,  
Didier Schrijvers and Tom K. Birkenhäger



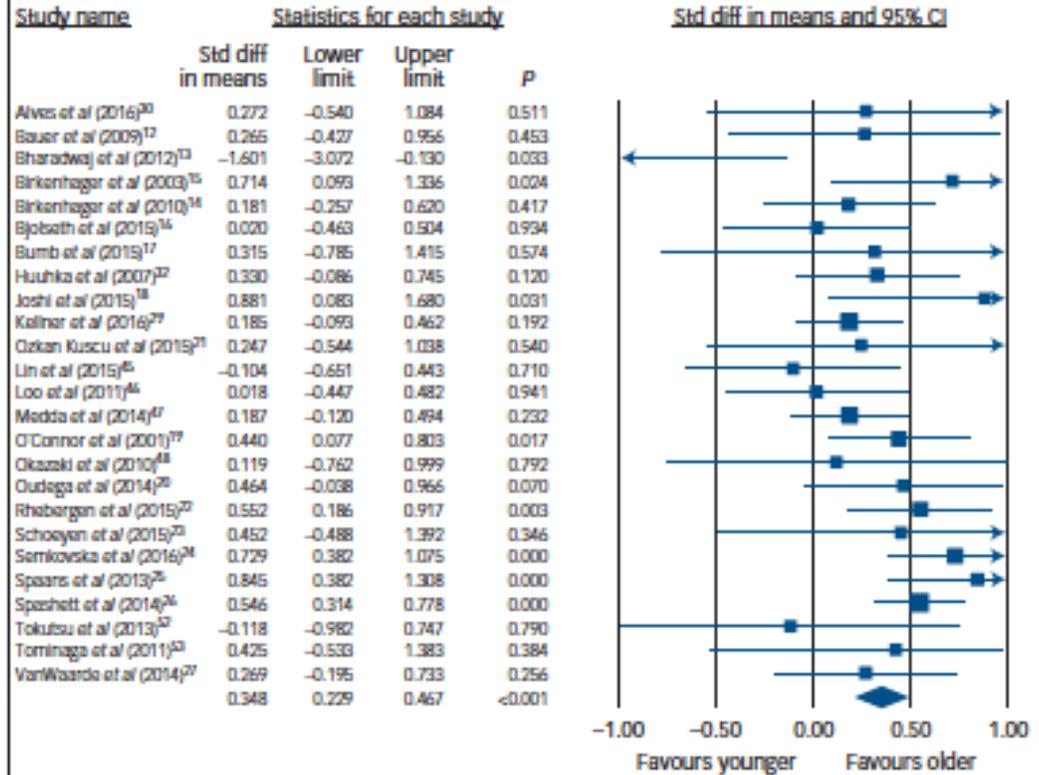
# FACTEURS PRÉDICTIFS CLINIQUES

Age

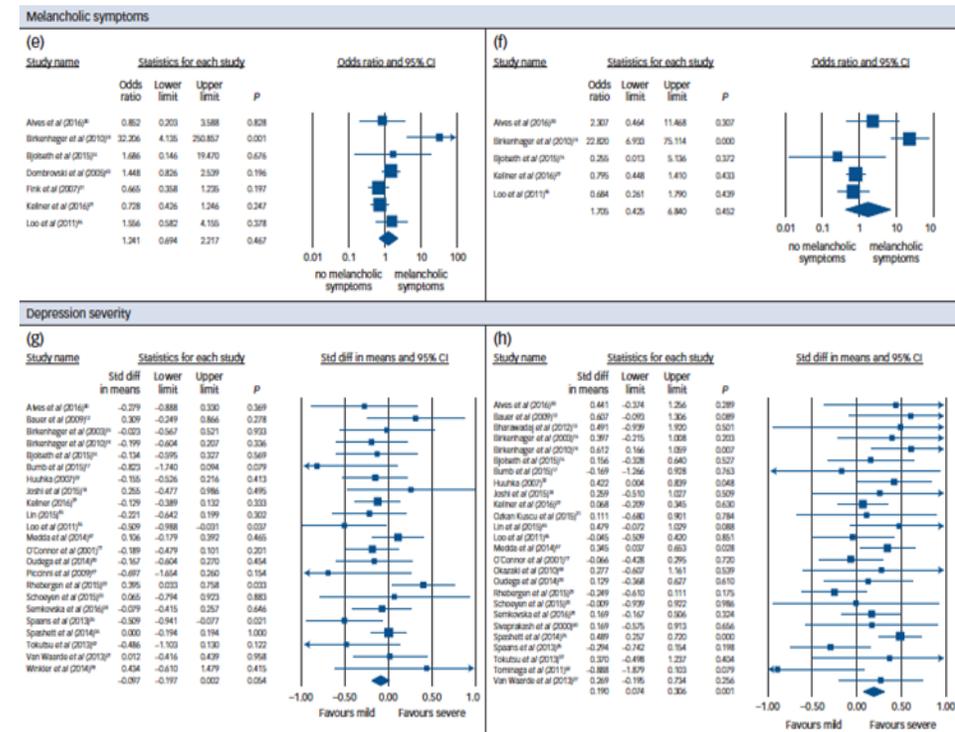
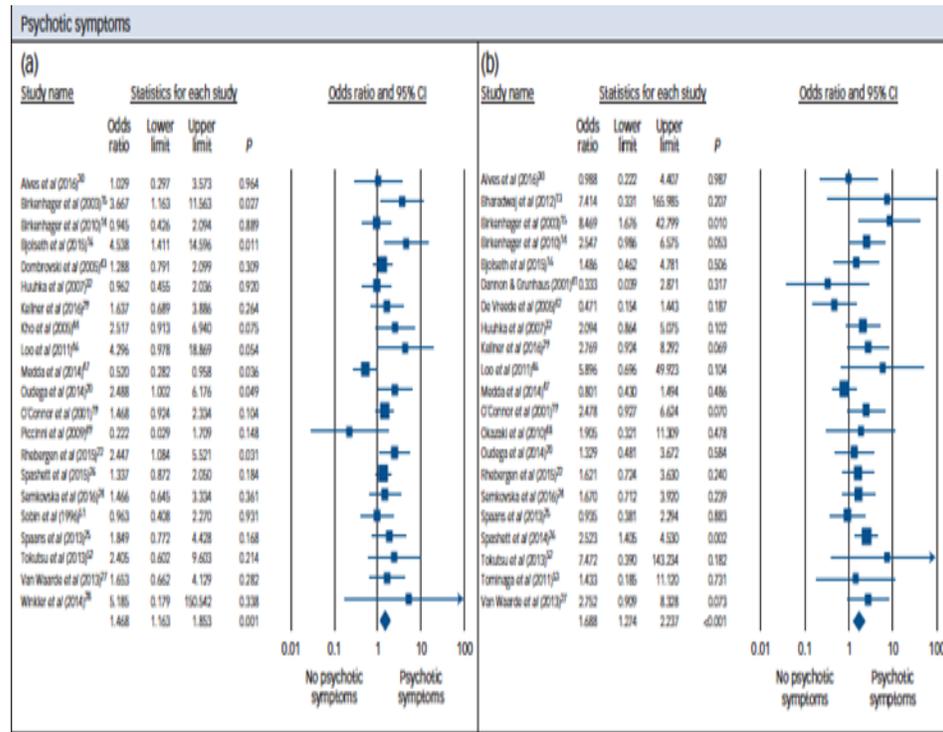
(c)



(d)



# FACTEURS PRÉDICTIFS CLINIQUES



# FACTEURS PRÉDICTIFS CLINIQUES

- LOD et EOD: symptômes psychotiques+++réponses
- EOD: durée de l'épisode court
- LOD>EOD: taux de réponses



## Speed of remission in elderly patients with depression: electroconvulsive therapy v. medication

Harm-Pieter Spaans, Pascal Sienaert, Filip Bouckaert, Julia F. van den Berg, Esmée Verwijk, King H. Kho, Max L. Stek and Rob M. Kok

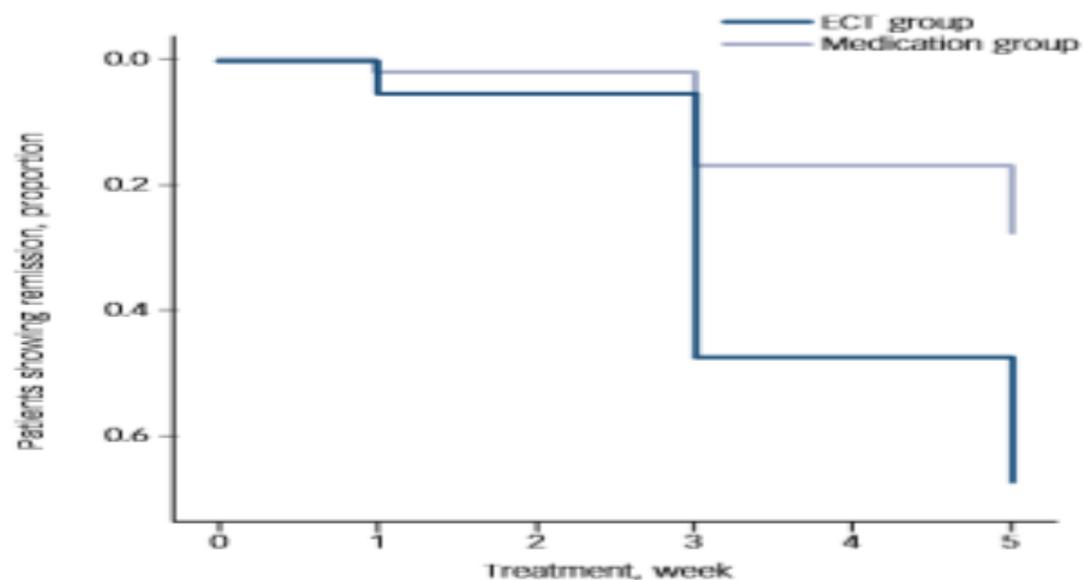


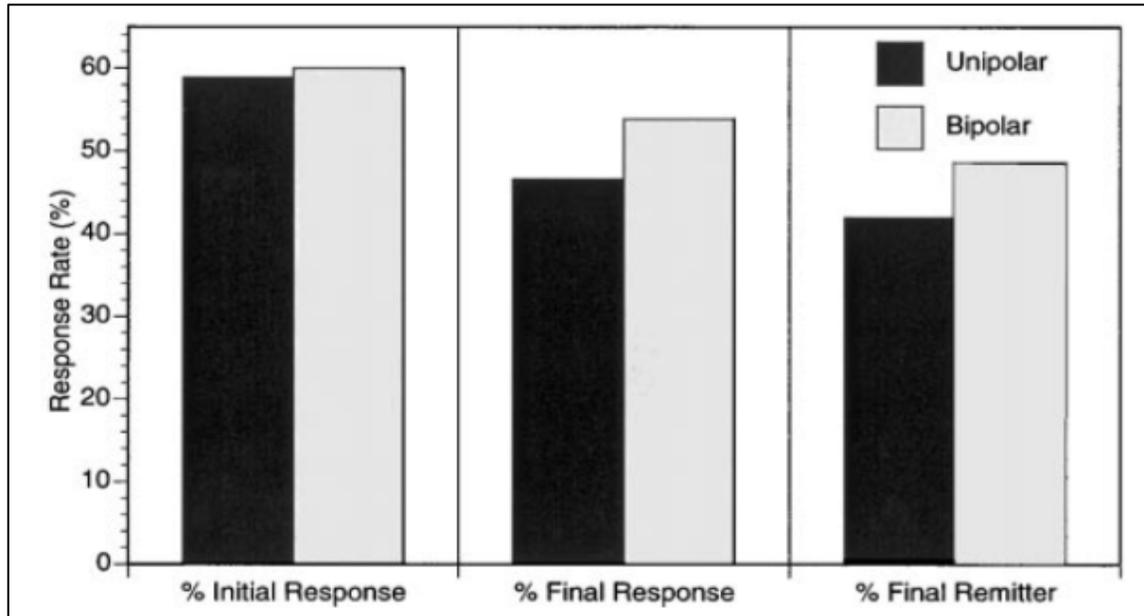
Fig. 2 Cox regression hazard ratio plot for the electroconvulsive therapy (ECT) v. medication group.

## INTÉRÊT ECT PERSONNES ÂGÉES

- Temps moyen pour obtenir une rémission: 3.1 semaines (s.d.=1.1) groupe ECT et 4.0 semaines (s.d.=1.0) groupes TTT médicamenteux
- Le hazard ratio ajusté pour la rémission à 5 Sem. (ECT v. pharmaco) est de 3.4 (95% CI 1.9–6.2).



# DÉPRESSION UNIPOLAIRE VERSUS BIPOLAIRE



- Pas de différence concernant la réponse entre UP et BP
- Réponse significativement plus rapide dans les formes BP (quels que soient les paramètres de stimulation utilisés, ou le nombre d'épisodes antérieurs).

Daly et al. Bipolar Disorders 2001  
Dierrkx et al. Bipolars disorders 2012

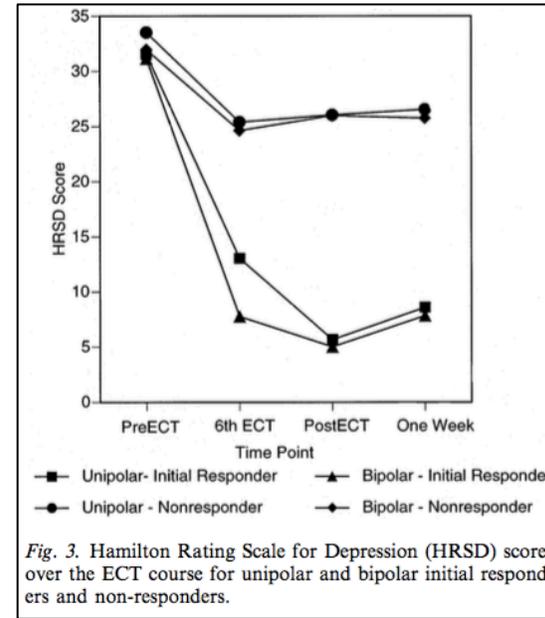


Fig. 3. Hamilton Rating Scale for Depression (HRSD) scores over the ECT course for unipolar and bipolar initial responders and non-responders.

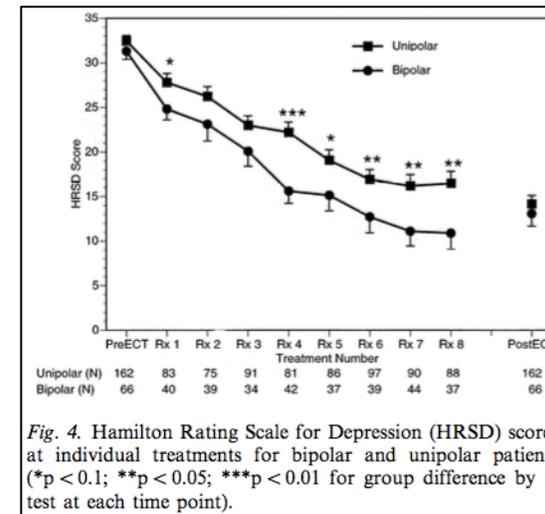
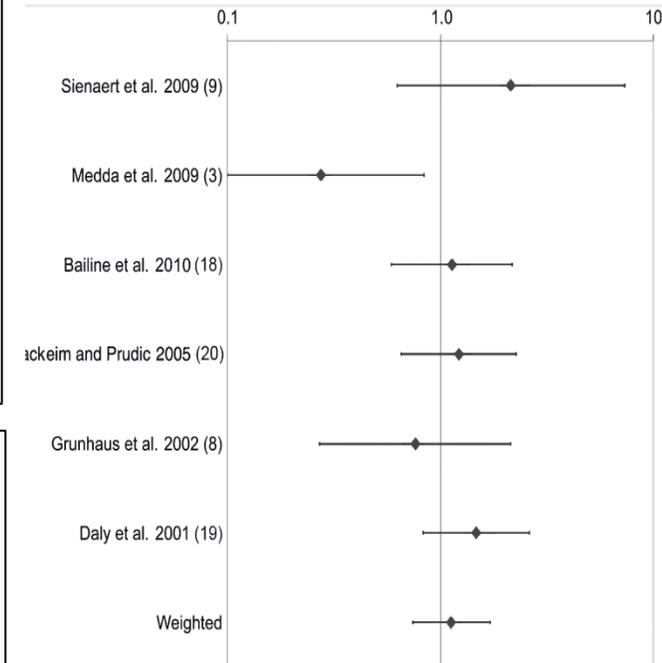


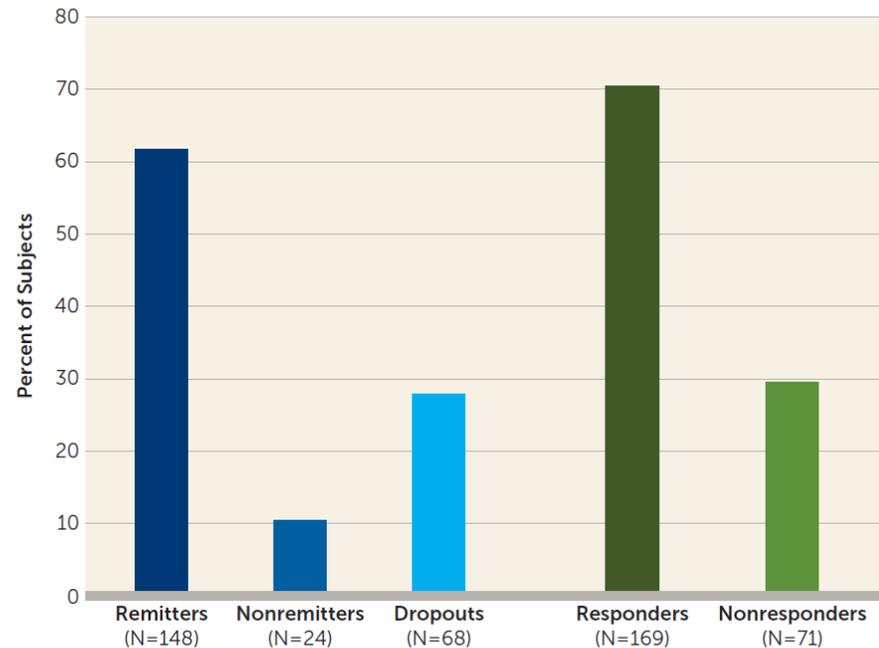
Fig. 4. Hamilton Rating Scale for Depression (HRSD) scores at individual treatments for bipolar and unipolar patients (\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 for group difference by t-test at each time point).



# Right Unilateral Ultrabrief Pulse ECT in Geriatric Depression: Phase 1 of the PRIDE Study

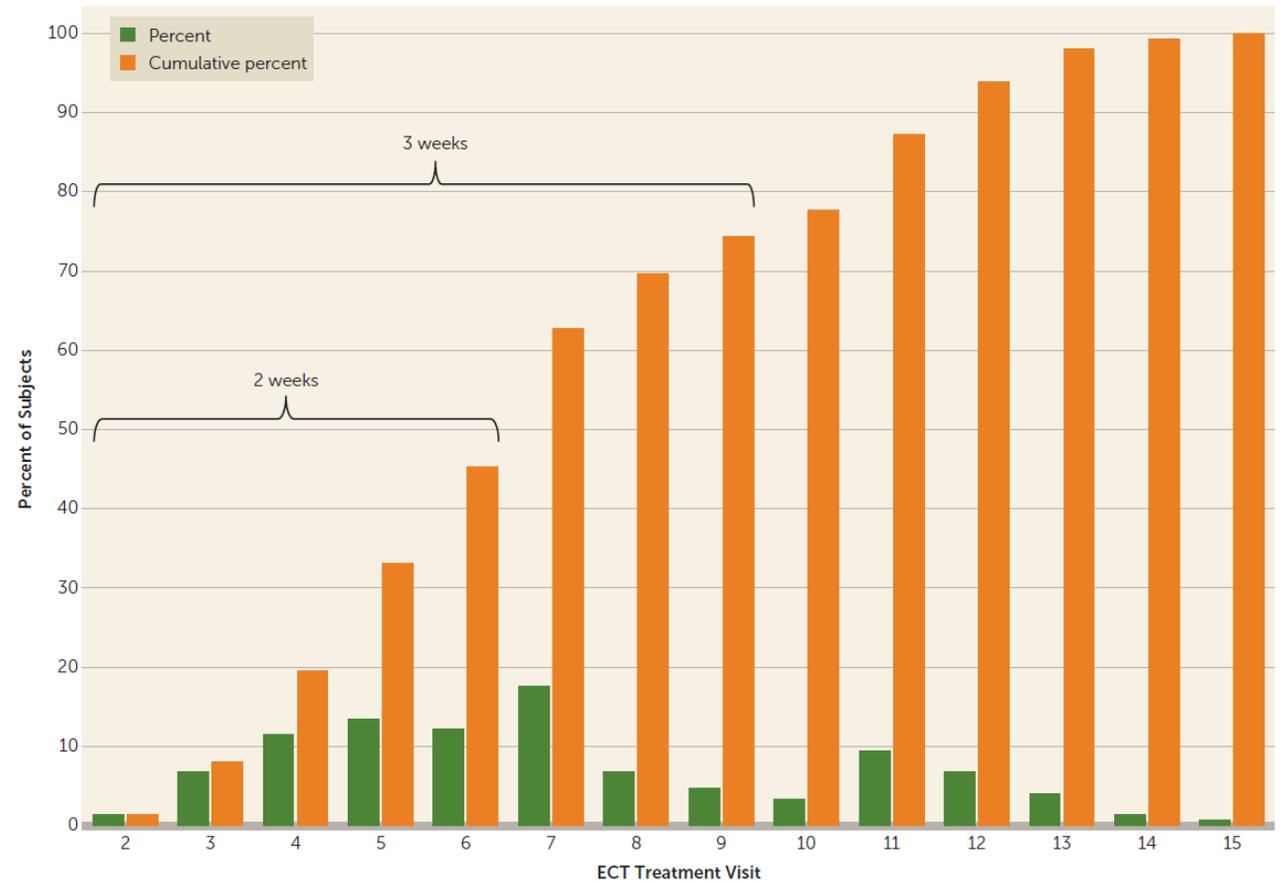
Charles H. Kellner, M.D., Mustafa M. Husain, M.D., Rebecca G. Knapp, Ph.D., W. Vaughn McCall, M.D., M.S., Georgios Petrides, M.D., Matthew V. Rudorfer, M.D., Robert C. Young, M.D., Shirlene Sampson, M.D., Shawn M. McClintock, Ph.D., Martina Mueller, Ph.D., Joan Prudic, M.D., Robert M. Greenberg, M.D., Richard D. Weiner, M.D., Ph.D., Samuel H. Bailine, M.D., Peter B. Rosenquist, M.D., Ahmad Raza, M.D., Ph.D., Styliani Kaliora, M.D., Vassilios Latoussakis, M.D., Kristen G. Tobias, M.A., Mimi C. Briggs, B.A., Lauren S. Liebman, B.A., Emma T. Geduldig, B.A., Abeba A. Teklehaimanot, M.S., Sarah H. Lisanby, M.D., the CORE/PRIDE Work Group

**FIGURE 1. Remission, Response, and Dropout in a Study of ECT and Venlafaxine in Geriatric Depression<sup>a</sup>**



<sup>a</sup> Remission was defined as having a score  $\leq 10$  on the 24-item Hamilton Depression Rating Scale (HAM-D) on two consecutive ratings; response was defined as having at least a 50% decrease in HAM-D score from baseline to last assessment.

**FIGURE 3. Speed of Remission Among Remitted Patients (N=148) in a Study of ECT and Venlafaxine in Geriatric Depression**



# A Novel Strategy for Continuation ECT in Geriatric Depression: Phase 2 of the PRIDE Study

Charles H. Kellner, M.D., Mustafa M. Husain, M.D., Rebecca G. Knapp, Ph.D., W. Vaughn McCall, M.D., M.S., Georgios Petrides, M.D., Matthew V. Rudorfer, M.D., Robert C. Young, M.D., Shirlene Sampson, M.D., Shawn M. McClintock, Ph.D., Martina Mueller, Ph.D., Joan Prudic, M.D., Robert M. Greenberg, M.D., Richard D. Weiner, M.D., Ph.D., Samuel H. Bailine, M.D., Peter B. Rosenquist, M.D., Ahmad Raza, M.D., Ph.D., Styliani Kaliora, M.D., Vassilios Latoussakis, M.D., Kristen G. Tobias, M.A., Mimi C. Briggs, B.A., Lauren S. Liebman, B.A., Emma T. Geduldig, B.A., Abeba A. Teklehaimanot, M.S., Mary Dooley, M.S., Sarah H. Lisanby, M.D., the CORE/PRIDE Work Group

FIGURE 1. Longitudinal Trajectory of Modeled Hamilton Depression Rating Scale (HAM-D) Score Least Squares Means in a Study of Continuation ECT in Geriatric Depression<sup>a</sup>

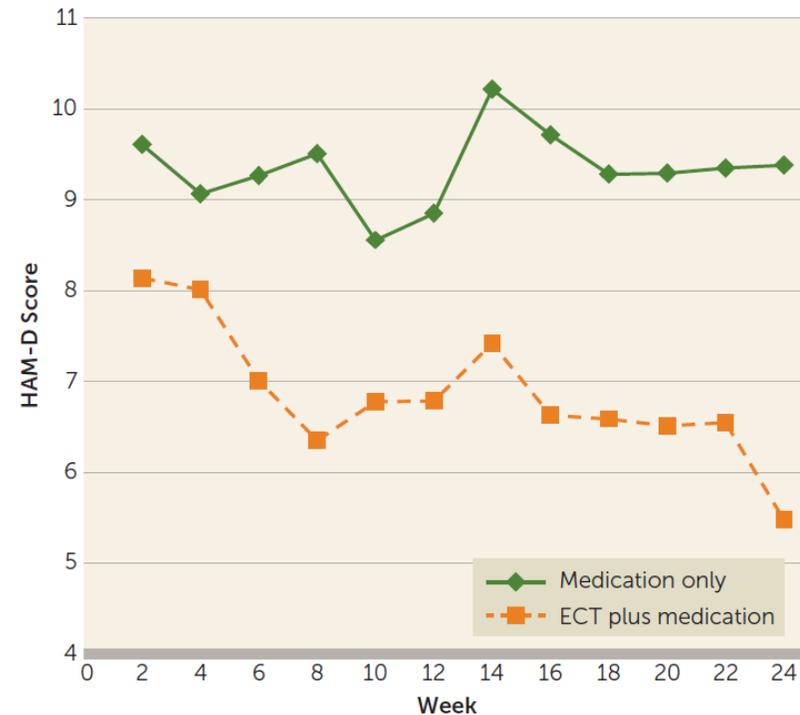
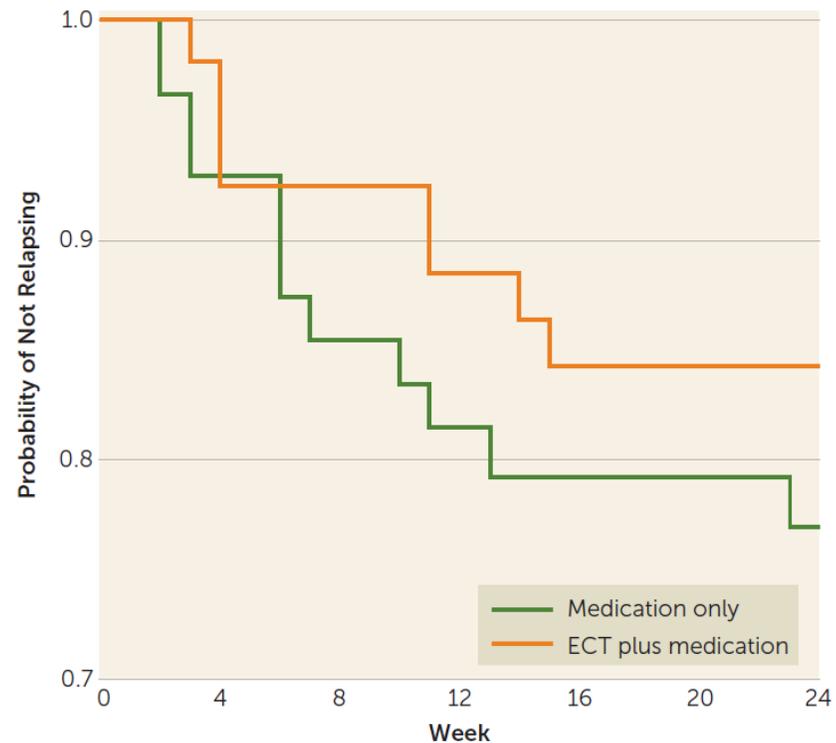


FIGURE 2. Time to Relapse for Patients in the ECT Plus Medication and Medication Only Treatment Arms in a Study of Continuation ECT in Geriatric Depression<sup>a</sup>



# QUALITÉ DE VIE

SF-36 T-SCORE	Treatment*Time p-value	Week 24 adjusted							BASELINE				
		PHARM		STABLE + PHARM		DIFFERENCE			PHARM		STABLE + PHARM		DIFFERENCE
		Mean	(SE)	Mean	(SE)	Mean	(95% CI)	p-value	Mean	(SE)	Mean	(SE)	Mean (95% CI)
<b>PHYSICAL</b>													
Physical Component Score (PCS) <sup>a</sup>	< 0.0001	44.4	(1.2)	51.3	(1.2)	-7.0	(-10.4, -3.5)	0.0001	45.3	(0.8)	44.5	(1.1)	0.8 (-1.8,3.4)
Physical Health Factor T Score	0.0127	44.1	(1.4)	49.0	(1.3)	-4.9	(-8.7, -1.1)	0.0125	49.1	(1.2)	48.5	(1.4)	0.7 (-3.0,4.3)
Bodily Pain (BP)	0.0361	48.4	(1.5)	52.1	(1.4)	-3.7	(-7.9, 0.4)	0.0777	49.4	(1.2)	48.4	(1.5)	1.1 (-2.8,4.9)
General Health (GH)	0.0006	43.9	(1.6)	52.3	(1.5)	-8.4	(-12.7, -4.1)	0.0002	48.8	(1.0)	49.3	(1.0)	-0.5 (-3.3,2.3)
Role Physical (RP)	< 0.0001	40.9	(1.5)	49.6	(1.4)	-8.7	(-12.7, -4.6)	< 0.0001	42.3	(1.2)	39.2	(1.5)	3.1 (-0.8,6.9)
Physical Functioning (PF)	0.0057	41.0	(1.6)	46.7	(1.6)	-5.7	(-10.1, -1.2)	0.0133	43.2	(1.3)	42.4	(1.7)	0.9 (-3.2,5.1)
<b>MENTAL</b>													
Mental Component Score (MCS) <sup>a</sup>	< 0.0001	45.3	(1.5)	53.5	(1.4)	-8.2	(-12.2, -4.2)	0.0001	41.3	(0.9)	40.5	(1.0)	0.8 (-1.9,3.6)
Mental Health Factor T Score	0.0292	47.6	(2.0)	54.4	(1.9)	-6.7	(-12.3, -1.2)	0.0174	35.6	(1.5)	34.5	(1.5)	1.1 (-3.2,5.3)
Mental Health (MH)	0.0086	47.0	(1.6)	54.2	(1.6)	-7.2	(-11.6, -2.7)	0.0017	39.7	(1.2)	37.4	(1.2)	2.3 (-1.1,5.7)
Role Emotional (RE)	0.0006	42.8	(1.7)	50.4	(1.6)	-7.6	(-12.3, -3.0)	0.0016	35.0	(1.4)	32.1	(1.6)	2.9 (-1.3,7.1)
Vitality (VT)	0.0108	47.8	(1.7)	54.5	(1.7)	-6.7	(-11.4, -2.0)	0.0061	44.3	(1.1)	45.0	(1.2)	-0.6 (-3.8,2.5)
Social Functioning (SF)	0.0051	44.7	(1.5)	53.3	(1.4)	-8.6	(-12.7, -4.5)	< 0.0001	35.1	(1.4)	36.4	(1.4)	-1.2 (-5.2,2.7)



# TROUBLES COGNITIFS

- Revue de la littérature: 39 publications
- Troubles cognitifs en aigus:
  - Mémoire antérograde++
  - Aggravés si pathologie neuro dégénérative associée
- Pas de changement voir amélioration sur le long terme (6 mois et plus)
- Manque d'étude de qualité sur le sujet

Kumar et al. 2016 Am J Ger Psy  
Dybedal et al. 2015 Clinical  
Neuropsychologist



# TROUBLES COGNITIFS

## Mémoire antérograde et ECT:

- Quelques heures (Szekely et Poulet, 2012) à quelques jours (Falconer et al, 2010).
- Mémoire verbale immédiate (Steif et al. 1986, Loo et al., 2008; McCall et al., 2002).
- Mémoire verbale différée (Steif et al 1986, Loo et al., 2008; McCall et al., 2002).
- Amélioration rapide (Stoudemire et al., 1995)
- A court terme (qq jours-15 jours): atteinte mémoire verbale (Steif et al 1986, Loo et al., 2008; McCall et al., 2002).
- Données contradictoires: mémoire non verbale (Loo et al., 2008; McCall et al., 2002; Ng et al., 2000)



# TROUBLES COGNITIFS

## Facteurs prédictifs trouble mnésique antérograde:

- Placement des électrodes (Sackeim et al.2007)
  - Troubles mnésiques> en bilatéral p/r unilatéral (Semkowska et al 2010)
- Durée du pulse:
  - Troubles mnésiques> courant sinusoïdal p/r Bref Pulsé (Sackeim et al. 2007, 2008, Weiner et al. 1986)



# TROUBLES COGNITIFS

## Mémoire rétrograde et ECT:

- Quelques semaines à 6 mois (3ans ?) (Sackeim et al 2007)
- Altération immédiate après les ECT (Sackeim et al 2007)
- Majoritairement les éléments survenus dans les deux ans précédant les ECT (Squire et al. 1983)
- Gradient temporel ?? (Squire et al 1976, Squire et al. 1979)



# TROUBLES COGNITIFS

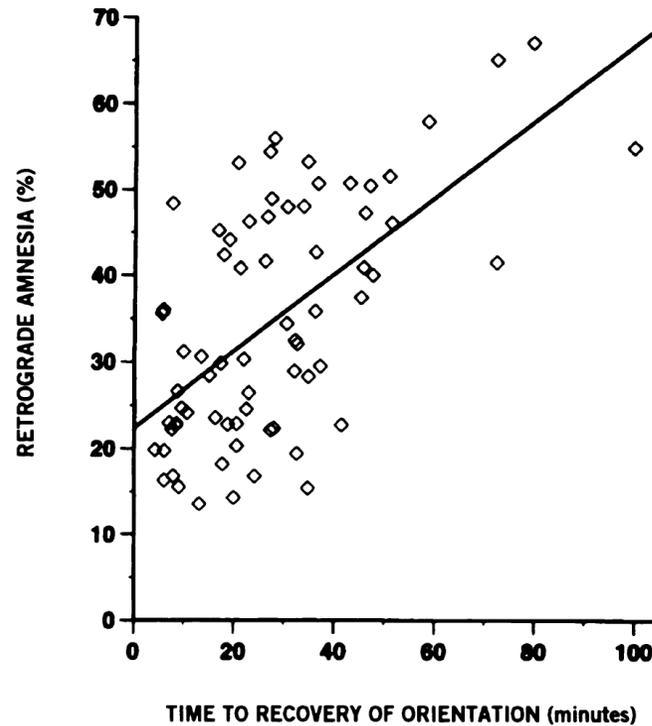
## Facteurs prédictifs troubles mnésique rétrograde:

- Nombre de séances (Sackeim et al.2007):
  - 3/ semaine > 2/ semaine
  - Nombre total de séances
- Placement des électrodes (Sackeim et al.2007, Sackeim et al. 1993):
  - Troubles mnésique 3 × +++ en bilatéral p/r unilatéral
- Durée du pulse: (Verwijk et al 2012)
  - Sinusoïdal>Pulse bref> Pulse ultra-bref
- Seuil épileptogène: (Mac Call et al. 2000, Poulet et al. 2003)
  - + on s'éloigne du seuil + les troubles mnésique sont important
- Etat cognitif pre□-ECT (sobin et al. 1995, Sackeim et al., 2007; Tirmizi et al., 2012)



# CONFUSION POST CRITIQUE

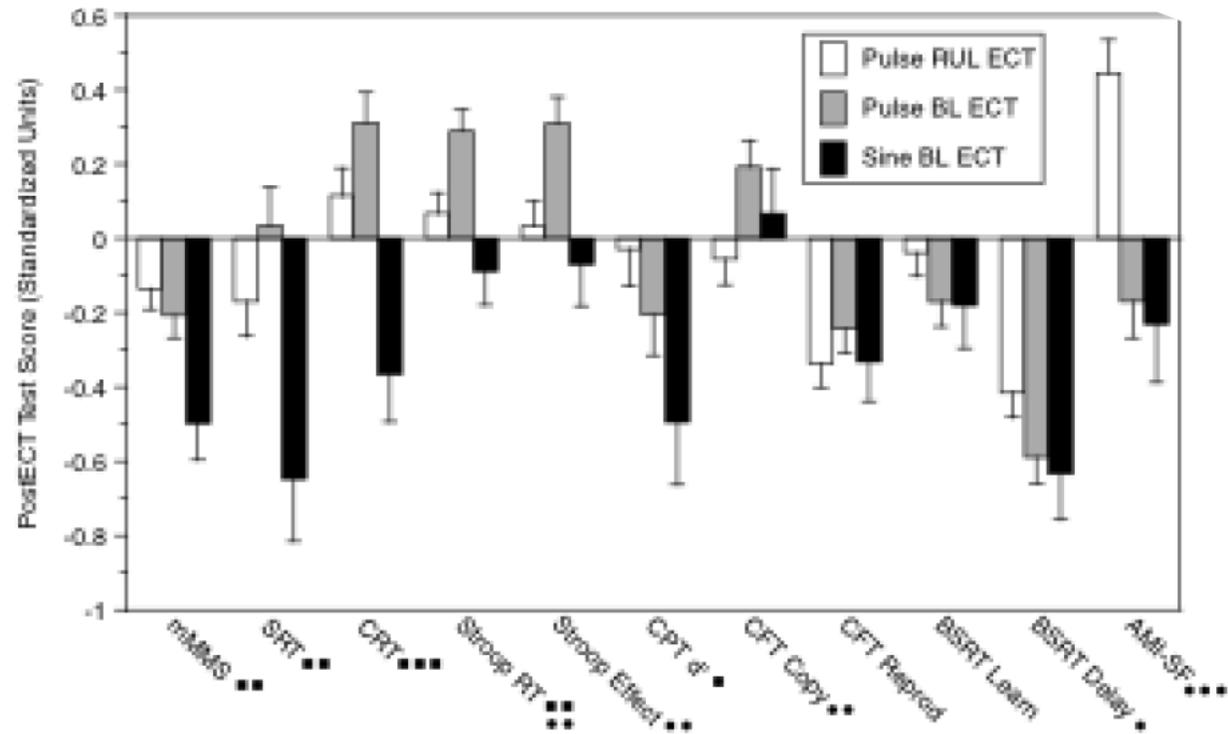
FIGURE 2. Relation Between the Duration of Acute Postictal Disorientation and Retrograde Amnesia for Autobiographical Memories During the Week After a Course of ECT (N=71)



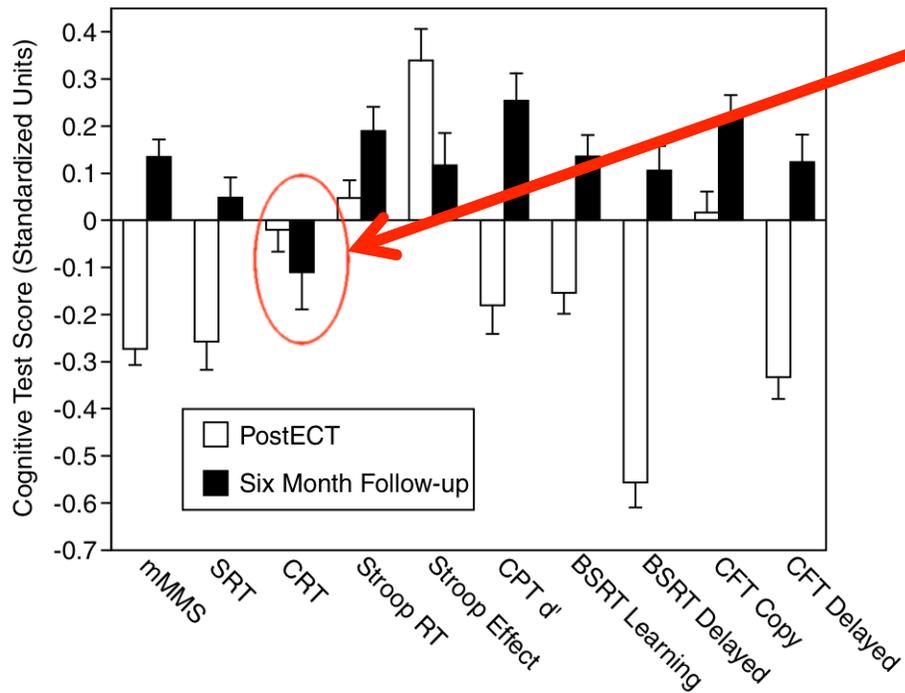
(Sobin et al. 1995)



# TROUBLES COGNITIFS



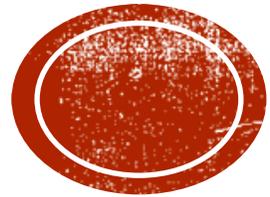
# TROUBLES COGNITIFS



Seul le temps de réaction reste perturbé à 6 mois..

Amélioration à 6 mois

**Figure 2** Scores on 11 cognitive measures immediately following and 6 months after a course of ECT. Scores for each test, other than the AMI-SF were standardized relative to the distribution of scores at baseline.



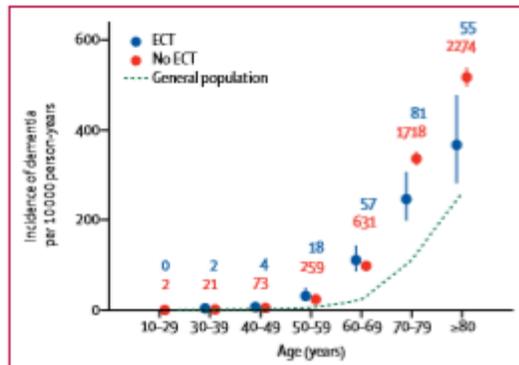
# LIEN AVEC PATHOLOGIE NEURO DÉGÉNÉRATIVE?

# LIEN AVEC PATHOLOGIE NEURO DÉGÉNÉRATIVE?

## Electroconvulsive therapy and risk of dementia in patients with affective disorders: a cohort study



Merete Osler, Maarten Pieter Rozing, Gunhild Tidemann Christensen, Per Kragh Andersen, Martin Balslev Jørgensen



**Figure 2:** Incidence of dementia in relation to electroconvulsive therapy (ECT). Data (incidence per 10 000 person-years [95% CI]) are from different age groups for 168 015 patients with affective disorders and in the Danish general population. The blue circles (received ECT) and red circles (did not receive ECT) represent incidence rates of dementia. The smaller numbers above the circles give the number of incident cases of dementia in 5901 patients treated with ECT and in 162 114 patients not treated with ECT. The dashed green line represents the number of cases of incident dementia in the general Danish population.

	Number of incidental dementia outcomes	Person-years	Incidence (number per 10 000 person-years [95% CI])	Age-adjusted HR (95% CI)	Adjusted* HR (95% CI)	Propensity-score-matched sample HR (95% CI)
<b>10-49 years</b>						
No ECT	105	573 630	1.8 (1.5-2.2)	1	1	1
ECT	6	15 172	3.9 (1.8-8.8)	1.51 (0.67-3.46) p=0.32	1.42 (0.60-3.35) p=0.41	2.36 (0.46-11.41) p=0.11
<b>50-69 years</b>						
No ECT	890	173 465	51.3 (48.0-54.7)	1	1	1
ECT	75	10 861	69.1 (55.1-86.6)	1.35 (0.91-1.97) p=0.22	1.28 (0.97-1.64) p=0.072	1.45 (0.97-2.13) p=0.081
<b>70-108 years</b>						
No ECT	3992	94 969	420.4 (407.5-433.6)	1	1	1
ECT	136	4777	284.7 (240.6-336.8)	0.68 (0.58-0.80) p<0.0001	0.62 (0.52-0.76) p<0.0001	0.77 (0.59-1.00) p=0.062

Data are from a cohort of 168 015 patients diagnosed with affective disorders from 2005 through 2015 in Denmark. Analyses with ECT were done as time-dependent variables based on 168 015 plus 5901 patient records. HR-hazard ratio. \*Adjusted for sex, educational level, depression subdiagnosis, comorbid schizophrenia, comorbid abuse of alcohol or mixed substances, previous stroke, or use of tricyclic antidepressants, other antidepressants, lithium, or antipsychotic drugs in the year before inclusion.

**Table 4:** Risk of association between electroconvulsive therapy (ECT) and all-cause dementia in relation to age at study entry



# CONCLUSION

- Inductions répétées de crises convulsives par le passage d'un courant électrique
- Traitement de référence des troubles de l'humeur et de la catatonie
- Sous anesthésie générale courte pour éviter les conséquences traumatiques des crises d'épilepsie
- L'efficacité et **la tolérance** de l'ECT dépendent du choix de ses **paramètres...**



**ECT individualisée**

# CONCLUSION

## **Electroconvulsive Therapy in Geriatric Psychiatry** **A Selective Review**

Justin P. Meyer, MD<sup>a,\*</sup>, Samantha K. Swetter, MD<sup>a</sup>,  
Charles H. Kellner, MD<sup>b</sup>

### **KEY POINTS**

- Electroconvulsive therapy (ECT) is a safe and effective treatment of geriatric patients with severe depressive illness, mania, schizophrenia, and some neuropsychiatric conditions.
- The cognitive effects of ECT are largely transient, even in elderly patients with premorbid impairment.
- ECT does not worsen the course of dementia, and is indicated for comorbid depression and agitation in dementia.
- Medical comorbidities in the older adult population may increase risk and must be considered before ECT, but do not preclude its use.

