

ECT center Haaglanden,
Clinical Center Mangostraat
The Hague, The Netherlands

ECT for BPSD in dementia

Harm-Pieter Spaans,
psychiatrist

NACT meeting, 15th October 2021, Snekkersten

ECT wing



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disclosure



Overview

Behavioural disturbances, BPSD in dementia

Treatment for BPSD

ECT for treatment resistant BPSD - review

Experiences with off-label ECT for BPSD

Case presentation & discussion

Take home

- ECT may be a safe, well tolerated and effective treatment for refractory behavioral disturbances in dementia
- The ECT setting of the ECT suite and the team are important to facilitate long term treatment (maintenance ECT)
- Motor changes (retardation, agitation, vocalization, repetitive behavior) is probably the best predictor
 - ≈ Catatonia
 - ≈ Retardation / agitation in melancholic depression
 - ≈ M. Parkinson

Behavioral and Psychological Symptoms in Dementia (BPSD)

Prevalence:

Over 80% of patients with dementia have behavioral problems such as aggression, agitation, irritability, apathy, insomnia, depression, anxiety in the course of their disease.

Significance:

BPSD may cause discomfort and danger for the patient, loss of quality of life, distress fellow patients or staff, increase the burden on the caregivers, and increase the risk of admission to residential care.

What causes BPSD?

A psychiatric/geriatric comprehensive assessment needs to be performed of all somatic, psychiatric, psychosocial, and environmental aspects that may be involved in the behavioral problems, including a medication review.

Examples are pain, constipation, urinary retention, unmet needs (e.g., for food, fluid, companionship), problematic caregiver communication styles, environmental factors (e.g., sensory over- or under-stimulation).



Treatment priorities

Treat any underlying treatable pathology.

Environmental and psychosocial interventions can be implemented, depending on the results of the comprehensive assessment. These might include restoring a consistent daily structure; helping the person adapt to the environment; caregiver education; and one-to-one attention, music, walking, etc.

Non-pharmacological interventions (multidisciplinary care, massage and touch therapy and music combined with massage and touch therapy) were clinically more efficacious than usual care and are in guidelines preferred over pharmacological treatment.

Watt, J., Goodarzi, Z., Veroniki, A. A., et al. Comparative Efficacy of Interventions for Aggressive and Agitated Behaviors in Dementia: A Systematic Review and Network Meta-analysis. *Ann Int Med* 2019, 171, Issue 9, 633-642



Efficacy of pharmacological treatment

When response to these interventions is insufficient, pharmacological interventions may be required, despite evidence for limited effectiveness.

Antipsychotics in particular (commonly prescribed for agitation and aggression) are associated with (severe) adverse effects, including increased mortality.

Sometimes, the behavioral problems are so disruptive that non-pharmacological interventions are not possible.



Treatment failure

Some patients are unresponsive to, or have previously demonstrated poor tolerance to drug treatment.

Many of these patients are treated with the combination of medications, without success.

We need more treatment options!



Is electro-convulsive therapy an option?

ECT has already been shown to be safe and very effective for depression in older persons, including persons with dementia. *

Especially with regard to the motor, behavioral, affective, and regressive symptoms seen in catatonia.

Is ECT effective in severe agitation, aggression, psychomotor disturbances in persons with dementia?

* Hausner, L., et al. (2011). "Efficacy and cognitive side effects of electroconvulsive therapy (ECT) in depressed elderly inpatients with coexisting mild cognitive impairment or dementia." [Journal of Clinical Psychiatry](#) **72**(1): 91-97.

Systematic review

Electroconvulsive Therapy for Agitation and Aggression in Dementia: A Systematic Review

Julia F. van den Berg, PhD, Henk C. Kruithof, M.D., Rob M. Kok, M.D., PhD., Esmée Verwijk, PhD., Harm-Pieter Spaans, M.D., M.D. PhD.

Am J Ger Psychiatry 2018 (4), 419-434

Methods:

A search was conducted in Ovid MEDLINE, EMBASE and PsycINFO.

Two reviewers extracted the data from the retrieved articles.

Inclusion: original data on treatment with ECT of one or more patients with dementia, primarily for behavioral problems such as aggression or agitation.

Results

17 articles met the inclusion criteria for this review.

One of the studies was a prospective cohort study with pretest-posttest design, and one was a case-control study.

The other studies were retrospective chart reviews, case series, or single case reports.

No experimental studies or RCTs were found.

Results

122 included patients, aged 54-98 years.

All patients had pharmacotherapy, often many different classes of drugs including non-psychotropic medication.

Non-pharmacological treatments often not described.

Most commonly reported behaviours included agitation, screaming, yelling and physical aggression.

Efficacy and adverse effects

Overall in 107 of the 122 described patients (88%), substantial clinical improvement was described by the authors, often early in the course of the ECT, e.g. after the 2nd, 3rd or 4th treatment. The remaining 15 patients did not improve.

Most of the 107 improved patients were noticeably less agitated and aggressive, yelling and screaming ceased, and food intake was resumed.

Adverse effects were most commonly mild, transient, (e.g. mild transient post-ictal confusion or headache) or were not reported. 6 patients suffered from a delirium.

One recent new publication

Adriana Hermida, Yi-lang Tang, Oliver Glass, A. Umair Janjua, William McDonald. Efficacy and Safety of ECT for Behavioral and Psychological Symptoms of Dementia (BPSD): A Retrospective Chart Review. Am J Geriatr Psychiatry 2020, 28, Issue 2, 157-163

Retrospective chart review, n=60

Pre- and post-ECT Pittsburg Agitation Scale (PAS) maximum score is 16

Areas: vocalization, agitation, aggressiveness, resisting care

The baseline PAS total was 9.3 ± 3.7 and it decreased significantly after three (2.5 ± 2.8) and six (1.5 ± 2.3) ECT treatments.

Also: a decrease in the number of psychotropics prescribed, and an increase in the GAF score was observed.

No significant ECT-related medical complications were observed except transient confusion.

Why is ECT not more often applied?

Survey among 61 Dutch physicians (elderly care physicians, geriatricians and old age psychiatrists).*

Only 8 out of the 61 respondents (13,1%) ever considered ECT as treatment for NPS in dementia. Of these, only 2 (3,3%) physicians actually referred one or more patients for ECT.

The indications in these two patients were depressive behavior and the combination of depressive and agitated behavior in patients with Alzheimer's disease.

* Manuscript will be submitted soon. Julia Revet, Raymond Koopmans, Rob Kok, Debby Gerritsen

Attitudes towards ECT

	Number (N) and percentage (%)				
	strongly disagree	disagree	neutral	agree	strongly agree
Patients have to have mental capacity to receive ECT	2 (3.3%)	32 (53.3%)	14 (23.3)	9 (15.0%)	3 (5.0%)
ECT can only be applied if the NPS are refractory	0 (0,0%)	7 (11,7%)	18 (30,0%)	30 (50,0%)	5 (8.3%)
I feel sufficiently informed to refer patients for ECT in dementia	29 (48.3%)	19 (31.7%)	3 (5.0%)	5 (8.3%)	4 (6.7%)
ECT should be applied more as therapy of NPS and dementia	5 (8.3%)	6 (10.0%)	41 (68.3%)	7 (11.7%)	1 (1.7%)

Conclusion

ECT may be an effective treatment for treatment-resistant agitation and aggression in dementia, with few adverse consequences.

However, randomised controlled studies are lacking and a small number of patients is included.

Further research evaluating the effects of ECT in the setting of dementia is warranted.

In addition, we need to inform physicians and other dementia experts that ECT is safe and should be considered more often as treatment option.

Cases

ID	Age	Gender	Diagnosis	Target symptoms	Tx	Freq		outcome
1.	79	M	Alzheimer type	agitation, repetitive behavior	UBP RUL	1x / 2wk	M # 153	+
2.	69	F	Alzheimer type	agitation, aggression	BL BP 1.5xST	1x / 4wk	# 116	+
3.	62	M	Alzheimer type	catatonia: agitation, aggression, mutism, negativism	UBP RUL → BL BP 1.5xST	2-4x / wk	# 74	+
4.	72	F	Alzheimer type	agitation, aggression	BL BP 1.5xST	2-4x / wk	# 13	-
5.	67	F	Alzheimer type	catatonia: aggression, negativism	BL BP 1.5xST	2-4x / wk	# 16	-
6.	54	M	multiple causes	agitation, aggression	BL → RUL	1-2x / wk	# 61	+
7.	66	F	mental retardation	catatonie: disruptive vocalization	RUL	1x / wk	M # 120	+
8.	67	F	Alzheimer type	catatonie: disruptive vocalization	UBP RUL → BL BP 1.5xST	2-4x / wk	# 52	+
9.	85	F	Alzheimer type	Anxiety, disruptive vocalization	BL BP 1.5xST	2-4x / wk	# 23	-

Patient 1. Mr. B

2016 (78 years) progressive cognitive deterioration Alzheimer, type dementia

2017 emergency department → geriatric ward Parnassia due to aggression

Symptoms: memory problems, disorientation, no mood disorder, behavioral problems: anxious, agitated, disruptive vocalization: yelling, loudly counting, trouble sleeping, repetitive behavior

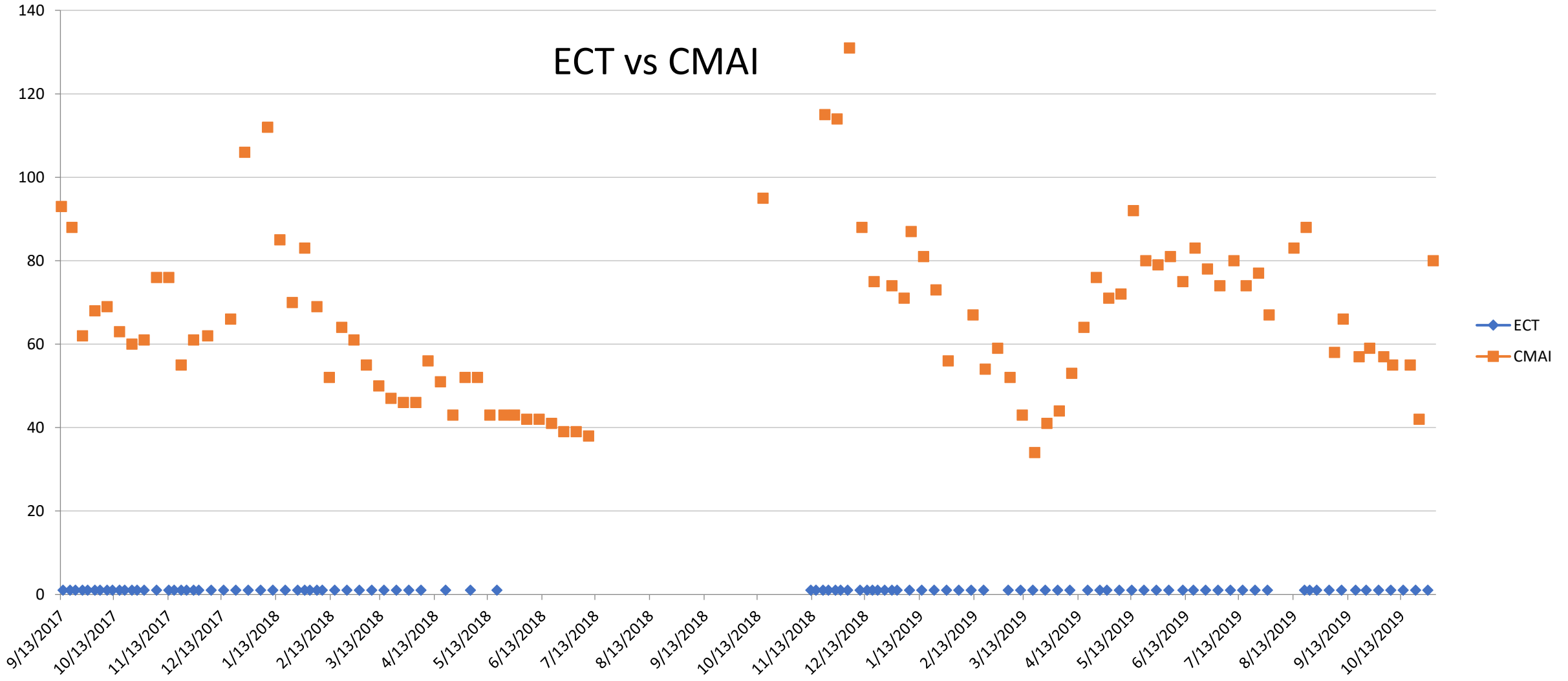
CT-scan 2017 (6): frontal atrophy, GCA 1-2, possible lacunar infarction left thalamus or Virchow-Robin space (more space around the bloodvessels), no WMH, hippocampal atrophy - MTA 2-3 left & right

MRI / EEG not possible

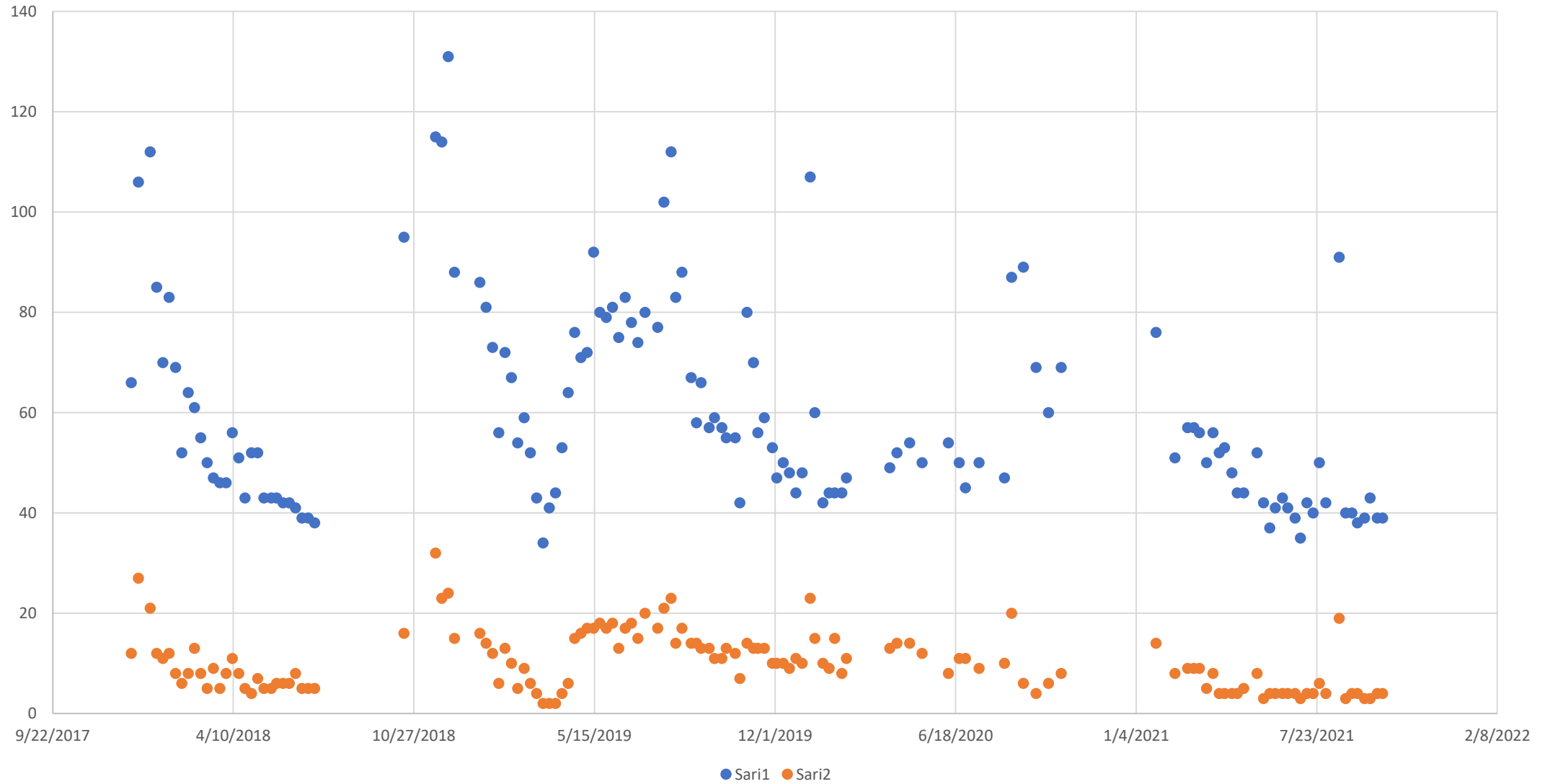
No effect of non-pharmacological interventions, lorazepam (catatonia was suspected), risperidon, trazodan, valproate

→ 2017 14th September, RUL UBP ECT twice weekly

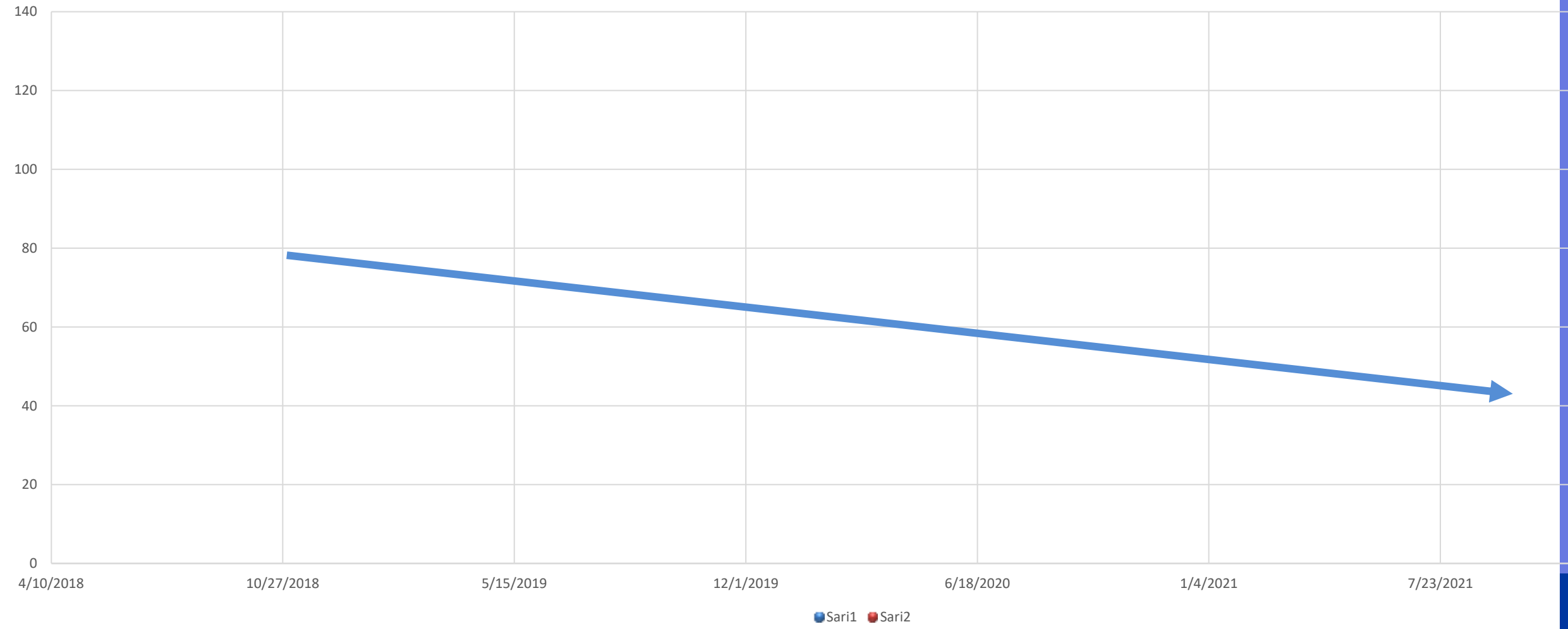
ECT vs CMAI



CMAI & SDAS



ECT vs. CMAI



- Movie before and after ECT 2017
- 3 years later, before and after ECT 2021
- Discussion about the specific or differential effect of ECT

Acknowledgements

Patient mr. B and his devoted wife

Rob Kok, elderly psychiatrist

Rob Kruithof, geriatrician

ECT team who care so much for Mr B

Nursing home team esp. the psychologist that assesses the CMAI and SDAS