Clinical Outcomes of Cenobamate Use in Drug-Resistant Temporal and Extratemporal Epilepsy: Experience from a Tertiary Epilepsy Clinic

F. Pedroni, J. Lanzone, G. Fanelli, M. Cursi, D. Curti, A. Bellini, M. Filippi

UOC Neurologia-Servizio di Neurofisiologia Clinica

IRCCS Ospedale San Raffaele – Milano

Università Vita-Salute San Raffaele - Milano

INTRODUCTION

Although the majority of patients with epilepsy (PwE) respond favorably to anti-seizure medications (ASMs), approximately 30% will unfortunately progress to develop drug-resistant epilepsy (DRE). DRE is particularly common in focal epilepsy, where a substantial subset of patients fails to achieve seizure control despite polytherapy, leading to an increased perceived social stigma, diminished quality of life, and elevated depressive symptoms.

Cenobamate (CNB) is a novel anti-seizure medication (ASM) approved as adjunctive therapy for the treatment of focal-onset seizures in adults with focal DRE. Previous experiences have underscored the advantageous tolerability profile and therapeutic efficacy of CNB within the focal DRE population.

OBJECTIVES

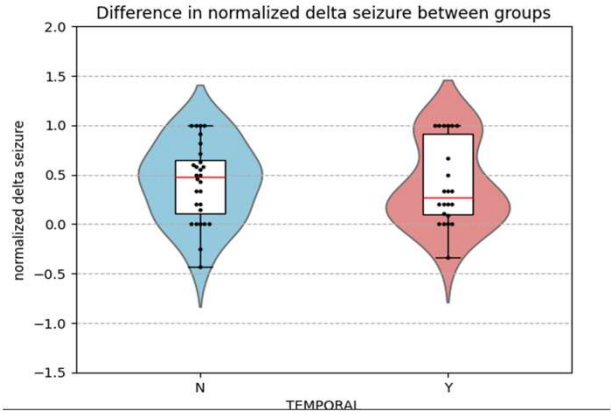
To assess efficacy and tolerability of Cenobamate (CNB) in drug-resistant focal epilepsy.

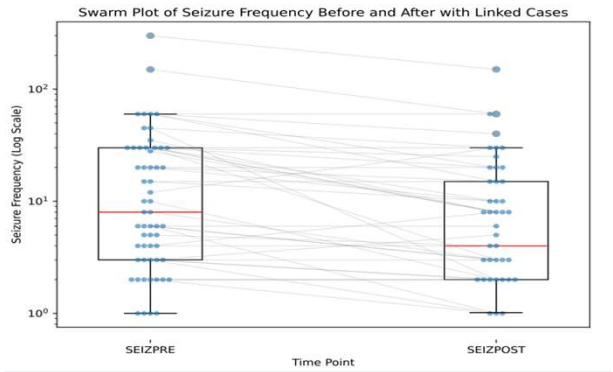
To compare its adjunctive therapeutic effectiveness between patients with temporal lobe epilepsy (TL) and extratemporal lobe epilepsy (ET) in a Epilepsy Outpatient Service.

	Total (N = 55)	TLE (N = 25)	ETLE (N = 30)	P-value
Age, years (media, SD)	49,8 (±14,9)	53,7 (±15,5)	49,2 (±12,4)	0.23
Female sex, N (%)	28 (50,8%)	15 (27,2 %)	13 (23,6%)	0.28
Epilepsy classification - *Focal symptomatic, N (%)* - *Focal cryptogenic, N (%)*	38 (69%) 17 (31%)	16 9	22 8	0.75
Patients with FBTCS, N (%)	15	5	10	0.57
Previously failed ASMs, median (IQR)	3 (2-6)	2 (2-3)	4 (2-6)	0,09
Early Users, N (%) Late Users, N (%)	24/55(51%) 31/55(49%)	14/25 (56%) 11/25 (44%)	10/30 (33,3%) 20/30 (66,7%)	0,09
CNB dose, mg (median, IQR)	200 (150-200)	200 (150-200)	200 (150-200)	0.93
Number of concomitant therapies, median (IQR)	2 (2-3)	2 (2-3)	2 (2-3)	0.26
Additional treatments: - *Sodium channel blocker, N (%)* - *GABAergic, N (%)* - *AMPA blocker, N (%)* - *SV2a inhibitorz, N (%)* - *Calcium channel blockerz, N (%)*		 22 (88,0%) 10 (40,0%) 8 (32,0%) 13 (52,0%) 9 (36,0%)	 28 (93,3%) 16 (53,3%) 8 (26,6%) 10 (33,3%) 7 (23,3%)	 0.65 0.42 0.77 0.18 0.38
Baseline monthly seizure, median (IQR)	9 (4-30)	6 (3-25)	13,5 (4-30)	0.21
Follow-up time, months (median, IQR)	20 (8-26)	23 (7.5-23)	19.5 (8-29)	0.88

METHODS

Retrospective, single-center evaluation of patients with drug-resistant focal epilepsy treated with CNB for more than 2 months between January 2022 and December 2024. Clinical data were collected: monthly seizure frequency, seizure types, treatment retention rate, adverse drug reactions (ADRs), and concomitant antiseizure medications (ASMs). ADRs were systematically recorded. Patients were classified as "non-responders," "responders 50%," or "seizure-free."





RESULTS

Based on MRI, EEG and clinical features: 25 patients had TL epilepsy, 30 had ET epilepsy (24 frontal, 5 parietal, 1 occipital). CNB was discontinued in 11 PwE (7 due to ADRs, 4 due to ineffectiveness). Treatment led to significant reduction in seizure frequency ($t(49) = 3.42$, $p = 0.001$). 54% were classified as "responders 50%" and 20.1% as "seizure-free." No significant difference in seizure reduction was found between TL and ET groups ($p > 0.05$), although a higher proportion of ET patients showed improved seizure control.

CONCLUSIONS

Our findings demonstrate substantial concordance with literature data, corroborating Cenobamate's efficacy as an adjunctive therapeutic intervention in drug-resistant focal epilepsy

Specifically, future prospective studies featuring larger sample sizes and enhanced statistical power will be essential to determine whether the differential treatment response patterns between TLE and ETLE subgroups achieve statistical significance

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