Perampanel

- The First Case of a Single-Dose, Intravenous Perampanel Administration for Early Postoperative Seizure Prophylaxis
- Effectiveness and safety of single anti-seizure medication as adjunctive therapy for drug-resistant focal epilepsy based on network meta-analysis
- Bioequivalence study of perampanel oral suspension in healthy Chinese subjects under fasting and fed conditions
- A multi-center, open-label, randomized clinical trial evaluating the preventive effect of perampanel on craniotomy-induced epileptogenesis in seizure-naive patients with supratentorial brain tumors: study protocol for a GRAMPAS trial
- Pilot Trial of Perampanel on Peritumoral Hyperexcitability in Newly Diagnosed High-grade Glioma
- Prophylactic Administration of Perampanel for Post-Stroke Epilepsy (PROPELLER Study): A Trial Protocol
- Effectiveness of perampanel for focal seizures determined by interictal gamma oscillation regularity analysis
- Serum perampanel levels in patients with seizures are not affected by hemodialysis

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Perampanel (PER) is a newly introduced antiepileptic drug (AED) and is used in over 50 countries.

Sold under the brand name Fycompa, developed by Eisai Co. that is used in addition to other drugs to treat partial seizures and generalized tonic-clonic seizures for people older than twelve years.

It was first approved in 2012, and as of 2016, its optimal role in the treatment of epilepsy relative to other drugs was not clear.

It was the first antiepileptic drug in the class of selective non-competitive antagonists of AMPA receptors.

Perampanel with baclofen may be effective for myoclonus due to respiratory reflex disinhibition and can be used to treat hiccups derived from cerebral infarctions [1)].

Prospective trials are needed to evaluate if AMPA inhibitors like perampanel possess anti-tumor effects [2)]

In the current study, we analyzed the efficacy of PER for patients with partial epilepsy who were

recruited from two hospitals that had both an epilepsy center and a general neurosurgical unit over a 1-year period.

METHODS: The present study was a retrospective observational study that evaluated the effects of PER for the treatment of partial epilepsy in 51 patients. We analyzed the effects of PER at two checkpoints, i.e., 6 and 12 months after starting adjunctive PER treatment. Following this, we analyzed the effects of PER as a first add-on (only one prior AED) and late add-on (≥2 prior AEDs) therapy, and focused on the characteristics of the patients who achieved seizure freedom.

RESULTS: Of the initial 51 patients, 45 and 39 patients were evaluated at the 6- and 12-month checkpoints, respectively. Overall, after starting treatment with PER, 29% (13/45) and 28% (11/39) of patients were seizure-free at 6 and 12 months, respectively. The tolerance rate of PER was 67% (30/45) at 6 months and 53.8% (21/39) at 12 months following treatment. The seizure-free rate of the 30 patients who were continuously treated with PER for 6 months was significantly higher in the patients who used PER as a first add-on treatment (75.0%, 6/8) than it was in the patients who used PER as a late add-on treatment (31.8%, 7/22) ($p = 0.049$). The seizure-free rate of the 21 patients who were continuously treated with PER for 12 months was significantly higher in the patients who used PER as a first add-on treatment (100%, 5/5) than it was in the patients who used PER as a late add-on treatment (37.5%, 6/16) ($p = 0.035$). Among the patients who achieved seizure freedom, the most frequently administered dose of PER was 2 mg at 6 (62%, 8/13) and 12 months (64%, 7/11). Levetiracetam was the most frequently administered concomitant AED at both 6 (92%, 12/13) and 12 months (91%, 10/11).

This retrospective observational study provides evidence supporting the effectiveness of PER as a first add-on therapy in patients with partial epilepsy. Importantly, the seizure-free rate was better when PER was used as a first, rather than a second or later, add-on treatment [3)]

1)
Morita K, Nuki Y, Hashizume H, Togo M. Persistent Hiccups Induced by Supratentorial Infarcts and Successful Treatments With Combination of Perampanel and Baclofen: A Case Report. Clin Neuropharmacol. 2022 Aug 4. doi: 10.1097/WNF.0000000000000514. Epub ahead of print. PMID: 35947416.
2)
Seidel S, Wehner T, Miller D, Wellmer J, Schlegel U, Grönheit W. Brain tumor related epilepsy: pathophysiological approaches and rational management of antiseizure medication. Neurol Res Pract. 2022 Sep 5;4(1):45. doi: 10.1186/s42466-022-00205-9. PMID: 36059029.
3)
Takahashi S, Shimizu K, Inaji M, Hashimoto S, Yamamoto S, Maehara T. Effectiveness of perampanel as a first add-on antiepileptic drug for the treatment of partial epilepsy. Epilepsy Behav. 2019 Oct 21;100(Pt A):106492. doi: 10.1016/j.yebeh.2019.106492. [Epub ahead of print] PubMed PMID: 31648158.