MEDICAL THERAPIES AND PHARMACOLOGY

EFFECTIVENESS OF LACOSAMIDE IN PATIENTS WITH FAMILIAL ERYTHROMELALGIA CAUSED BY SCN9A MUTATION

S Yamaguchi [(1)] - M Ito [(1)] - T Omine [(1)] - T Miyagi [(1)] - K Takahashi [(1)]

Graduate School Of Medicine, University Of The Ryukyus/ Department Of Dermatology, Okinawa, Japan [(1)]

Background: Familial erythromelalgia is an autosomal dominant neurological disorder characterized by triad of symptoms, symmetrical burning sensations and erythema, and elevated skin temperature in the extremities, particularly in the soles and legs. These complaints are partly relieved by cooling with ice-cold water; however, no effective treatment has been established yet.

Objective: Familial erythromelalgia is known to be caused by a mutation in SCN9A that encodes Nav 1.7 voltage-gated sodium channel. Nav1.7 is preferentially expressed in the neurons of dorsal root and sympathetic ganglions. In the pathogenesis of familial erythromelalgia, gain-of-function mutations in SCN9A have been reported to cause small fiber neuropathy. Lacosamide is an anti-convulsant that specifically blocks Nav 1.3, Nav 1.7, and Nav 1.8, and stabilizes channels in slow-inactivation state. Thus, lacosamide can be good choice for treatment of erythromelalgia caused by SCN9A mutation. In this study, we aimed to evaluate the efficacy and safety of lacosamide for patients with erythromelalgia caused by SCN9A mutation.

Materials and Methods: Study patient: A 19-year-old Japanese male who complained of burning sensation in both legs during summer season from early childhood.
Lacosamide was administered at a starting dose of 50 mg/day and increased by 50 mg/day each week until a maintenance dose of 200 mg/day, which can be increased up to 400 mg. Efficacy assessment was performed after 8 weeks. Efficacy was evaluated using Pain Intensity Numerical Rating Scale (PI-NRS) and Daily sleep interference scale (DSIS).

Results: Eight weeks after treatment with lacosamide, PI-NRS score was reduced from 8 to 5 and DSIS score was reduced from 8 to 5. Hematological, neurological, and electrocardiography examination during administration of lacosamide showed no adverse events.

Conclusions: Lacosamide reduced neuropathic pain and was well tolerated in the patient. Therefore, lacosamide can be a potential treatment option for familial erythromelalgia

caused by SCN9A mutation.