# TOPICAL CLONIDINE FOR POST-HERPETIC ITCH: QUANTITATIVE ASSESSMENT OF ITCH SENSATION BY PAINVISION®

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**Introduction:** Recent basic science studies have revealed that activation of $\alpha^{2}$-adrenergic receptors can produce antipruritic action as well as analgesia. However, few data are available regarding the antipruritic effects of $\alpha^{2}$-adrenergic agonists in patients with neuropathic itch. Recently a new method for quantitative measurement of pain intensity using a painless electrical stimulation, PainVision®(PV: Nipro Co., Osaka, Japan) has been developed in Japan. Furthermore, we demonstrated PV was helpful for the quantitative measurement of itch sensation. The purpose of our study was to examine the effects of single topical application of clonidine cream(CC) in patients with post-herpetic itch (PHI) using PV.

**Methods:** CC was prepared by mixing plastibase (polyethylene resin 5%, liquid paraffin 95%) as vehicle at a concentration of 150 μg/g. A total of 16 outpatients (mean age, 74 years; range, 51 to 88 years) with neuropathic itch after herpes zoster were enrolled into this study. CC(150 μg/1g) was applied to their itchy area in the affected skin at the time of visit. (1) Subjective assessment: A visual analog scale (VAS) from 0 to 100mm was utilized to subjectively measure the severity of itch, before and 60 min after the application of CC. (2) Quantitative assessment by PV: Two different types of current perception threshold (CPT) were measured by PV, before and 60 min after the application of CC. One CPT was the minimum perception threshold (MPT) defined by the lowest electrical current detected; the other CPT was itch equivalent threshold (IET) at which the subject starts to perceive the equivalent strength as ongoing itch. ID is calculated from two parameters as follows. ID was calculated as (IET-MPT)/MPT. Statistical analysis was carried out by paired t-test and p values less than 0.05 were considered as statistically significance.

**Results:** Single topical application of CC decreased the average VAS scores from 38.6±15.9 mm to 10.9±13.3mm ($p< 0.0001$) and the average ID fron 107.4±82.1 to 24.8± 25.7 ($p= 0.0006$).

**Conclusions:** Our data demonstrated that single topical application of CC has antipruritic activity in patients with post-herpetic itch. PV may be useful for quantitative assessment of therapeutic efficacy of antipruritic agents.