

Comment to Lavery et al, Diabetes Care, Feb 2008

In this study the authors enrolled 60 patients with type 2 diabetes who exhibited loss of vibratory sensation (VPT) greater than 20 V on the toe. They also measured sensitivity to 4 different sized SWM at 10 sites on each foot. Subject reported pain was also recorded. Then patients were randomized to receive either active or placebo Anodyne Therapy to be used at home for a period of 90 days. Subsequently patients were reevaluated to determine if treatment with Anodyne caused an improvement in VPT, sensation to the SWM, or pain. While this study was double blinded, like all studies, the protocol has various inherent limitations that bound the applicability the conclusions reached. These limitations are discussed below.

Treatments were not administered by trained healthcare professionals in a controlled environment.

Nine (9) published studies totaling 4435 subjects have previously shown Anodyne to be effective in reducing neuropathic pain and/or improving small fiber neuropathy (sensitivity to the SWM); *when treatment was administered in a clinical facility under the supervision of a health care professional trained in the optimal use of the product.*¹⁻⁹ One of these studies² was double blinded and showed both improvement in sensitivity to the SWM and neuropathic pain reduction. The protocol used by Lavery and colleagues relied solely on patient self-administration in their home and the results may be reflective of self-administration in an uncontrolled environment rather than under the supervision of a trained health care professional.

The inclusion criterion (abnormal VPT) resulted in excessive heterogeneity based on the sample size to accurately determine secondary outcomes of SWM improvement and neuropathic pain reduction.

The sole determinative inclusion criterion was diabetic neuropathy and abnormal (greater than 20) VPT, a measure of large fiber neuropathy, which was not improved as a result of self-administration of Anodyne under the protocol. Examination of the subject data reveals that more than half of the subjects exhibited no loss of protective sensation despite elevated VPT. The heterogeneity of the patient population given its size failed to demonstrate effectiveness based on the statistical methods employed.

Similarly, despite abnormal VPT only 29 of 60 subjects reported moderate or greater neuropathic pain at entry. Again the heterogeneity of the patient population failed to demonstrate effectiveness based on the statistical methods employed. Examination of the data from only those subjects who had moderate or greater pain (≥ 4 on the Numeric Pain Rating Scale), using Wilcoxon Signed Rank statistical analysis shows that actively treated patients experienced a clinically meaningful and statistically significant reduction in neuropathic pain while those receiving placebo treatment did not. (P=0.0047 active vs. P=0.30 placebo).

In summary, the conclusions of this study like any other scientific investigation must be tempered by the inherent limitations of the protocol, particularly when the results are compared to other scientific evaluations that have been reported conflicting results. Limitations in this study include the uncontrolled manner in which the study population self administered treatment and the heterogeneity of the study population vs. its size, relative to sensory loss and neuropathic pain. .

Anodyne[®] Therapy Clinical Studies involving Neuropathic Patients

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