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# Myofascial Trigger Point Injection with the Sympathetic Blocker Phenoxybenzamine

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**Myofascial Trigger Point Injection with  
the Sympathetic Blocker Phenoxybenzamine**

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**American Academy of Physical Medicine  
and Rehabilitation**

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**Introduction**

We have previously reported that myofascial trigger points as described and defined by Travell and Simons show spontaneous needle EMG activity which is found only within the 1-2mm nidus of the trigger point and is not seen in adjacent fibers of the same muscle recorded simultaneously. We hypothesized that this EMG activity arises in sympathetically stimulated intrafusal muscle fibers. Pilot studies with phentolamine demonstrated immediate and significant reduction in this trigger point EMG activity during IM and IV infusions, raising the possibility that a long-acting sympathetic blocker may offer a clinically important advance in the treatment of myofascial pain syndromes.

**Method**

17 subjects who responded to a news release seeking volunteers for a new treatment for chronic muscle pain and who were found on examination to have myofascial trigger points pain syndromes according to the criteria of Travell and Simons were treated.

The subjects were instructed to maintain a pain diary using visual analogue scale pain ratings for 7 days prior to injection.

Trigger points were identified by the EMG-guided trigger point procedure as we have previously described. Briefly, the trigger point is identified by manual palpation, a TECA monopolar EMG needle is inserted over the trigger point and advanced in 1 mm increments until the patient reports the characteristic trigger point pain and referral pattern and the EMG spike activity appears. A second needle is placed adjacent to the trigger point needle at a distance of 1 cm and both are referenced to the same surface electrode.

The alpha antagonist phenoxybenzamine (Dibenzylamine injectible, SmithKline Beecham), 25 mg in 2cc of normal saline, was injected directly into the trigger point by inserting a 21 gauge, 2 inch hypodermic needle alongside of and to the same depth as the trigger point EMG needle.

The subjects continued the daily VAS diaries and returned at one and four weeks for re-evaluation.

## Results

Trigger points were identified and treated in the following muscles: trapezius, 14; gluteus medius, 3; suboccipital, 2; multifidus, 1; quadratus lumborum, 1. There were 4 men and 18 women, age ranged from 35 to 71.

One week following injection, 13 of 17 subjects reported improvement in their pain. t-test comparison of the average of visual analogue pain ratings for the one week prior to injection and the one week following injection showed significant pain reduction ( $p < .0001$ ). At the time of publication 10 subjects had been followed for one month of which 9 reported pain improvement and significant reduction in VAS pain ratings ( $p < .05$ ).

The following adverse effects were reported:

pain at injection site	9
swelling at injection site	6
pain in shoulder	3
miscellaneous (1 each)	16
shortness of breath	
tachycardia	
palpitations	
knee paresthesias	
muscle spasms in foot	
medicine taste in mouth	
shoulder pain	
difficulty swallowing	
dryness of nasal passages	
lightheadedness	
cholecystectomy	

In keeping with the FDA protocol, all events transpiring after injection were treated as adverse events regardless of judgement of relatedness. All reported events were self-limited, none required treatment. There were no serious, life-threatening adverse events.

## Discussion

Trigger point injection with a long-acting (non-competitive) sympathetic blocker has theoretical advantages over traditional treatment with short acting local anaesthetics or anti-inflammatories which typically provide only partial and temporary relief. The primary purpose of this preliminary study was to evaluate safety of this new mode of delivery for phenoxybenzamine which is currently available only as an oral tablet. 25 mg was chosen as a maximum dose that would have little, if any, systemic effect. We are currently investigating 12.5 mg in 0.5cc to determine if this will decrease the incidence of injection site pain and swelling. The additional purpose was to determine if there was sufficient efficacy to warrant further investigations. The study demonstrated that trigger point injections under EMG-guidance with the long-acting sympathetic blocker phenoxybenzamine shows statistically and clinically significant relief, and transient, non-serious side effects. We consider this a very promising new approach to the

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treatment of chronic muscle pain syndromes associated with myofascial trigger points and we are now conducting a double-blind comparison of phenoxybenzamine, lidocaine and normal saline.

**References**

Hubbard D, Berkoff G, Myofascial trigger points show spontaneous needle EMG activity, *Spine*, 18,13,1803-7, 1993.

Travell J, Simons D, Myofascial Pain and Dysfunction, the Trigger Point Manual, Williams and Wilkins, Baltimore, 1983.

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