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Original Articles

# Prevalence of and Referred Pain From Myofascial Trigger Points in the Forearm Muscles in Patients With Lateral Epicondylalgia

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### Abstract

**Objective:** Referred pain and pain characteristics evoked from the extensor carpi radialis brevis, extensor carpi radialis longus, extensor digitorum communis, and brachioradialis muscles was investigated in 20 patients with lateral epicondylalgia (LE) and 20-matched controls.

**Methods:** Both groups were examined for the presence of myofascial trigger points (TrPs) in a blinded fashion. The quality and location of the evoked referred pain, and the pressure pain threshold (PPT) at the lateral epicondyle on the right upper extremity (symptomatic side in patients, and dominant-side on controls) were recorded. Several lateral elbow pain parameters were also evaluated.

**Results:** Within the patient group, the elicited referred pain by manual exploration of 13 out of 20 (65%) extensor carpi radialis brevis muscles, 12/20 (70%) extensor carpi radialis longus muscles, 10/20 (50%) brachioradialis muscles, and 5/20 (25%) extensor digitorum communis muscles, shares similar pain patterns as their habitual lateral elbow and forearm pain. The mean number of muscles with TrPs for each patient was 2.9 [95% confidence interval (CI) 1,4] of which 2 (95% CI 1,3) were active, and 0.9 (95% CI 0,2) were latent TrPs. Control participants only had latent TrPs (mean: 0.4; 95% CI 0,2). TrP occurrence between the 2 groups was significantly different for active TrPs ( $P<0.001$ ), but not for latent TrPs ( $P>0.05$ ). The referred pain pattern was larger in patients than in controls, with pain referral to the lateral epicondyle (proximally) and to the dorso-lateral aspect of the forearm in the patients, and confined to the dorso-lateral aspect of the forearm in the controls. Patients with LE showed a significant ( $P<0.001$ ) lower PPT (mean: 2.1 kg/cm<sup>2</sup>; 95% CI 0.8, 4 kg/cm<sup>2</sup>) as compared with controls (mean: 4.5 kg/cm<sup>2</sup>; 95% CI 3, 7 kg/cm<sup>2</sup>). Within the patient group, PPT at the lateral epicondyle was negatively correlated with both the total number of TrPs ( $r_s=-0.63$ ;  $P=0.003$ ) and the number of active TrPs ( $r_s=-0.5$ ;  $P=0.02$ ): the greater the number of active TrPs, the lower the PPT at the lateral epicondyle.

**Discussion:** Our results suggest that in patients with LE, the evoked referred pain and its sensory characteristics shared similar patterns as their habitual elbow and forearm pain, consistent with active TrPs. Lower PPT and larger referred pain patterns suggest that peripheral and central sensitization exists in LE.

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