

## Evaluating the Prevalence of Lumbar Myofascial Pain Syndrome in Patients with Non-specific Chronic Low Back Pain and a Normal MRI Study

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### Abstract

**Introduction:** Low back pain is a very common disorder that affects a significant percentage of people in the community (1). As a non-mechanical cause, myofascial pain is a primary disorder which may produce lumbar and lower limb pain and is not necessarily secondary to other diagnosis (2-5). Trigger points are the main symptoms of myofascial pain which may mimic the radicular pain in spinal disorders (6, 7).

**Objective:** To evaluate the prevalence of lumbar myofascial pain syndrome in patients with non-specific chronic low back pain and a normal MRI study.

**Materials and Methods:** This cross-sectional study was conducted on 171 patients with chronic low back pain and normal MRI report (age:43.96 ±13.6years), (weight:76.7± 71.74 kg), ( height: 166.44 ± 7.15 cm). Incidence of this syndrome was evaluated in 16 lumbar and lower extremity muscles (8). The trigger points finding was performed by tissue palpation (9).

**Results:** Females constituted 71.7 % and males 28.3 % of the participants. The patients maximum incidence percentages were in quadratus lumborum (47.7%), multifidus(43%), gluteus medius (36%), gluteus maximus (34.9%), piriformis (32.4%) and other muscles involvement was below 30%. In 27.7% of the patients only two muscles were involved. A significant correlation was shown between the number of involved muscles and age( $r=0.21$ ,  $p=0.005$ ) and pain and disability( $r=0.46$ ,  $p=0.03$ ).

**Conclusion:** Myofascial pain syndrome should be considered as a hallmark in differentiating chronic low back pain regardless of MRI finding.

**Conflict of interest: non declared**

**Key words:** Back pain \ Chronic Pain \ Myofascial pain syndrome \ Trigger Points

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## Extended Abstract

**Introduction:** Low back pain is a very common disorder that affects a significant percentage of people in the community (1). Degenerative changes of the spinal region (including loss of disc height, root and cord compression) on magnetic resonance imaging (MRI) are common (2, 3). As a non-mechanical cause, myofascial pain is a primary disorder which may produce lumbar and lower limb pain and is not necessarily secondary to other diagnosis (2-5). Trigger points are the main symptoms of myofascial pain which may mimic the radicular pain in spinal disorders (6, 7). Muscular pain is common and may be a primary problem-not necessarily secondary to other disorders (7). Trigger point is a very sensitive point within a tight band which is stimulated by excessive pressure, tension, contraction, or loading and often causes referral pain in remote areas (5). Likewise, lumbar disc herniation can cause a referral pain in the lower extremity that can be confused with MPS (3, 6).

**Objective:** To evaluate the prevalence of lumbar myofascial pain syndrome of lumbar and lower extremity muscles in patients with non-specific chronic low back pain and a normal MRI study.

**Materials and Methods:** This cross-sectional study was conducted on 171 patients with chronic low back pain and normal MRI report (age:  $43.96 \pm 13.6$  years), (weight:  $76.7 \pm 71.74$  kg), ( height:  $166.44 \pm 7.15$  cm). An expert neurosurgeon examined all patients initially. All patients were referred to MRI centers to accommodate clinical presentations with imaging. If the MRI findings were normal, then the patients were referred for a visit by physical therapist. The inclusion criteria were: age between 20 to 60 years, chronic low

back pain for at least 3 months, MRI scan indicating no lumbar disc herniation or spinal canal stenosis. Exclusion criteria were: patients diagnosed with fibromyalgia based on the American College of Rheumatology criteria (2017), previous spine surgery, previous local steroid injection or acupuncture, MRI study showing degenerative changes, lumbar spine spondylolisthesis, disc protrusion, extrusion or sequestration. 16 lumbar and lower extremity muscles according to pain pattern and referral trajectory were evaluated for myofascial pain syndrome (8). The trigger points finding were performed by tissue palpation and physical examination of the related muscles (9).

**Results:** Females constituted 71.7 % and males 28.3 % of the participants. The patients maximum incidence percentages were in quadratus lumborum (47.7%), multifidus (43%), gluteus medius (36%), gluteus maximus (34.9%), piriformis (32.4%) and other muscles involvement was below 30%. In 27.7% of patients only two muscles were involved. A significant correlation was revealed between number of involved muscles and age ( $r=0.21$ ,  $p=0.005$ ) and pain and disability ( $r=0.46$ ,  $p=0.03$ ).

**Conclusion:** Myofascial pain syndrome is a common musculoskeletal disorder in patients with nonspecific low back pain despite normal MRI findings. Quadratus lumborum and multifidus were the most common involved muscles in these patients. Myofascial pain syndrome should be considered as a hallmark in differentiating chronic low back pain regardless of MRI finding.

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