

KORELASI DEGENERASI LEMAK MUSKULUS ERECTOR SPINAE DENGAN KURVA LORDOSIS LUMBAL PADA PASIEN *LOW BACK PAIN*

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INTISARI

Latar Belakang : Degenerasi muskulus paraspinal lumbal sering dikaitkan dengan *low back pain* (LBP) yang mengarah pada hasil fungsional yang buruk dan peningkatan biaya perawatan. Beberapa penelitian telah menunjukkan hubungan antara infiltrasi lemak otot paraspinal termasuk erector spinae pada pasien LBP. Metode kuantitatif sangat akurat namun rumit dan memakan waktu, berbeda dengan metode semikuantitatif Goutallier yang lebih sederhana dan cepat. Pada *magnetic resonance imaging* (MRI) erector spinae lumbal seringkali diperhatikan, meskipun perannya cukup penting dalam stabilisasi dan mobilitas vertebrae.

Tujuan : Mengetahui korelasi degenerasi lemak muskulus erector spinae dengan kurva lordosis lumbal pada pasien LBP.

Material dan Metode: Penelitian ini menggunakan metode observasional analitik korelasi (*cross-sectional*) pada 40 subjek penelitian dengan klinis LBP di RSUP Dr Sardjito Yogyakarta pada bulan Januari 2021 - Juni 2021. Dilakukan penilaian korelasi degenerasi lemak muskulus erector spinae Goutallier maupun *functional crosssectional area* (fCSA) dengan kurvatura lordosis lumbal.

Hasil: Berdasarkan uji statistik tidak didapatkan korelasi yang signifikan antara korelasi degenerasi lemak berdasarkan klasifikasi Goutallier ($p = 0.308$) maupun fCSA dan ($p = 0.247$) dengan sudut lordosis lumbal. Sudut lordosis lumbal berkorelasi dengan IMT ($r = 0.356$) dan usia berkorelasi dengan derajat degenerasi lemak Goutallier ($r = 0.387$). Usia dan IMT berkorelasi dengan fCSA ($r = 0.378$ dan 0.331). Rerata derajat degenerasi lemak muskulus erector spinae perempuan > laki-laki.

Kesimpulan: Tidak terdapat korelasi yang signifikan antara derajat degenerasi muskulus erector spinae berdasarkan klasifikasi Goutallier maupun fCSA dengan kurvatura lordosis lumbal berdasarkan sudut lordosis lumbal pada pasien LBP.

Kata Kunci: degenerasi lemak, lordosis, Goutallier, *functional crosssectional area*, lumbal, MRI, LBP

CORRELATION OF ERECTOR SPINAE MUSCLE FATTY DEGENERATION AND LUMBAR LORDOSIS IN LOW BACK PAIN PATIENTS

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ABSTRACT

Background: Degeneration of the lumbar paraspinal muscles is often associated with low back pain (LBP), which leads to poor functional outcomes and increased treatment costs. Several studies have shown an association between paraspinal muscle fat infiltration, including the erector spinae in LBP patients. Quantitative methods are highly accurate but complicated and time-consuming, unlike Goutallier's semiquantitative method, which is simpler and faster. On magnetic resonance imaging (MRI), the erector spinae of the lumbar spine is frequently observed, despite their essential role in the stabilization and mobility of the vertebrae.

Objective: To determine the correlation between erector spinae muscle fat degeneration and lumbar lordosis curve in LBP patients.

Materials and Methods: This study used an observational analytic correlation method (cross-sectional) on 40 research subjects with clinical LBP at Dr. Sardjito General Hospital Yogyakarta from January 2021 - June 2021. A correlation test was carried out on erector spinae Goutallier muscle fat degeneration and functional cross-sectional area (fCSA) with lumbar lordotic curvature.

Results: Based on statistical tests, there was no significant correlation between the correlation of fat degeneration based on the Goutallier classification ($p = 0.308$) and fCSA and ($p = 0.247$) with the angle of lumbar lordosis. Lumbar lordosis angle correlated with BMI ($r = 0.356$) and age associated with the degree of Goutallier fat degeneration ($r = 0.387$). Age and BMI correlated with fCSA ($r = 0.378$ and 0.331). The mean degree of fatty degeneration of erector spine muscles is female > male.

Conclusion: There is no significant correlation between the degree of degeneration of the erector spinae muscles based on the Goutallier and fCSA classifications and the curvature of the lumbar lordosis based on the angle of lumbar lordosis in LBP patients.

Keywords: fat degeneration, lordosis, Goutallier, functional crosssectional area, lumbal, MRI, LBP