

KORELASI DERAJAT DEGENERASI DISKUS INTERVERTEBRALIS DENGAN PENEBALAN LIGAMENTUM FLAVUM PASIEN *LOW BACK PAIN* PADA PEMERIKSAAN *MAGNETIC RESONANCE IMAGING LUMBOSACRAL*

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INTISARI

Latar Belakang: Low Back Pain (LBP) masih menjadi salah satu masalah kesehatan utama di seluruh dunia. Studi *Global Burden of Disease* 2010 menunjukkan data global mengenai angka kejadian LBP menyatakan bahwa nyeri pinggang adalah salah satu dari 10 penyakit terbanyak di dunia dan penyebab *Disability-Adjusted Life Year* (DALY) tertinggi di dunia. Modalitas pencitraan seperti *computerized tomography* (CT) dan *magnetic resonance imaging* (MRI) sering dilakukan untuk mengidentifikasi etiologi dari LBP. Degenerasi diskus intervertebralis dan penebalan ligamentum flavum merupakan dua kondisi yang umum ditemukan pada pemeriksaan MRI

Tujuan: Penelitian ini bertujuan untuk mengetahui antara derajat degenerasi diskus intervertebralis dengan penebalan ligamentum flavum pada penderita *low back pain*

Metode: Penelitian ini merupakan jenis penelitian observasional analitik korelatif dengan desain penelitian *cross sectional*. Pengambilan data secara retrospektif dari data sekunder pasien dengan pengantar klinis *low back pain* yang dilakukan pemeriksaan MRI Lumbosacral di Instalasi Radiologi RSUP Dr. Sardjito Yogyakarta pada bulan Juli 2021 sampai bulan Juli 2022. Pengambilan sampel dilakukan secara *consecutive non-random sampling*. Subjek terpilih sesuai dengan kriteria inklusi dan eksklusi. Dilakukan penilaian derajat degenerasi diskus intervertebralis (Pfirrmann Grade) dan pengukuran ketebalan ligamentum flavum dengan pemeriksaan MRI Lumbosacral dan kedua hasilnya dianalisis menggunakan SPSS

Hasil: Jumlah sampel sebanyak 65 subjek. Usia didominasi kelompok umur lebih dari 50 tahun. Sebagian besar subjek adalah perempuan (60%). Subjek dengan kelebihan berat badan tingkat berat dan dengan berat badan normal didapatkan sebanyak (40%) Dari analisis uji korelasi *Spearman*, didapatkan hasil pengukuran pada segmen diskus intervertebralis L3-L4 ($p = 0,001$), L4-L5 ($p = 0,005$), dan L5-S1 ($p = 0,01$). Koefisien korelasi menunjukkan nilai pada segmen diskus intervertebralis L3-4 ($r = 0,388$), L4-5 ($r = 0,348$), L5-S1, ($r = 0,317$)

Kesimpulan: Terdapat korelasi yang bermakna pada pengukuran pada segmen diskus intervertebralis L3-L4 ($p = 0,001$), L4-L5 ($p = 0,005$), dan L5-S1 ($p = 0,01$). Dengan kekuatan korelasi antara derajat degenerasi diskus intervertebralis dengan penebalan ligamentum flavum termasuk dalam kategori moderat-kuat dengan arah positif (L3-4 $r = 0,388$, L4-5 $r = 0,348$, L5-S1, $r = 0,317$). Semakin berat derajat degenerasi diskus intervertebra, semakin tebal juga ligamentum flavum

Kata Kunci: *Low Back Pain, Pfirrmann Grade, Penebalan Ligamentum Flavum*

CORRELATION OF DDD (DEGREE OF INTERVERTEBRAL DISC DEGENERATION) WITH LIGAMENTUM FLAVUM THICKENING IN LOW BACK PAIN PATIENTS ON LUMBOSACRAL MAGNETIC RESONANCE IMAGING EXAMINATION

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ABSTRACT

Background: Low Back Pain (LBP) is still a significant health problem worldwide. The 2010 *Global Burden of Disease* Study shows global data regarding the incidence of LBP, stating that low back pain is one of the ten most common diseases in the world and the highest cause of *Disability-Adjusted Life Years* (DALY) in the world. Imaging modalities such as *computerized tomography* (CT) and *magnetic resonance imaging* (MRI) are often performed to identify the aetiology of LBP.

Objective: This study aims to determine the degree of intervertebral disc degeneration with thickening of the flavum ligament in patients with *low back pain*.

Materials and Methods: This research is a type of correlative analytic observational study with a *cross-sectional design*. Retrospective data collection from secondary data of patients with a clinical introduction *to low back pain* was carried out by Lumbosacral MRI examination at the Radiology Installation of RSUP Dr. Sardjito Yogyakarta from July 2021 to July 2022. Sampling was carried out using *consecutive non-random sampling*. Subjects were selected according to the inclusion and exclusion criteria. Assessment of the degree of intervertebral disc degeneration (Pfirrmann Grade) and measurement of the thickness of the flavum ligament was carried out by Lumbosacral MRI examination and both results were analyzed using SPSS.

Results: The number of samples is 65 subjects. Age is dominated by the age group of more than 50 years. Most of the subjects are women (60%). Subjects with overweight levels of weight and average weight were obtained as much (40%). From the *Spearman* correlation test analysis, the measurement results were obtained in the L3-L4 intervertebral disc segments ($p = 0.001$), L4-L5 ($p = 0.005$), and L5-S1 ($p = 0.01$). The correlation coefficient shows the value in the intervertebral disc segments L3-4 ($r = 0.388$), L4-5 ($r = 0.348$), L5-S1, ($r = 0.317$)

Conclusion: There is a significant correlation in measurements at the intervertebral disc segments L3-L4, L4-, and L5-S1. With the strength of the correlation between the degree of intervertebral disc degeneration and the thickening of the flavum ligament, it is included in the moderate-strong category with a positive direction. The more severe the degree of intervertebral disc degeneration, the thicker the flavum ligament.

Keywords: *Low Back Pain, Pfirrmann Grade, Thickening of the Flavum ligament*