

HUBUNGAN ANTARA OSTEOARTHRITIS SENDI FACET DENGAN MODIC CHANGES VERTEBRA LUMBAL PADA PASIEN LOW BACK PAIN DEGENERATIF BERDASARKAN PEMERIKSAAN MAGNETIC RESONANCE IMAGING

Wida Kartika Sari¹, Arif Faisal², Bambang Supriadi²

¹Residen dan ²Staff Departemen Radiologi, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan, Universitas Gadjah Mada, Yogyakarta

INTISARI

Pendahuluan : *Low Back Pain* (LBP) penyebab utama kecacatan pada individu lebih dari 50 tahun. Sumber potensial LBP termasuk *discus intervertebralis*, sendi *facet*, vertebra, struktur saraf, otot, ligamen, dan *fascia*. *Osteoarthritis* sendi *facet* disebabkan oleh kerusakan tulang rawan *articular* pada sendi *facet*. Penyebab utamanya adalah degenerasi tulang belakang yang terjadi secara perlahan seiring waktu. *Modic changes* berhubungan dengan bertambahnya usia. *Modic changes* paling sering terjadi pada L4-L5 dan L5-S1. Dengan terus berkembangnya teknologi *Magnetic Resonance Imaging* (MRI), hubungan antara *end plate*, vertebra, dan LBP telah mendapat banyak perhatian^{1,2,3,4}.

Metode Penelitian : Penelitian ini merupakan penelitian observasi analitik menggunakan rancangan penelitian *cross sectional* dengan pendekatan retrospektif.

Tujuan : Mengetahui hubungan *osteoarthritis* sendi *facet* dengan *Modic changes* dan seberapa besar derajat keparahan dari *osteoarthritis* sendi *facet* jika ditemukan adanya *Modic changes* pada pemeriksaan MRI vertebra lumbal.

Bahan dan Cara : Subjek penelitian yaitu pasien klinis *low back pain* degeneratif yang dilakukan MRI vertebra lumbal dan terdapat *osteoarthritis* sendi *facet* dan *Modic changes*. Data citra dari Instalasi Radiologi RSUP Dr. Sardjito Januari 2017 – Juni 2020. Dilakukan penilaian derajat *osteoarthritis* sendi *facet* dan *Modic changes*

Hasil : Uji *Spearman* menunjukkan hubungan yang bermakna dengan koefisien positif pada L4-L5 ($p=0,006$, $r=0,430$) dan Pada L5-S1 ($p=0,0001$, $r=0,612$) antara *osteoarthritis* sendi *facet* dengan *Modic changes*.

Kesimpulan : Terdapat korelasi yang bermakna *osteoarthritis* sendi *facet* dengan *Modic changes* lumbal L4-L5 dan L5-S1 pada pasien *low back pain* degeneratif berdasarkan pemeriksaan MRI.

Kata kunci : *Low back pain*, *osteoarthritis* sendi *facet*, *Modic changes*, *Magnetic Resonance imaging*

THE RELATIONSHIP BETWEEN FACET JOINT OSTEOARTHRITIS AND LUMBAR VERTEBRAE MODIC CHANGES IN DEGENERATIVE LOW BACK PAIN PATIENTS BASED ON MAGNETIC RESONANCE IMAGING

Wida Kartika Sari¹, Arif Faisal², Bambang Supriadi²

¹Resident and ²Staff of Departement Radiology , Gadjah Mada Faculty of Medicine , Public Health, and Nursery, Yogyakarta

ABSTRACT

Introduction : Low back pain (LBP) is the leading cause of disability in individuals over 50 years of age. Potential sources of LBP include intervertebral discus, facet joints, vertebrae, nerve structures, muscles, ligaments, and fascia. Facet joint osteoarthritis is caused by articular cartilage damage to facet joints. The main cause is spinal degeneration that occurs slowly over time. Modic changes are most common on the L4-L5 and L5-S1. With the continued development of Magnetic Resonance Imaging (MRI), the relationship between end plate, vertebrae, and LBP has received a lot of attention.

Research Methods: This research is an analytical observational study using a cross sectional research design with a retrospective approach.

Objectives: Find out the relationship of facet joint osteoarthritis with Modic changes and how severe the severity of facet joint osteoarthritis is if modic changes are found on MRI examination of lumbar vertebrae

Materials and Methode:: This study subjects were clinical patients of degenerative low back pain performed MRI of lumbar vertebrae and there were facet joint osteoarthritis and Modic changes. Image data from Dr. Sardjito Hospital Radiology Installation January 2017 – June 2020. Assessment of the degree of osteoarthritis of facet joints and Modic changes

Results: Spearman tests showed a meaningful association with positive coefficients at L4-L5 ($p=0.006$, $r=0.430$) and L5-S1($p=0.0001$, $r=0.612$) between facet joint osteoarthritis and Modic changes.

Conclusion: There is a meaningful correlation of facet joint osteoarthritis with Modic lumbar changes L4-L5 and L5-S1 in degenerative low back pain patients based on MRI examinations.

Keywords: Low back pain, facet joint osteoarthritis, Modic changes, Magnetic Resonance imaging