

# Korelasi antara distribusi lemak tubuh dengan lebar celah sendi tibiofemoral medial pada pasien osteoarthritis lutut dengan obesitas = The Correlation between body fat distribution and medial tibiofemoral joint space width in obese knee osteoarthritis patients

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## Abstrak

### <b>ABSTRAK</b><br>

Latar Belakang: Obesitas merupakan faktor risiko utama osteoarthritis (OA).

Penelitian terdahulu mendapatkan bahwa faktor mekanik saja tidak cukup untuk menjelaskan hubungan OA dengan obesitas. Saat ini faktor metabolik yang berkaitan dengan massa lemak tubuh dianggap memiliki peranan penting, tetapi lemak mana yang paling berperan masih kontroversial apakah lemak visceral atau lemak subkutan. Tujuan penelitian ini untuk mendapatkan korelasi antara distribusi lemak tubuh dengan lebar celah sendi tibiofemoral medial

Metode: Penelitian ini merupakan studi potong lintang pada penderita OA lutut dengan obesitas yang berobat di poliklinik Reumatologi, Geriatri dan Penyakit Dalam RSCM periode Januari-Maret 2016. Diagnosis OA lutut berdasarkan kriteria American College of Rheumatology (ACR) 1986. Pemeriksaan distribusi lemak tubuh menggunakan bioelectrical impedance analysis (BIA). Pemeriksaan radiologi lutut menggunakan radiologi konvensional (foto polos) untuk menilai lebar celah sendi tibiofemoral medial. Analisis statistik bivariat digunakan untuk mendapatkan korelasi antara distribusi lemak tubuh dengan lebar celah sendi tibiofemoral medial.

Hasil: Sebanyak 56 orang pasien yang memenuhi kriteria inklusi dan bersedia ikut dalam penelitian, mayoritas subjek berjenis kelamin perempuan (73,2%).

Median kadar lemak visceral adalah 12% (7,5-16,5) median lemak subkutan adalah 30,2% (16,5-37,9) dan median rasio lemak visceral/subkutan adalah 0,40 (0,26-0,80). Rerata lebar celah sendi tibiofemoral medial adalah 2,34 mm (SB 0,78). Korelasi antara lemak visceral dengan lebar celah sendi tibiofemoral medial ( $r: -0,474$   $p: < 0,001$ ). Tidak didapatkan korelasi antara lemak subkutan dengan lebar celah sendi tibiofemoral medial ( $r: -0,187$   $p: 0,169$ ) serta tidak didapatkan korelasi antara rasio lemak visceral/subkutan dengan lebar celah sendi tibiofemoral medial ( $r: -0,225$   $p: 0,09$ )

Simpulan: Lemak visceral berkorelasi negatif sedang dengan lebar celah sendi tibiofemoral medial ( $r: -0,474$   $p: < 0,001$ ). Tidak didapatkan korelasi antara lemak subkutan dan rasio lemak visceral/subkutan dengan lebar celah sendi tibiofemoral

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### <b>ABSTRACT</b><br>

Background: Obesity is a major risk factor for knee osteoarthritis. The

relationship between obesity and OA may not simply due to mechanical factor. Evidence suggests that metabolic factors related to body fat play important roles, but the specific type of fat that contributes to OA is unclear. The objective of this study was to examine the possible correlation between body fat distributions with knee OA

**Method:** This study was a cross sectional study in OA patients with obesity visiting Rheumatology, Geriatric, Internal Medicine clinics in Cipto Mangunkusumo Hospital between January-March 2016. Samples were collected using consecutive sampling method. Knee OA was diagnosed from clinical and radiologic evaluation based on American College of Rheumatology 1986 criteria. Body fat distribution was measured by bioelectrical impedance analysis (BIA). Radiographs of the knee was measured by conventional radiography to evaluate joint space narrowing (JSN). The correlation between body fat distributions with joint space width was analyzed by bivariate analysis

**Result:** A total of 56 subjects were recruited, with majority of subjects were women (73,2%). Median of visceral fat was 12% (7.5-16,5), median of subcutaneous fat was 30,2% (16,5-37,9) and median of visceral to subcutaneous fat ratio was 0,40 (0,26-0,80). Mean of medial tibiofemoral joint space width was 2,34 mm (SB 0,78). In bivariate analysis we found correlation between visceral fat and medial tibiofemoral joint space width ( $r: -0,474$   $p: < 0,001$ ). There is no correlation between subcutaneous fat and medial tibiofemoral joint space width ( $r: -0,187$   $p: 0,169$ ) and also visceral to subcutaneous fat ratio and medial tibiofemoral joint space width ( $r: -0,225$   $p: 0,09$ ).

**Conclusion:** Visceral fat is correlated with medial tibiofemoral joint space width ( $r: -0,474$   $p: < 0,001$ ). There is no correlation between neither subcutaneous fat nor visceral to subcutaneous fat ratio and medial tibiofemoral joint space width.