UNIVERSITAS
GADJAH MADA
Perbandingan Nilai Latitude Cut Deviation antara Hemiarthroplasty dan Total Hip Arthroplasty pada Radiografi Pascaoperasi di RSUP Dr. Sardjito Yogyakarta
Sri Rahayuningsih, Dr. dr. Bambang Supriyadi, Sp.Rad., Subsp.MSK(K), MM; dr. Evi Artsini, Sp.Rad., Subsp.TR(K)
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

PERBANDINGAN NILAI *LATITUDE CUT DEVIATION* ANTARA *HEMIARTHROPLASTY* DAN *TOTAL HIP ARTHROPLASTY* PADA RADIOGRAFI PASCAOPERASI DI RSUP DR. SARDJITO YOGYAKARTA

Sri Rahayuningsih[1], Bambang Supriyadi[2], Evi Artsini[2], Sudarmanta[2], Bambang Purwanto Utomo[2]
[1]Residen dan [2]Staf Pengajar Departemen Radiologi Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan Universitas Gadjah Mada Yogyakarta, Indonesia

INTISARI

Latar Belakang dan Tujuan. Identifikasi jenis implan pada radiografi pasca *hip arthroplasty* berperan penting dalam mendeteksi komplikasi dan merencanakan tatalaksana yang tepat. Metode konvensional bersifat subjektif dan bergantung pada pengalaman pemeriksa, dengan tingkat kesalahan 10–37,5%. *Latitude cut deviation* merupakan metode kuantitatif berbasis geometri desain implan yang berpotensi meningkatkan akurasi identifikasi jenis implan. Tujuan penelitian ini adalah untuk mengetahui perbandingan nilai *latitude cut deviation* antara *hemiarthroplasty* dan *total hip arthroplasty* pada radiografi pascaoperasi di RSUP Dr. Sardjito Yogyakarta.

Metode Penelitian. Penelitian analitik observasional komparatif dengan rancangan *cross-sectional* ini menggunakan data retrospektif radiografi pelvis *anteroposterior* pasien pasca *hip arthroplasty* periode Januari 2024 hingga Juli 2025. Sebanyak 50 subjek terdiri atas 25 pasien dengan *hemiarthroplasty* dan 25 pasien dengan *total hip arthroplasty* dipilih dengan metode *consecutive non-random sampling*. Pengukuran *latitude cut deviation* dilakukan oleh dua observer independen. Analisis dilakukan menggunakan *independent samples t-test*, dilanjutkan dengan analisis kurva *receiver operating characteristic*.

Hasil Penelitian. Nilai rerata *latitude cut deviation* pada *hemiarthroplasty* sebesar 30,15 ± 6,03%, sedangkan pada *total hip arthroplasty* sebesar 0,05 ± 6,07%, dengan $p < 0,001$. Analisis kurva r*eceiver operating characteristic* menunjukkan nilai *cut-off* optimal sebesar 15,12%. Nilai *cut-off* tersebut kemudian diterapkan pada penilaian radiografi oleh dua observer independen dan diperoleh akurasi diagnostik 98–100%, dengan sensitivitas dan spesifisitas tetap tinggi.

Kesimpulan. Terdapat perbedaan bermakna nilai *latitude cut deviation* antara *hemiarthroplasty* dan *total hip arthroplasty*. *Latitude cut deviation* merupakan indikator radiografi kuantitatif yang reliabel dan akurat untuk membedakan kedua jenis implan.

Kata Kunci: *hemiarthroplasty*, *total hip arthroplasty*, radiografi, *latitude cut deviation.*

UNIVERSITAS
GADJAH MADA

Perbandingan Nilai Latitude Cut Deviation antara Hemiarthroplasty dan Total Hip Arthroplasty pada Radiografi Pascaoperasi di RSUP Dr. Sardjito Yogyakarta
Sri Rahayuningsih, Dr. dr. Bambang Supriyadi, Sp.Rad., Subsp.MSK(K), MM; dr. Evi Artsini, Sp.Rad., Subsp.TR(K)
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

COMPARISON OF LATITUDE CUT DEVIATION VALUES BETWEEN HEMIARTHROPLASTY AND TOTAL HIP ARTHROPLASTY ON POSTOPERATIVE RADIOGRAPHS AT DR. SARDJITO GENERAL HOSPITAL YOGYAKARTA

Sri Rahayuningsih[1], Bambang Supriyadi[2], Evi Artsini[2], Sudarmanta[2], Bambang Purwanto Utomo[2]
[1]Resident, [2]Lecturer, Department of Radiology, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada

ABSTRACT

Introduction and Objective. Precise identification of implant type on postoperative hip arthroplasty radiographs is critical for appropriate complication management. Conventional methods are subjective and can have error rates of up to 37.5%. This study evaluated latitude cut deviation, a quantitative method based on implant geometry, for its potential to improve the accuracy of implant identification. The objective was to compare the latitude cut deviation values between patients who underwent hemiarthroplasty and those who underwent total hip arthroplasty at Dr. Sardjito General Hospital, Yogyakarta.

Methods. This comparative observational cross-sectional study analyzed fifty retrospective anteroposterior pelvic radiographs, consisting of twenty-five from the hemiarthroplasty group and twenty-five from the total hip arthroplasty group. Measurements were performed independently by two observers.

Results. The mean latitude cut deviation value for hemiarthroplasty was 30.15 ± 6.03%, while for total hip arthroplasty it was 0.05 ± 6.07%, with $p < 0.001$. Receiver operating characteristic curve analysis identified an optimal cut-off value of 15.12%. This cut-off was then applied to radiographic assessments by two independent observers, yielding a diagnostic accuracy of 98–100%, with consistently high sensitivity and specificity.

Conclusion. There is a significant difference in the latitude cut deviation values between the two implant types. Latitude cut deviation is a reliable and accurate quantitative radiographic indicator for differentiating between hemiarthroplasty and total hip arthroplasty.

Keywords: hemiarthroplasty, total hip arthroplasty, radiograph, latitude cut deviation.