

# Perbedaan Keluaran Stenosis Arteri Tungkai pada Ultrasonografi (USG) yang Dioperasikan Trainee Bedah Vaskular Endovaskular Semester 1 dan Semester 4 Untuk Diagnosis Chronic Limb Threatening Ischemia (CLTI) dengan Standar Computed Tomography Angiography (C = Differences in Limb Arterial Stenosis Outcomes on Ultrasonography (USG) Performed by First and Fourth Semester Vascular-Endovascular Surgery Trainees for the Diagnosis of Chronic Limb-Threatening Ischemia (CLTI) with Computed Tomography Angiography (CTA)

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## Abstrak

Latar belakang: USG Doppler kerap dipakai untuk skrining awal *Chronic Limb Threatening Ischemia* (CLTI) dan dapat juga memantau respons terapi selama follow-up. Di Rumah Sakit Dr. Cipto Mangunkusumo (RSCM), sebagai pusat rujukan nasional dan Pusat Pendidikan Subspesialis Bedah Vaskular Endovaskular, Trainee bedah vaskular-endovaskular menjalani pendidikan mereka. Penting bagi Trainee Bedah Vaskular untuk mengorelasikan temuan klinis dengan hasil USG Doppler, sehingga supervisi semester 4 terhadap semester 1 menjadi krusial. Namun, dampak pengalaman terhadap akurasi USG Doppler, terutama pada pasien Chronic Limb-Threatening Ischemia (CLTI), antara Trainee semester 1 dan 4 masih belum ada, termasuk kekurangan data dan SOP terkait durasi

supervisi.

**Metode:** Penelitian ini menggunakan metode potong lintang untuk menguji diagnosis CLTI melalui USG oleh trainee semester 1 dan 4, dibandingkan dengan CT Angiografi (CTA) sebagai standar.

**Hasil:** Total ada 31 pasien (62 tungkai) yang dibagi ke dalam dua kelompok dan diamati menggunakan USG oleh trainee dari kedua semester tersebut. Hasil penelitian menunjukkan bahwa kesesuaian temuan oklusi arteri berdasarkan USG dibandingkan dengan CTA lebih tinggi pada trainee semester 4. Selain itu, korelasi dalam penentuan derajat stenosis antara USG dan CTA lebih kuat pada semester 4. Hasil uji diagnosis menunjukkan bahwa secara keseluruhan trainee semester 4 memiliki akurasi diagnosis USG yang lebih tinggi dibandingkan trainee semester 1 di semua segmen arteri tungkai bawah.

**Kesimpulan:** Terdapat perbedaan keluaran , akurasi USG oleh semester 1 dan 4 dengan angka yang tidak jauh berbeda dalam mendiagnosis CLTI, Pada Penelitian ini peneliti juga menyarankan perlunya supervisi antara semester 1 dan 4 agar ada transfer ilmu dan *patient safety*

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**Background:** Doppler Ultrasound (USG) is frequently used for screening *Chronic Limb Threatening Ischemia* (CLTI) and monitoring therapy response during follow-up. At Dr. Cipto Mangunkusumo Hospital (RSCM), a national referral center and center Education of Vascular and Endovascular Surgery, vascular-endovascular surgery trainees undergo their education. It is crucial for these trainees to correlate clinical findings with Doppler USG results, hence supervision of the forth to first semester is essential. However, the impact of experience on the accuracy of Doppler USG, especially in patients with Chronic Limb-Threatening Ischemia (CLTI), between first and fourth semester trainees is still unclear, including the lack of data and Standard Operating Procedures (SOPs) regarding the duration of supervision.

**Method:** This study employed a cross-sectional method to test PAD

diagnosis through USG performed by first and fourth semester trainees, compared with CT Angiography (CTA) as the gold standard.</p><p><strong>Results:</strong> A total of 31 patient (62 lower limb) were divided into two groups and observed using USG by trainees from both semesters. The study results indicated that the concordance of arterial occlusion findings based on USG compared with CTA was higher in fourth semester trainees. Furthermore, the correlation in determining the degree of stenosis between USG and CTA was stronger in the fourth semester. The diagnostic test results showed that overall, fourth semester trainees had higher USG diagnostic accuracy compared to first semester trainees in all lower limb arterial segments.</p>

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<strong>Conclusion:</strong> There are differences in the output and accuracy of ultrasound user in fourth dan first semester trainees which are not much different result in diagnosing CLTI, in this study researchers also suggest the need for supervision between semesters first and fourth so that there will be a knowledge transfer and patient safety.