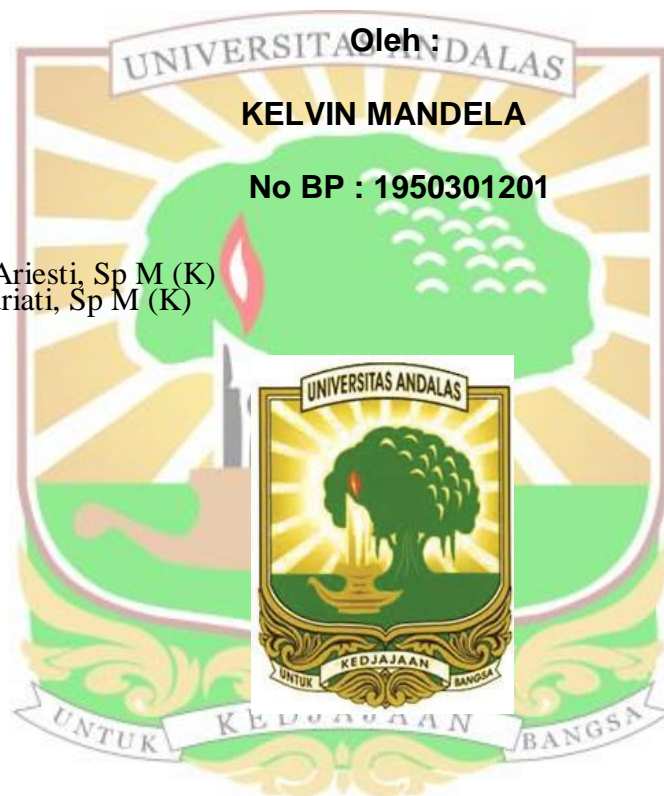


**HUBUNGAN ANTARA *CENTRAL CORNEAL THICKNESS* DENGAN
RETINAL GANGLION CELL THICKNESS PADA PASIEN MIOPIA**

TESIS

**Diajukan ke Fakultas Kedokteran Universitas Andalas sebagai
pemenuhan syarat untuk pendidikan Dokter Spesialis Mata**



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HUBUNGAN ANTARA CENTRAL CORNEAL THICKNESS DENGAN RETINAL GANGLION CELL. THICKNESS PADA PASIEN MIOPIA

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Abstrak

Pendahuluan : Miopia adalah salah satu faktor risiko independen terjadinya glaukoma. Mata miopia lebih rentan terhadap resiko glaukoma karena perubahan struktural dan susunan jaringan ikat okular. Diagnostik noninvasif menggunakan *Optical Coherence Tomography (OCT)* digunakan untuk diagnosis dan deteksi dini kerusakan glaukoma pada pasien miopia secara struktural yang diduga mendahului kerusakan fungsional seperti nilai *central corneal thickness (CCT)* dan *retinal ganglion cell (RGC) thickness*. Tujuan penelitian ini untuk mengetahui hubungan CCT dengan RGC pada pasien miopia sedang, miopia ringan dan normal.

Metode : Studi observasional analitik dengan desain *cross sectional* yang dilakukan di poliklinik Mata RSUP. Dr. M. Djamil Padang dan dilaksanakan pada Agustus 2023-Oktobre 2023. Jumlah sampel penelitian adalah 54 mata dari 54 orang mahasiswa kedokteran kepaniteraan klinik yang dibagi 3 kelompok yaitu miopia sedang, miopia ringan dan normal. Pengukuran CCT dilakukan menggunakan *Anterior Segment - Optical Coherence Tomography (AS-OCT)* dengan patchymetry dan RGC dengan *Spectral Domain (SD) - OCT*. Analisis data dilakukan dengan uji ANOVA lalu dilakukan uji korelasi Pearson.

Hasil : Terdapat perbedaan nilai rerata CCT dan RGC pada kelompok normal (CCT $540,83 \pm 22,999 \mu\text{m}$, RGC $87,72 \pm 3,594$), miopia ringan (CCT $517,44 \pm 18,956 \mu\text{m}$, RGC $79,06 \pm 3,992 \mu\text{m}$), dan miopia sedang (CCT $494,83 \pm 27,958 \mu\text{m}$, RGC $70,11 \pm 12,343 \mu\text{m}$) dengan nilai $p = 0,000$ ($p < 0,05$). Terdapat hubungan yang kuat antara CCT dan RGC pada pasien miopia ($r = 0,817$, $p = 0,000$).

Kesimpulan: Semakin tipis *central corneal thickness* maka semakin tipis *retinal ganglion cell thickness* pada pasien miopia ringan, miopia sedang serta pasien normal.

Kata kunci : Miopia, Glaukoma, *Central Corneal Thickness*, *Retinal Ganglion Cell Thickness*.

THE RELATIONSHIP BETWEEN CENTRAL CORNEAL THICKNESS AND RETINAL GANGLION CELL THICKNESS IN MYOPIC PATIENTS

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Abstract

Introduction : Myopia is one of the independent risk factors for glaucoma. Myopic eyes are more susceptible to the risk of glaucoma due to structural changes and the arrangement of ocular connective tissues. Non-invasive diagnostic tools, such as Optical Coherence Tomography (OCT) are used for the structural diagnosis and early detection of glaucoma damage in myopic patients, which is suspected to precede functional damage, such as central corneal thickness (CCT) and retinal ganglion cell (RGC) thickness. The aim of this study is to determine the relationship between CCT and RGC in patients with moderate myopia, mild myopia, and normal vision.

Methods : Analytical observational study with a cross-sectional design conducted at the eye clinic of Dr.M. Djamil Hospital Padang, carried out from August 2023 – to October 2023. The research sample consists of 54 eye from 54 medical students assigned to clinical clerkships divided into 3 groups, moderate myopia, mild myopia, and normal vision. CCT measurements were taken using Anterior Segment – Optical Coherence Tomography (AS-OCT) with pachymetry, and RGC using Spectral Domain (SD) – OCT. Data analysis was performed using ANOVA, followed by Pearson correlation testing.

Results : There are differences in the mean values of CCT and RGC among the normal group (CCT $540,83 \pm 22,999 \mu\text{m}$, RGC $87,72 \pm 3,594$), mild myopia (CCT $517,44 \pm 18,956 \mu\text{m}$, RGC $79,06 \pm 3,992 \mu\text{m}$), and moderate myopia (CCT $494,83 \pm 27,958 \mu\text{m}$, RGC $70,11 \pm 12,343 \mu\text{m}$) with a p-value of 0,000 ($p < 0.005$). There is a strong correlation between CCT and RGC in myopic patients ($r = 0.817$, $p = 0.000$)

Conclusion : The thinner the central corneal thickness, the thinner the retinal ganglion cell thickness in patients with mild myopia, moderate myopia, and normal individuals.

Keywords : Myopia, Glaucoma, Central Corneal Thickness, Retinal Ganglion Cell Thickness.

