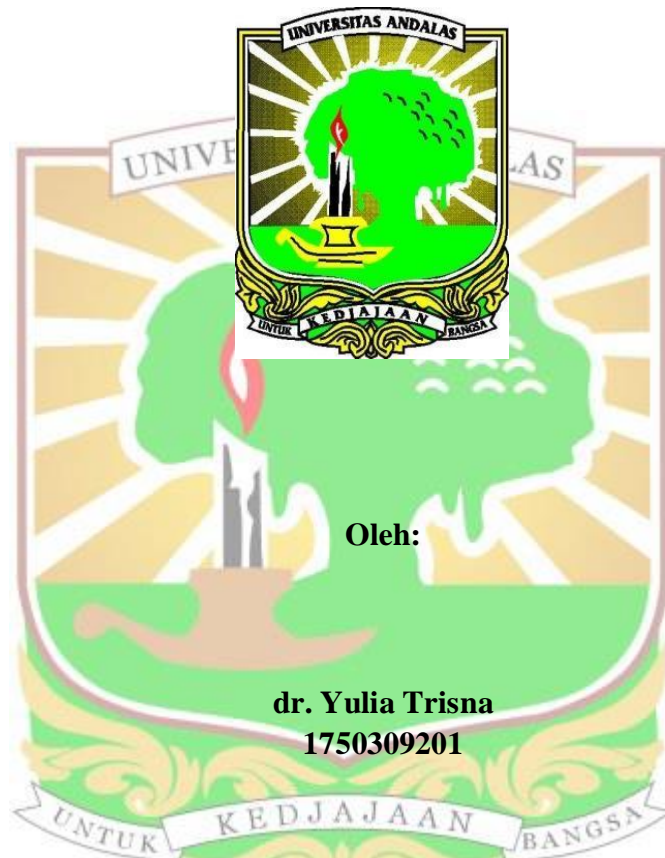


TESIS

**HUBUNGAN KADAR *DICKKOPF-RELATED PROTEIN-1* (DKK-1)
PLASMA DENGAN GANGGUAN FUNGSI KOGNITIF PADA
PENDERITA *HUMAN IMMUNODEFICIENCY VIRUS* (HIV)**



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**PROGRAM PENDIDIKAN DOKTER SPESIALIS NEUROLOGI
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ABSTRAK

Latar Belakang: *Dickkopf related protein* – 1 (DKK-1) merupakan suatu protein antagonis terhadap sinyal *Wingless* (Wnt)- β *catenin*. Disregulasi sinyal Wnt- β *catenin* oleh DKK-1 dapat menyebabkan gangguan fungsi kognitif. Gangguan fungsi kognitif pada penderita HIV atau *HIV associated neurocognitive disorder* (HAND) merupakan spektrum gangguan kognitif terkait neuroinvasi dan neuroinflamasi HIV yang secara signifikan berakibat pada gangguan fungsi aktifitas sehari-hari. Penelitian ini bertujuan untuk menilai hubungan antara kadar DKK-1 plasma dengan gangguan fungsi kognitif pada penderita HIV.

Metode: Penelitian ini menggunakan desain *cross-sectional*, yang terdiri dari 84 sampel penderita HIV yang berobat ke poliklinik *voluntary counseling and testing* (VCT) RS Dr. M. Djamil Padang dalam periode Desember 2022-Maret 2023, yang memenuhi kriteri inklusi dan eksklusi. Fungsi kognitif dinilai menggunakan pemeriksaan *Montreal Cognitive Assesment* versi Indonesia (MoCa-Ina) dan fungsi aktifitas sehari-hari menggunakan pemeriksaan *Instrumental Activity of Daily Living* (IADL). Kadar DKK-1 plasma diukur dengan metode *Enzyme-linked immunosorbent assay* (ELISA). Analisis data dilakukan dengan SPSS.

Hasil: Rerata kadar DKK-1 plasma penderita HIV adalah 358,4 (\pm 157,6) pg/mL. Gangguan tipe ANI ditemukan sebanyak 78,6%, MND sebanyak 21,4 %, dan tidak ada tipe HAD. Terdapat hubungan bermakna antara kadar DKK-1 plasma dengan gangguan fungsi kognitif pada penderita HIV ($p=0,025$). Namun tidak terdapat perbedaan bermakna pada kadar DKK-1 plasma antara gangguan kognitif tipe ANI dan MND.

Kesimpulan: Terdapat hubungan antara kadar DKK-1 plasma dengan gangguan fungsi kognitif pada penderita HIV.

Kata Kunci: DKK-1, gangguan fungsi kognitif, penderita HIV

RELATIONSHIP BETWEEN PLASMA DICKKOPF RELATED PROTEIN – 1 (DKK-1) LEVELS WITH IMPAIRED COGNITIVE FUNCTION IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) PATIENTS

ABSTRACT

Background: Dickkopf related protein-1 (DKK-1) is an antagonistic protein to the Wntless (Wnt)- β catenin signal. Dysregulation of Wnt- β catenin signaling by DKK-1 causes impaired cognitive function. Impaired cognitive function in people with HIV or HIV-associated neurocognitive disorder (HAND) is a spectrum of cognitive disorders related to HIV neuroinvasion and neuroinflammation which significantly results in impaired function of daily activities. This study aims to assess the relationship between plasma DKK-1 levels and impaired cognitive function in HIV patients.

Methods: This study used a cross-sectional design, consisting of 84 sample of HIV patients, who went to the voluntary counseling testing (VCT) clinic at Dr. M. Djamil Hospital Padang, in the period Desember 2022-Maret 2023, who met the inclusion and exclusion criteria. Cognitive function was assessed using Indonesian version of Montreal Cognitive Assessment (MoCa-Ind) tools and function of daily activities using Instrumental Activity of Daily Living (IADL) tools. DKK-1 plasma levels were measured by the Enzyme-linked immunosorbent assay (ELISA) method. Data analysis was performed with SPSS.

Results: The mean plasma DKK-1 level of HIV patients was 358,4 (\pm 157,6) pg/mL. ANI type disorder was found in 78.6% patients, MND in 21.4% patients, and none with HAD type disorder. There was a significant relationship between plasma DKK-1 levels and impaired cognitive function in HIV patients ($p=0.025$). But, there was no significant differences of plasma DKK-1 levels between ANI and MND type.

Conclusion: There is a relationship between plasma DKK-1 levels and impaired cognitive function in HIV patients.

Keywords: DKK-1, HIV patients, impaired cognitive function