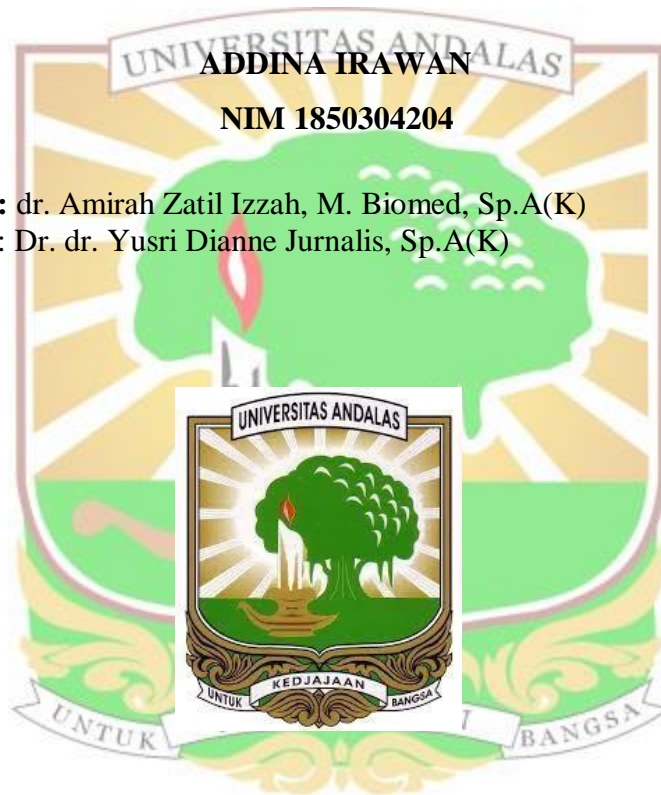


**HUBUNGAN ALEL RESEPTOR VITAMIN D TAQ1 DENGAN KEJADIAN LEUKEMIA
LIMFOBLASTIK AKUT PADA ANAK
DI RSUP DR M DJAMIL PADANG**

TESIS



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ABSTRAK

HUBUNGAN ALEL RESEPTOR VITAMIN D TAQ1 DENGAN KEJADIAN LEUKEMIA LIMFOBLASTIK AKUT PADA ANAK DI RSUP DR M DJAMIL PADANG

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Latar Belakang. Angka kejadian kanker pada anak bertambah setiap tahun. Leukemia limfoblastik akut adalah jenis kanker anak terbanyak. Peran vitamin D sebagai anti kanker telah banyak diteliti. Peran ini memerlukan reseptor dalam prosesnya.

Tujuan. Mengetahui hubungan alel RVD Taq1 dengan kejadian LLA pada anak.

Metode. Penelitian kasus-kontrol dengan kesesuaian jenis kelamin dan usia di RSUP Dr M Djamil Padang, Januari 2022 – Januari 2023. Sampel diambil secara *consecutive sampling* dengan rasio 1:2, jumlah sampel 34 orang dan kelompok kontrol 68 orang. Pemeriksaan sekuensing DNA dilakukan terhadap sampel dan hasil alel dianalisis dengan uji Chi-square.

Hasil. Pasien anak dengan LLA di RSUP Dr M Djamil Padang berjenis kelamin laki-laki 19 orang (55,9%) dan perempuan 15 orang (44,1%) dengan median usia 5,33 tahun. Status gizi terbanyak adalah gizi baik (64,7%). Manifestasi klinis dari yang tersering adalah pucat (94,1%), demam (82,4%), perdarahan (41,2%), dan nyeri sendi (23,5%). Temuan klinis melalui pemeriksaan fisik pasien yaitu hepatomegali (70,6%), limfadenopati (64,7%), dan splenomegali (32,4%). Kadar Hb tersering 7-<11 gr/dl (47,1%). Hitung leukosit tersering $\geq 50.000/\text{mm}^3$ (35,3%), dan trombosit 20.000- <150.000/ mm^3 (55,9%). Jenis morfologi LLA tersering L2 (44,1%) dan secara imunologi B-lineage (82,4%). Terdapat hubungan antara alel RVD Taq1 dengan kejadian LLA ($p=0,029$) dan alel Tt memiliki efek risiko yang lebih kuat terhadap terjadinya LLA dibandingkan TT (OR = 5,63, 95% CI 1,33-23,00).

Kesimpulan. Terdapat hubungan antara alel RVD Taq1 dengan kejadian LLA pada anak. Genotip Tt menunjukkan efek risiko yang kuat terhadap kejadian LLA dibandingkan TT.

Kata Kunci: Leukemia Limfoblastik Akut, LLA, anak, reseptor vitamin D, alel, faktor risiko

ABSTRACT

RELATIONSHIP OF VITAMIN D RECEPTOR ALLELES TAQ1 WITH THE INCIDENCE OF ACUTE LYMPHOBLASTIC LEUKEMIA IN CHILDREN AT DR M DJAMIL HOSPITAL PADANG

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Background. The prevalence of acute lymphoblastic leukemia (ALL) in children increase annually. This disease is the most common type of childhood cancer. The role of vitamin D as an anti-cancer has been widely studied, including in ALL. This role requires a receptor in the process.

Objective. To determine the relationship receptor of vitamin D (RVD) Taq1 allele with the incidence of ALL in children.

Method. A case-control study with gender and age compatibility at Dr M Djamil Hospital Padang during January 2022 – January 2023. Samples were taken by consecutive sampling with a ratio of 1:2. Samples was 34 people and the control group was 68 people. DNA sequencing examination was carried out on samples and allele results were analyzed by Chi-square test.

Results. Acute Lymphoblastic Leukemia patients at Dr M Djamil Hospital Padang were 19 males (55.9%) and 15 females (44.1%) with median age is 5.33 years old. Most nutritional status of patients is good nutrition (64.7%). The clinical manifestations were pale (94.1%), fever (82.4%), bleeding (41.2%), and joint pain (23.5%). Clinical findings through physical examination of the patient were hepatomegaly (70.6%), lymphadenopathy (64.7%), and splenomegaly (32.4%). Hb level was 7-<11 gr/dl (47.1%) predominant. The frequent leukocyte count was $\geq 50,000/\text{mm}^3$ (35.3%), and platelets 20,000- <150,000/ mm^3 (55.9%). The most common morphological type of ALL was L2 (44.1%) and immunologically was B-lineage (82.4%). There is a relationship between the RVD Taq1 allele and the incidence of ALL ($p=0.029$) and the Tt allele has a stronger risk effect on ALL than TT (OR = 5.63, 95% CI 1.33-23.00). **Conclusion.** There is a relationship between the RVD Taq1 allele and ALL's incidence in children. The Tt genotype shows a stronger risk effect on ALL than TT. **Keywords:** Acute Lymphoblastic Leukemia, ALL, children, vitamin D receptor, allele, risk factor