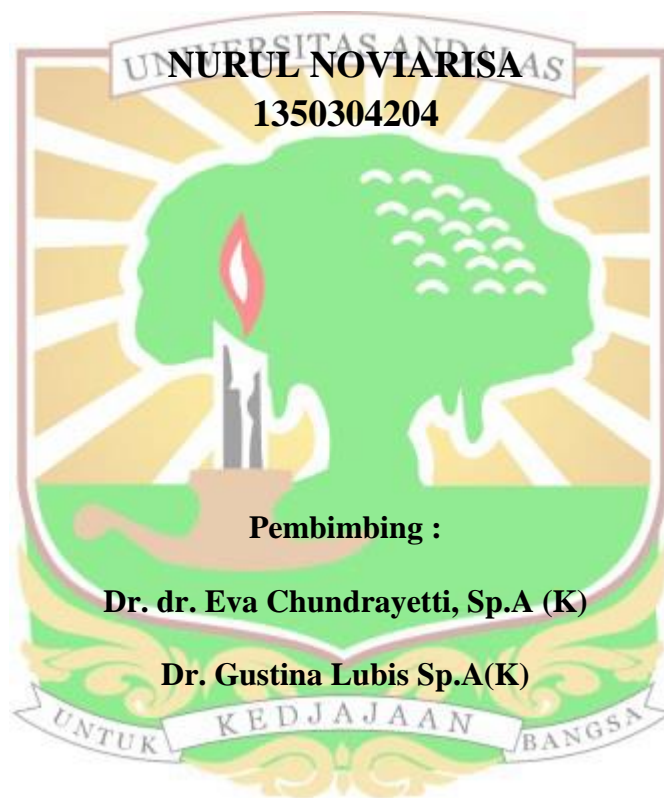


**HUBUNGAN KADAR S100B DENGAN  
TINGKAT INTELEGENSIA ANAK SINDROM DOWN**

**TESIS**



**Program Pendidikan Dokter Spesialis Ilmu Kesehatan Anak**

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# HUBUNGAN KADAR S100B DENGAN TINGKAT INTELEGENSIA ANAK SINDROM DOWN

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## Abstrak

Sindrom Down merupakan suatu kondisi keterbelakangan perkembangan fisik dan mental yang disebabkan abnormalitas kromosom 21 (Hsa21). S100B merupakan protein yang diekspresikan berlebihan pada sindrom Down akibat overekspresi gen pada kromosom 21. Komorbiditas yang diakibatkan oleh S100B pada sindrom Down berupa gangguan kognitif dan perkembangan demensia pada usia lebih dini.

Penelitian ini bersifat analitik potong lintang dengan menggunakan sampel darah 39 orang siswa SLB Kodya Padang yang secara klinik menderita Sindrom Down dan melalui pemeriksaan kariotiping terbukti Trisomi 21. Penelitian ini bertujuan untuk mengetahui kadar protein S100B dan tingkat intelegensia serta mencari hubungan diantara keduanya pada anak sindrom Down. Pemeriksaan kadar S100B dilakukan dengan metode *The Enzym linked Immunosorbent Assay* (ELISA). Tingkat intelegensia didapatkan dengan pemeriksaan *Intelligence Quotient* (IQ) dengan metode *The Wechlser Intelligence Scale for Children-4th edition* (WISC-IV).

Terdapat 25 anak (67.5%) dengan retardasi mental ringan dan 15 anak (37.5%) dengan retardasi sedang-berat. Rerata kadar S100B pada kelompok retardasi mental ringan adalah  $479,1 \pm 204$  pg/ml dan kelompok retardasi mental sedang berat  $458,7 \pm 158$  pg/ml. Tidak ditemukan perbedaan bermakna pada kedua kelompok ( $p > 0.05$ ).

Kesimpulan dari penelitian ini adalah tidak didapatkan hubungan bermakna antara kadar S100B dengan tingkat intelegensia pada anak sindrom Down.

Kata Kunci. Sindrom Down, S100B, Tingkat Intelegensia

# THE ASSOCIATION OF S100B LEVEL AND THE LEVEL OF INTELLIGENCE IN DOWN SYNDROME CHILDREN

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## *Abstract*

Down syndrome is a condition of physical and mental retardation caused by chromosome 21 (Hsa21) abnormalities. S100B is a protein that is overexpressed in Down syndrome due to overexpression of genes on chromosome 21. Comorbidity caused by S100B in Down syndrome were cognitive deterioration and early age of dementia.

This study was analytic cross-sectional study by using blood sample of 39 students in extraordinary school in Padang who clinically suffer from Down Syndrome and through karyotyping examination proven to be Trisomy 21. This study aims to determine S100B protein levels and intelligence levels and find a relationship between of both in Down syndrome children. Examination of S100B levels was carried out using The Enzyme Linked Immunosorbent Assay (ELISA) method. The level of intelligence was obtained by examining Intelligence Quotient (IQ) with the Wechlser Intelligence Scale for Children-4th edition (WISC-IV) method.

There were 25 children (67.5%) with mild mental retardation and 15 children (37.5%) with moderate-severe retardation. The mean of S100B level in the mild mental retardation group was  $479.1 \pm 204$  pg/ml and the moderate mental retardation group was  $458.7 \pm 158$  pg/ml. No significant differences were found in either group ( $p > 0.05$ ).

The result of this study is there was no association between S100B level and the level of intelligence in Down syndrome children.

Keyword. Down syndrome, S100B, intelligence level

