

**HUBUNGAN KADAR MAGNESIUM SERUM DAN HBA1C  
DENGAN SEVERITAS NEUROPATI DIABETIK**



**TESIS**

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RSUP. Dr. M. DJAMIL  
PADANG  
2022**

# HUBUNGAN KADAR MAGNESIUM SERUM DAN HbA1C DENGAN SEVERITAS NEUROPATI DIABETIK

## ABSTRAK

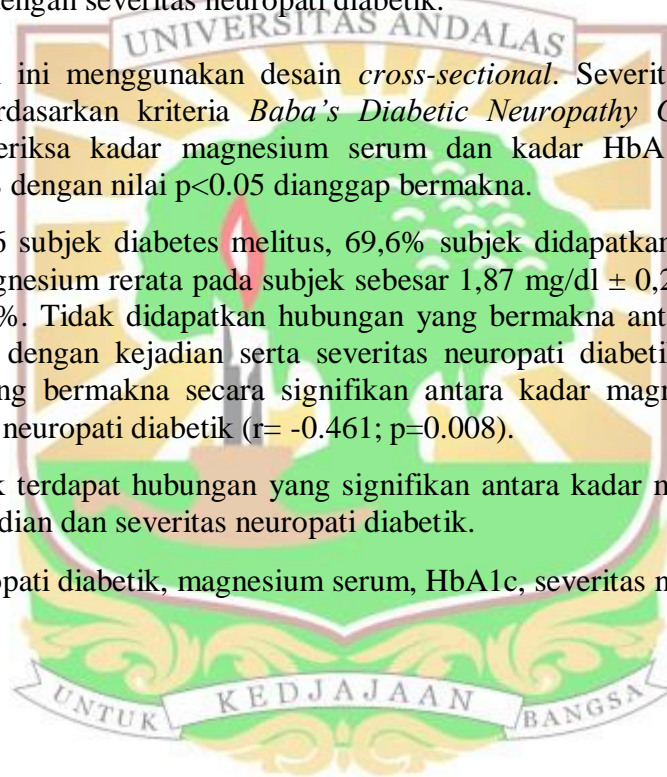
**Latar Belakang:** Kadar magnesium yang rendah diketahui berhubungan dengan peningkatan resiko terjadinya diabetes melitus beserta komplikasinya. Selain itu, kadar HbA1c juga diketahui memiliki hubungan dengan komplikasi diabetes lebih lanjut. Neuropati diabetik merupakan komplikasi mikrovaskular yang paling sering terjadi pada pasien diabetes melitus, dimana kejadiannya berhubungan dengan tingkat kecacatan serta kematian pada pasien diabetes melitus. Penelitian ini bertujuan untuk menilai hubungan antara kadar magnesium serum dan HbA1c dengan severitas neuropati diabetik.

**Metode:** Penelitian ini menggunakan desain *cross-sectional*. Severitas neuropati diabetik diklasifikasikan berdasarkan kriteria *Baba's Diabetic Neuropathy Classification* (BDC). Semua subjek diperiksa kadar magnesium serum dan kadar HbA1C. Analisa statistik menggunakan SPSS dengan nilai  $p < 0.05$  dianggap bermakna.

**Hasil:** Dari total 46 subjek diabetes melitus, 69,6% subjek didapatkan menderita neuropati diabetik. Kadar magnesium rerata pada subjek sebesar  $1,87 \text{ mg/dl} \pm 0,245$  dan median kadar HbA1c sebesar 8,6%. Tidak didapatkan hubungan yang bermakna antara kadar magnesium serum dan HbA1c dengan kejadian serta severitas neuropati diabetik ( $p > 0,05$ ). Terdapat korelasi negatif yang bermakna secara signifikan antara kadar magnesium dengan kadar HbA1c pada pasien neuropati diabetik ( $r = -0.461$ ;  $p = 0.008$ ).

**Kesimpulan:** Tidak terdapat hubungan yang signifikan antara kadar magnesium serum dan HbA1c dengan kejadian dan severitas neuropati diabetik.

**Kata Kunci:** Neuropati diabetik, magnesium serum, HbA1c, severitas neuropati diabetik



# THE CORRELATION OF SERUM MAGNESIUM AND HbA1C LEVELS WITH DIABETIC NEUROPATHY SEVERITY

## ABSTRACT

**Background:** Low magnesium levels are known to be associated with increased risk of diabetes mellitus and its complications. In addition, HbA1c levels are also known to have a correlation with further diabetes complications such as diabetic neuropathy. Diabetic neuropathy is the most common microvascular complication in diabetes mellitus, whose incidence is associated with disability and mortality rates in diabetic patients. This study aimed to assess the correlation between serum magnesium levels and HbA1c with the severity of diabetic neuropathy.

**Methods:** This was a cross-sectional study. Severity of diabetic neuropathy is classified according to the Baba's Diabetic Neuropathy Classification (BDC). All subjects were examined for serum magnesium and HbA1C levels. Statistical analysis using SPSS with  $p < 0.05$  was considered significant.

**Results:** This study consisted of 46 diabetes mellitus subjects, with 69.6% of the subjects suffering from diabetic neuropathy. The average magnesium level in this study was  $1.87 \text{ mg/dl} \pm 0.245$  and the median HbA1c level was 8.6 %. There was no significant correlation between serum magnesium levels and HbA1c with the incidence and severity of diabetic neuropathy ( $p > 0.05$ ). However, there was a significant negative correlation between magnesium levels and HbA1c levels in diabetic neuropathy patients.

**Conclusion:** There is no significant correlation between serum magnesium levels and HbA1c with the incidence and severity of diabetic neuropathy.

**Keywords:** Diabetic neuropathy, serum magnesium, HbA1c, severity of diabetic neuropathy

