

**PERBEDAAN KADAR HEMOGLOBIN A1c ANTARA METODE HPLC (*HIGH PERFORMANCE LIQUID CHROMATOGRAPHY*) DAN
CAPILLARY ELECTROPHORESIS PADA
DIABETES MELITUS TIPE 2**

***THE DIFFERENCE IN HEMOGLOBIN A1C LEVELS BETWEEN EXAMINATION
USING HPLC METHOD (HIGH PERFORMANCE LIQUID
CHROMATOGRAPHY) AND CAPILLARY
ELECTROPHORESIS METHOD
ON TYPE 2 DM***

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Intisari

Hemoglobin A1c merupakan ikatan antara Hb dengan glukosa. Diabetes melitus tipe 2 adalah penyakit gangguan metabolik ditandai oleh kenaikan gula darah akibat penurunan sekresi insulin oleh sel beta pankreas atau resistensi insulin. Tujuan penelitian untuk mengetahui perbedaan kadar HbA1c antara metode HPLC dan CE.

Penelitian menggunakan jenis penelitian analitik komparatif yaitu *cross sectional*, dilakukan pada tanggal 5 April – 6 April 2016 menggunakan 30 sampel di RSUD dr. Moewardi di Surakarta. Analisa statistik bermakna apabila $p (<0,05)$ dengan interval kepercayaan 95%.

Hasil dari uji *paired sample t-test* dengan nilai $p 0,059 (> 0,05)$, artinya rata-rata hasil pemeriksaan kadar HbA1c antara metode HPLC dan CE tidak ada perbedaan yang bermakna, dengan jenis kelamin pria 13 orang setara dengan (43,3), dan wanita 17 orang setara dengan (56,7). Rerata $\pm$ SD HbA1c metode HPLC sebesar $8,2 \pm 1,8\%$, dan rerata $\pm$ SD metode CE sebesar $8,1 \pm 1,7\%$.

Berdasarkan hasil penelitian dapat disimpulkan bahwa tidak terdapat perbedaan yang bermakna kadar HbA1c antara metode HPLC dan CE pada DM tipe 2 dengan nilai probabilitas ($p=0,059$). Saran dari peneliti adalah perlu dilakukannya penelitian lanjutan dengan desain penelitian yang berbeda dan membandingkan kadar HbA1c dengan metode yang berbeda.

Kata kunci : *Kadar HbA1c, High performance liquid chromatography, Capillary Electrophoresis.*

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Abstract

A1c hemoglobin is a bound of Hb and glucose. Diabetes Mellitus Type 2 is a metabolic disorder with an increase of blood glucose level resulting from a decrease of insulin caused by pancreatic beta cell or insulin resistance. This study aims at investigating the difference in HbA1c levels when examined using HPLC method and using CE method.

This research applied analytical comparative study with cross-sectional design, which was carried out from 5 April to 6 April 2016 using 30 samples at dr. Moewardi Regional Public Hospital (RSUD) in Surakarta. The statistical analysis is significant when $p (<0.05)$ with confidence interval of 95%.

Paired sample t-test results in the p value of 0.059 (>0.05), meaning that there is no significant difference on the average score for the examination results of HbA1c levels whether calculated using HPLC method or CE method, with 13 men (43.3) and 17 women (56.7). The average score for standard deviation of HbA1c level examined using HPLC method is $\pm 8.2 \pm 1.8\%$, and the average score for standard deviation of HbA1c examined using CE method is $8.1 \pm 1.7\%$.

On the basis of the research results, it can be concluded that there is no significant difference of HbA1c levels when measured using HPLC method and CE on Diabetes Mellitus Type 2, with probability value of $p=0.059$. It is suggested that further researches with different research design and which compare HbA1c levels using different methods need to be carried out.

Keywords: *HbA1c level, High performance liquid chromatography, Capillary Electrophoresis.*

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