

Efektivitas Pemberian Yogurt Probiotik terhadap Kadar *High Density Lipoprotein* (HDL) pada Penderita Diabetes Melitus Tipe 2

Elsa Fairuz Azizah¹, Lily Arsanti Lestari², Rio Jati Kusuma²

INTISARI

Latar Belakang: Diabetes melitus tipe 2 merupakan salah satu penyakit kronis yang berkembang pesat di dunia, termasuk di Indonesia. Diabetes melitus tipe 2 mampu meningkatkan risiko terjadinya penyakit kardiovaskuler akibat kondisi dislipidemia yang ditandai dengan rendahnya kadar HDL. Penyakit kardiovaskuler merupakan komplikasi yang menjadi penyebab utama kematian pada penderita diabetes melitus, sehingga perlu dilakukan upaya pencegahan sekunder salah satunya dengan modifikasi diet untuk memperbaiki kondisi dislipidemia. Yogurt probiotik menjadi salah satu bentuk modifikasi makanan selingan yang perlu diteliti lebih lanjut pengaruhnya terhadap kadar HDL pada penderita diabetes melitus tipe 2.

Tujuan Penelitian: Mengetahui efektivitas pemberian yogurt probiotik terhadap kadar *High Density Lipoprotein* (HDL) pada penderita diabetes melitus tipe 2.

Metode: Sebanyak 32 subjek penderita diabetes melitus tipe 2 dari 3 Puskesmas di Kota Yogyakarta mengikuti penelitian *double blind randomized control trial* ini dan dibedakan menjadi kelompok kontrol yang diberi yogurt konvensional dan kelompok intervensi yang diberi yogurt probiotik yang mengandung bakteri *L. acidophilus* La-5 dan *B. lactis* Bb-12. Intervensi diberikan selama 4 minggu dengan dosis konsumsi sebesar 100 mL/hari. Pengukuran kadar HDL dan antropometri dilakukan sebelum dan sesudah penelitian, sedangkan data asupan makan dan aktivitas fisik dikumpulkan setiap 1x/seminggu. Dilakukan uji *Independent-Sample T test* dan *Paired-Sample T test* untuk melihat perbedaan pengaruh yogurt terhadap kadar HDL. Selain itu, juga dilakukan uji untuk melihat ada tidaknya korelasi antara kadar HDL dan variabel luar yang diteiti.

Hasil: Konsumsi yogurt baik yogurt konvensional maupun yogurt probiotik mampu meningkatkan kadar HDL subjek secara signifikan. Kenaikan kadar HDL oleh yogurt konvensional ($39.65 \pm 8.83 - 44.16 \pm 5.34$, $p=0.008$) tidak berbeda secara signifikan dengan yogurt probiotik ($36.49 \pm 6.88 - 41.39 \pm 8.49$, $p=0.001$).

Kesimpulan: Baik yogurt konvensional maupun yogurt probiotik memiliki kemampuan yang sama dalam meningkatkan kadar HDL pada subjek.

Kata Kunci: diabetes melitus tipe 2, kadar HDL, yogurt probiotik, *Lactobacillus*, *Bifidobacterium*

¹Mahasiswa Program Studi S1 Gizi Kesehatan FK-KMKUGM

²Dosen Program Studi S1 Gizi Kesehatan FK-KMK UGM

The Effectiveness of Probiotic Yogurt Consumption on High Density Lipoprotein (HDL) Levels in Type 2 Diabetes Mellitus Patients

Elsa Fairuz Azizah¹, Lily Arsanti Lestari², Rio Jati Kusuma²

ABSTRACT

Background: Type 2 diabetes mellitus is one of the chronic diseases that grow fastly in the world, including in Indonesia. Type 2 diabetes mellitus can increase the risk of cardiovascular disease due to the condition of dyslipidemia characterized by low HDL levels. Cardiovascular disease is a complication which is the main cause of death in people with diabetes mellitus, so secondary prevention efforts need to be done, one of which is diet modification to improve the condition of dyslipidemia. Probiotic yogurt is one form of alternating food modification that needs to be further examined for its effect on HDL levels in people with type 2 diabetes mellitus.

Objective: To determine the effectiveness of consuming probiotic yogurt to the levels of High Density Lipoprotein (HDL) in patients with type 2 diabetes mellitus.

Methods: A total of 32 subjects with type 2 diabetes mellitus from 3 health centers in the city of Yogyakarta participated in this double blind randomized control trial and were divided into a control group given conventional yogurt and the intervention group given probiotic yogurt containing *L. acidophilus* La-5 and *B. lactis* Bb-12. The intervention was given for 4 weeks with a consumption dose of 100 mL / day. Measurement of HDL and anthropometric levels was carried out before and after the study, while data on food intake and physical activity were collected once a week. Independent Sample T-test and Paired Sample T-test were conducted to see the difference in the effect of consuming yogurt on HDL levels. In addition, a test was also conducted to see whether there was a correlation between HDL levels and the external variables.

Results: Consumption of yogurt in both conventional yogurt and probiotic yogurt can significantly increase HDL levels of the subject. The increase in HDL levels by conventional yogurt ($39.65 \pm 8.83 - 44.16 \pm 5.34$, $p = 0.008$) did not differ significantly from probiotic yogurt ($36.49 \pm 6.88 - 41.39 \pm 8.49$, $p = 0.001$).

Conclusions: Both conventional yogurt and probiotic yogurt have the same ability to increase HDL levels in the subject.

Key Word: type 2 diabetes mellitus, HDL level, probiotic yogurt, *Lactobacillus*, *Bifidobacterium*

¹ Student of Nutrition and Health Undergraduate Program, Faculty of Medicine, Public Health and Nursing Universitas Gadjah Mada

² Lecturer of Nutrition and Health Undergraduate Program, Faculty of Medicine, Public Health and Nursing Universitas Gadjah Mada