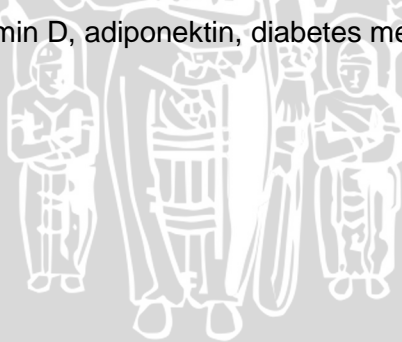


ABSTRAK

Lestari, Puji. 2014. *Pengaruh Pemberian Susu Sapi Bubuk Terhadap Kadar Adiponektin Pada Tikus Putih (Rattus Novergicus Strain Wistar) Jantan Model Diabetes Mellitus Tipe II*. Tugas Akhir, Program Studi Ilmu Gizi Kesehatan Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dr.dr. Endang Sri Wahyuni, MS. (2) Fajar Ari Nugroho, S.Gz., M.Kes.

Adiponektin merupakan produk jaringan adiposa yang kadarnya menurun pada keadaan diabetes mellitus tipe 2. Susu sapi bubuk sebagai sumber vitamin D dapat meningkatkan kadar adiponektin yang berperan dalam menurunkan kadar glukosa darah. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh pemberian susu sapi bubuk terhadap kadar adiponektin tikus wistar model DM tipe 2. Penelitian ini merupakan penelitian eksperimental dengan desain *posttest only control group*. Penelitian dilakukan selama 90 hari dengan menggunakan 30 ekor tikus wistar jantan yang dibagi secara acak menjadi 5 kelompok yaitu : P0 (diet normal), P1 (*high fat diet*), P2 (*high fat diet* + susu sapi bubuk 0,9 gr), P3 (*high fat diet* + susu sapi bubuk 1,8 gr), dan P4 (*high fat diet* + susu sapi bubuk 2,7 gr). Variabel tergantung adalah kadar adiponektin yang diukur dengan ELISA kit. Hasil penelitian menunjukkan terjadi peningkatan kadar adiponektin pada kelompok perlakuan susu sapi bubuk jika dibandingkan dengan kontrol positif. Perbedaan peningkatan kadar adiponektin dianalisis menggunakan *Kruskal-Wallis* dilanjutkan dengan *Mann-Whitney*. Hasil uji *Kruskal-wallis* menunjukkan ada perbedaan yang signifikan kadar adiponektin diantara kelompok tikus $p = 0,010$ ($p < 0,05$). Uji *Mann-Whitney* menunjukkan ketiga dosis susu sapi bubuk mampu mencegah peningkatan kadar MDA jaringan hepar secara tidak signifikan dibanding kelompok kontrol positif. Hal ini dapat disebabkan karena jumlah sampel yang kurang. Dapat disimpulkan bahwa pemberian susu sapi bubuk mampu meningkatkan kadar adiponektin walaupun tidak signifikan. Dosis susu sapi bubuk yang dapat meningkatkan kadar adiponektin tertinggi adalah 0,9 gram/hari. Diperlukan penelitian lanjutan dengan menggunakan jumlah sampel yang lebih besar dan diaplikasikan pada manusia.

Kata Kunci : Susu sapi bubuk, vitamin D, adiponektin, diabetes mellitus tipe 2



ABSTRACT

Lestari, Puji. 2014. *Effect of Dairy Cow powdered-milk to Adiponectin Levels in White Male Rats (Rattus Novergicus Strain Wistar) Type 2 Diabetes Mellitus Models*. Final Assignment, Nutrition Program, Faculty of Medicine, Brawijaya University. Supervisors: (1) Dr.dr. Endang Sri Wahyuni, MS. (2) Fajar Ari Nugroho, S.Gz., M.Kes.

Adiponectin is an adipose tissue products whose levels are decreased in the state of diabetes mellitus type 2. Cow powdered-milk as a source of vitamin D may increase adiponectin levels that play a role in lowering blood glucose levels. The purpose of this study was to determine the effect of cow powdered-milk to the Wistar rat model of adiponectin levels with type 2 diabetes. This study was an experimental study with a posttest only control group design. The study was conducted for 90 days using 30 male Wistar rats which were divided randomly into 5 groups: P0 (normal diet), P1 (high fat diet), P2 (high fat diet + 0.9 g cow powdered-milk), P3 (high fat diet + 1.8 g cow powdered-milk), and P4 (high fat diet + 2.7 g cow powdered-milk). Dependent variable was adiponectin levels were measured by ELISA kits. The results showed an increase in adiponectin levels in cow-powdered milk's treatment group when compared to the positive control. The difference increased levels of adiponectin were analyzed using the Kruskal-Wallis followed by Mann Whitney. The results of the Kruskal-Wallis test showed significant difference in adiponectin levels between groups of rats $p = 0.010$ ($p < 0.05$). Mann-Whitney test showed that all of three doses cow-powdered milk could increase adiponectin levels were not significant compared to the positive control group. This could be due to insufficient number of samples. It can be concluded that cow-powdered milk could increase adiponectin levels when compared with the positive control, although not significantly. Doses of cow powdered-milk which increase the highest adiponectin levels are 0.9 grams / day. Further research is needed using a larger sample size and applied to humans.

Keywords : Cow powdered-milk, vitamin D, adiponectin, type 2 diabetes mellitus

