

PENGARUH MAKANAN SELINGAN BERBAHAN DASAR UMBI-UMBIAN TERHADAP LINGKAR PINGGANG DAN TEKANAN DARAH PENDERITA DIABETES MELITUS TIPE 2

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INTISARI

Latar Belakang : Diabetes melitus merupakan salah satu penyakit degeneratif yang prevalensinya terus meningkat. Prevalensi DM di Indonesia pada tahun 2007 sekitar 1,1% meningkat menjadi 1,5% pada tahun 2013, dan sekitar 90-95% kasus diabetes merupakan DM tipe 2. Obeistas sentral seringkali menyertai penderita DM tipe 2 dan dapat diketahui melalui pengukuran lingkaran pinggang. Adanya hipertensi pada penderita DM dapat meningkatkan risiko terjadinya penyakit kardiovaskuler. Salah satu upaya penatalaksanaan DM yaitu pengaturan diet dengan bahan makanan yang kaya akan serat seperti umbi-umbian. Gembili (*Dioscorea esculenta*), garut (*Marantha arundinacea*), dan singkong (*Manihot esculenta*) mengandung serat pangan masing-masing 15,10%, 15,10%, 4,66%. Serat pangan meningkatkan viskositas intraluminal dan sekresi hormon GLP-1 yang mampu menekan rasa lapar, mengurangi asupan makan, dan menurunkan berat badan. Efek tersebut diduga dapat memperbaiki dan menekan komplikasi pada DM tipe 2 seperti obesitas sentral dan hipertensi.

Tujuan : Mengetahui pengaruh makanan selingan berbahan dasar umbi-umbian terhadap perubahan lingkaran pinggang dan tekanan darah penderita DM tipe 2.

Metode : Penelitian ini menggunakan desain *quasi experimental pre-post design without control group*. Subjek sebanyak 21 penderita DM tipe 2 baik laki-laki maupun perempuan, yang diminta untuk mengonsumsi makanan selingan berbahan dasar umbi-umbian (gembili, garut, singkong) sebesar 32 gram/hari selama 4 minggu. Lingkaran pinggang diukur menggunakan alat pita ukur lingkaran pinggang (*midline*). Tekanan darah diukur menggunakan *sphygmomanometer* air raksa. Uji statistik *paired t-test* digunakan untuk membandingkan rata-rata ukuran lingkaran pinggang dan tekanan darah sebelum dan sesudah perlakuan. Uji normalitas data menggunakan Uji Shapiro-Wilk.

Hasil : Konsumsi makanan selingan berbahan dasar umbi-umbian selama 4 minggu dengan rata-rata 30,80±1,34 gram/hari mampu menurunkan ukuran lingkaran pinggang secara signifikan ($p < 0,05$), dengan rata-rata lingkaran pinggang sebelum perlakuan 95,17±9,17 cm dan setelah perlakuan 92,78±8,12 cm. Namun, memberikan hasil yang tidak signifikan terhadap perubahan tekanan darah ($p > 0,05$), dengan rata-rata tekanan darah sistolik sebelum perlakuan 128,81±17,55 mmHg dan setelah perlakuan 127,90±8,12 mmHg dan rata-rata tekanan darah diastolik sebelum perlakuan 82,83±10,72 mmHg dan setelah perlakuan 83,95±9,33 mmHg.

Kesimpulan : Pemberian makanan selingan berbahan dasar umbi-umbian selama 4 minggu mempengaruhi ukuran lingkaran pinggang secara signifikan, namun tidak mempengaruhi tekanan darah sistolik dan diastolik.

Kata kunci : DM tipe 2, serat pangan, lingkaran pinggang, tekanan darah

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EFFECT OF TUBERS BASED SNACK ON WAIST CIRCUMFERENCE AND BLOOD PRESSURE IN TYPE 2 DIABETES MELLITUS PATIENTS

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ABSTRACT

Background : Diabetes mellitus (DM) is one of the degenerative disease that its prevalence continues to increase. The prevalence of DM in Indonesia in 2007 increased by approximately 1.1% to 1.5% in 2013, and about 90-95% of cases of diabetes is type 2 diabetes mellitus. Central obesity often accompanied in type 2 diabetes mellitus and can be determined by measuring waist circumference. The presence of hypertension in type 2 diabetes mellitus can increase the risk of cardiovascular disease. One of the management effort of DM is diet with foods that rich in fiber such as tubers. Lesser yam (*Dioscorea esculenta*), arrowroot (*Marantha arundinacea*), and cassava (*Manihot esculenta*) contains dietary fiber respectively 15.10%, 15.10%, 4.66%. Dietary fiber increase intraluminal viscosity and secretion of GLP-1 hormone which is able to suppress hunger, reduce food intake and lose weight. Its effect expected can repair and suppress complications in type 2 diabetes mellitus such as central obesity and hypertension.

Objective : To determine the effect of tubers based snack on waist circumference and blood pressure in type 2 diabetes mellitus patients.

Methods : Quasi-experimental pre-post test without control group design was used in this study. Total of 21 patients with type 2 diabetes mellitus both of them are men and women, who were asked to consume a package of tubers based snack as much as 32 g/day for 4 weeks. Waist circumference was measured by using a tape measure (midline). Blood pressure was measured by using a mercury sphygmomanometer. Statistical paired t-test used to compare the average waist circumference and blood pressure before and after treatment. Normality test used Shapiro-Wilk test.

Result : Consumption of tubers based snack for 4 weeks with mean $30,80 \pm 1,34$ grams each day, can reduce waist circumference significantly ($p < 0.05$), with an average waistline before treatment $95,17 \pm 9.17$ cm and after treatment 92.78 ± 8.12 cm. However, giving results that decreases systolic blood pressure insignificantly ($p > 0,05$) with the mean before treatment 128.81 ± 17.55 mmHg and 127.90 ± 8.12 mmHg after treatment and also increase diastolic blood pressure insignificantly ($p > 0,05$) with the mean 82.83 ± 10.72 mmHg before treatment and 83.95 ± 9.33 mmHg after treatment.

Conclusion : The giving of tubers based snack for 4 weeks has affect on waist circumference significantly, but did not affect on systolic and diastolic blood pressure.

Keywords : type 2 diabetes mellitus, dietary fiber, waist circumference, blood pressure.

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