Pengaruh pemberian vitamin b12 terhadap kadar homosistein vegan dewasa

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Abstrak

Tujuan: Mengetahui pengaruh suplementasi vitamin B12 400 µg/hari selama enam minggu terhadap kadar vitamin B12 dan homosistein serum pada adventis vegan dewasa.
Tempat: Gereja Masehi Advent Hari Ketujuh, Jakarta Barat.
Metadologi: Penelitian pro dan pasca perlakuan pada 27 orang subjek, berusia 20-60 tahun. Setiap subjek mengkonsumsi suplemen vitamin B12 400 µg/hari dosis tunggal selama 42 hari. Data yang dikumpulkan meliputi data demografi, antropometri pra dan pasca perlakuan, asupan nutrisi (energi, karbohidrat, protein, dan lemak) dengan metode recall 1 x 24 jam dua kali seminggu pra, pertengahan dan pasca perlakuan. Data asupan vitamin B6, B12 dan asam folat dengan FFQ semi kuantitatif serta data laboratorium meliputi kadar vitamin B12, asam folat, dan homosistein serum pra dan pasta perlakuan.
Hasil: Data demografi menunjukkan sebagian besar (81,5%) subjek berpendidikan tinggi dan semua subjek berpenghasilan di atas garis kemiskinan. Data antropometri pada pra dan pasca perlakuan menunjukkan seluruh subjek mempunyai IMT dalam batas normal. Asupan nutrisi selama perlakuan yang meliputi asupan energi, karbohidrat, lemak dan protein tidak mengalami perubahan. Bila dibandingkan dengan AKG tahun 1988 asupan energi, sebagian besar subjek termasuk cukup, asupan karbohidrat, dan protein termasuk kurang; asupan lemak termasuk lebih, Asupan vitamin B6 pada akhir perlakuan tidak menunjukkan penurunan secara signifikan (p=0,6874), sebaliknya dengan asupan vitamin B12 yang menunjukkan peningkatan signifikan (p = 0,021) dan asam folat yang menunjukkan penurunan signifikan (p = 0,0001). Hasil pemeriksaan laboratoriurn pada akhir perlakuan menunjukkan peningkatan signifikan pada kadar vitamin B12 (p = 0,0000) sebesar 202,6%, dari median 127 (58,0-193,0) pg/mL menjadi 376 (183,0-1168,0) pg/mL dan penurunan kadar homosistein yang signifikan (p = 0,0000) sebesar 39% dari median 14,50 (11,1-34,2) } µmol/L menjadi 9,50 (5,6-24,8) µmol/L. Kadar asam folat tidak mengalami penurunan bermakna (p = 0,2960).
Kesimpulan: Suplementasi vitamin B12 sebanyak 400 µg/hari selama 42 hari pada vegan terbukti meningkatkan kadar vitamin B12 dan menununkan kadar homosistein.
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The Effect Of Vitamin B12 Supplementation On Homocysteine Level Of Adult VegansObjective: To investigate the effect of 400 µg /day vitamin B12 supplementation for 42 days on serum vitamin B12, and homocysteine levels of 27 adult vegan subjects.
Location: Seventh Day Adventists Church, West Jakarta.
Method: A pre and post test design study was carried out on 27 subjects, aged 20-60 years, who fulfilled the criteria of the selection. Subjects were given 400 µg/day vitamin B12 single dose supplementation for 42 consecutive days. Data collected were demographic, anthropometric, nutritional, and laboratory. The data of energy, carbohydrate, protein, and fat intake were collected using 1 x 24 recall method twice a week at the beginning, within, and the end of the study; whilst vitamin B6, B12 and folk acid intake were obtained with

FF0 semi-quantitative method at the beginning and the end of the study. Laboratory data were collected before and after study including serum vitamin B12, folk acid and homocysteine

Results: Demographic data showed that most of the subjects had high formal education level (81.5%) and all subjects had income above the poverty line. Anthropometric data showed that BMI at the beginning and in the end of the study were in normal range. Dietary intake estimation including energy, carbohydrate, protein, and fat, were not significantly changed. Compared to Indonesian RDA 1998, intake of energy was considered adequate, carbohydrate and protein were low, and fat was high. Vitamin B6 intake did not decrease significantly ($p = 0.6874$) However vitamin B12 intake increased ($p = 0.021$) and folic acid intake decreased significantly ($p = 0.0001$). Median value of serum vitamin B12 after supplementation increased significantly ($p = 0,0000$) by 202.6% from 127 (58.0-193.0) pg/mL to 376 (183.0-1168.0) pg/mL. There was no significant difference in the serum level of folic acid ($p = 0.2960$). Median value of homocysteine after supplementation decreased significantly ($p = 0.0000$) by 39% from 14.50 (3.8-34.2) man, to 9.50 (5.6-24.8) µmol/L.

Conclusion: Supplementation of single dose 400 µg vitamin B12 for 42 consecutive days on adult vegan subjects was proven to elevate the level of serum vitamin B12 and decrease the level of homocysteine.