Pengaruh konsumsi Apel Manalagi terhadap kadar lemak serum kelinci Hiperlipidemik

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Abstrak

Ringkasan
Ruang Lingkup dan Cara Penelitian: Hiperkolesterolemia merupakan salah satu faktor risiko penyakit jantung koroner (PJK). Diet rendah lemak dan tinggi serat merupakan salah satu upaya untuk menurunkan kadar lemak serum. Apel manalagi mengandung 2,64 % (dari berat segar) pektin, suatu komponen serat yang larut air dan dilaporkan mempunyai efek hipokolesterolemik yang kuat.

Penelitian ini bertujuan untuk menilai apakah apel manalagi yang diberikan dalam diet dapat menurunkan kadar kolesterol dan trigliserida, serta menaikkan kadar HDL-kolesterol, serum kelinci hiperlipidemik. Duabpuluh ekor kelinci New Zealand White, jantan, berumur 6 bulan dan berat badan 3 - 3,5 kg, dijadikan hiperlipidemik dengan pemberian diet kolesterol 0,5% selama 2 minggu. Kelinci hiperlipidemik tersebut selanjutnya dibagi secara acak dalam dua kelompok, masing-masing 10 ekor. Kelompok kontrol diteruskan dengan diet kolesterol 0,5% selama 4 minggu, kelompok perlakuan memperoleh diet yang sama dengan tambahan apel manalagi, dalam waktu yang sama. Pada akhir penelitian berat badan, kadar kolesterol total, trigliserida dan HDL-kolesterol dibandingkan secara statistik dengan uji Student t.

Hasil dan Kesimpulan: Berat badan kelinci kedua kelompok, pada awal dan akhir penelitian, tidak menunjukkan perbedaan. Pada awal penelitian hiperlipidemia), serum kelompok kontrol mengandung (X ± SEM) kolesterol 661,3 ± 34,6 mg/dL, trigliserida 322,2 ± 23,5 mg/dL dan HDL-kolesterol 77,3 ± 4,8 mg/dL. Pada akhir penelitian diperoleh nilai, berturut-turut: 2372,4 ± 101,1 mg/dL; 557,0 ± 30,1 mg/dL; dan 233,8 ± 14,3 mg/dL. Pada kelompok perlakuan kadar lipid serum, masing-masing, pada awal penelitian: 721,7 } 43,7; 301,8 ± 19,3; dan 75,6 ± 3,2 mg/dL, dan pada akhir penelitian: 859,0 ± 49,2; 408,6 ± 22,5; dan 103,6 ± 5,2 mg/dL.

Pengujian statistik menunjukkan bahwa fraksi lipid serum kedua kelompok mengalami peningkatan pada akhir penelitian. Namun fraksi lipid kelompok perlakuan pada akhir penelitian lebih rendah daripada kelompok kontrol ($p < 0,05$). Dengan demikian dapat disimpulkan bahwa diet apel manalagi, yang mengandung pektin, mempunyai pengaruh menghambat kenaikan kadar lipid serum pada kelinci yang memperoleh diet tinggi kolesterol.
Summary
Scope and Method of Study: Hypercholesterolemia is one of the risk factors of coronary heart disease. Low fat and high fiber in the diet can be used as an intervention to reduce serum lipids. Manalagi apple contain 2.64% (of fresh weight) pectin, a water-soluble fiber component which was reported to have a strong hypocholesterolemic effect.

This study was conducted to evaluate if manalagi apple given in the diet of rabbits could decrease serum total cholesterol and triglyceride, and increase HDL-cholesterol in rabbits with hyperlipidemia. Twenty male New Zealand White rabbits, 6 months of age and weighing 3-3.5 kg, were given a 0.5% cholesterol diet for 2 weeks to induce hyperlipidemia. The rabbits were then randomly allocated into 2 equal groups. The control group continues to receive the cholesterol diet, while the treatment group was given manalagi apple (= 5.26% pectin) in addition to the cholesterol diet. After 4 weeks, body weight, serum total cholesterol, triglyceride and HDL-cholesterol in both groups were determined and compared by student t test.

Findings and Conclusions: The rabbits were of similar body weight initially and at the end of the stud period. Serum cholesterol, triglyceride, and HDL-cholesterol (X i- SEM), respectively, of the hyperlipemic rabbits were initially: 661.3 ± 34.6 mg/dL, 322.2 ± 23.5 mgldL, and 77.3 ± 4.8 mg/dL (control group), and 721.7 ± 43.7, 301.8 ± 19.3, and 75.6 ± 3.2 mg/dL (treatment group). At the end of the study period the values of the control group were, respectively: 2372.4 ± 101.1, 557,0 ± 30,1, and 233.8 ± 14.3 mg/dL, whereas in the treatment group they were: 859.0 ± 49.2, 408.6 ± 22.5, and 103.6 ± 5.2 mg/dL.

Statistical analysis indicates an increase of all the lipid fractions in both groups, but those of the treatment group were less severe than the control group ($p < 0.05$). It was concluded that manalagi apple, given in the diet, could inhibit an increase of serum lipids in rabbits given a high cholesterol diet. The increase in HDL-cholesterol could not be attributed to the apple diet.</i>