

Hubungan restriksi vitamin B12 dengan perubahan struktur dan fungsi ginjal ditinjau dari jalur enzim metionin sintase dan metilmalonil-koA mutase pada tikus sprague-dawley. = Vitamin B12 restriction effects on structural and functional changes of sprague-dawley rat s kidney via methionine synthase and methylmalonyl-coA mutase enzymes pathways

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Abstrak

ABSTRAK

Defisiensi vitamin B12 merupakan masalah kesehatan di negara maju dan berkembang. Penelitian ini menganalisis hubungan restriksi vitamin B12 dengan perubahan struktur dan fungsi ginjal. Tikus Sprague-Dawley 18 ekor dibagi menjadi tiga kelompok: 1 kontrol yang diberi pakan standar hewan coba AIN-93M selama 12 minggu; 2 perlakuan-1 P-1 diberi pakan AIN-93M modifikasi tanpa vitamin B12 selama 4 minggu; dan 3 perlakuan-2 P-2 selama 12 minggu. Vitamin B12 plasma total turun dari 529.17 166.51 pg/ml menjadi 426.33 60.59 pg/ml pada P-1 dan 708.70 124.35 pg/ml menjadi 519.16 84.96 pg/ml pada P-2, pada kelompok kontrol meningkat dari 567.79 102.52 pg/ml menjadi 650.26 193.12 pg/ml. Homosistein plasma meningkat pada kelompok perlakuan setelah 4 minggu kontrol vs P-1 = 351.05 110.69 pmol/ml vs 597.09 308.02 pmol/ml dan 12 minggu kontrol vs P-2 = 414.473 224.13 pmol/ml vs 1055.12 651.68 pmol/ml, p

ABSTRACT

Vitamin B12 deficiency is still a health problem in both developed and developing countries. This study was conducted to explore possible relationship between vitamin B12 dietary restriction with kidney structure; histological and physiological changes. Eighteen male Sprague Dawley rats were divided into three groups: 1 control group were fed with standard AIN-93M for 12 weeks; 2 1st treatment group P-1 were fed with cobalamin restricted AIN-93M for 4 weeks; and 3 2nd treatment group P-2 were fed with cobalamin restricted AIN-93M for 12 weeks. Vitamin B12 level decreased from 529.17 166.51 pg/ml to 426.33 60.59 pg/ml in P-1 group and from 708.70 124.35 pg/ml to 519.16 84.96 pg/ml in P-2 group, while it increased from 567.79 102.52 pg/ml to 650.26 193.12 pg/ml in control group after 12 weeks. Plasma Hcy increased in treatment group after 4 weeks control vs P-1 = 351.05 110.69 pmol/ml vs 597.09 308.02 pmol/ml and 12 weeks control vs P-2 = 414.473 224.13 pmol/ml vs 1055.12 651.68 pmol/ml; p