Glycemic index as a predictor of serum HDL-cholesterol concentration

The role of dietary carbohydrate (CHO) in the risk of coronary heart disease (CHD) is less recognized than the association between dietary fat intake and CHD. A previous study has reported that diets with high glycemic indices increase the risk of CHD. This cross-sectional study of middle-aged adults was conducted to determine whether dietary CHO, expressed as glycemic index, affects serum concentrations of lipoprotein (total cholesterol, high-density-lipoprotein [HDL] cholesterol, and calculated low-density-lipoprotein [LDL] cholesterol) and other CHD risk factors.

Dietary, anthropometric, and biochemical data from the 1986–1987 Survey of British Adults (n=2200) were reanalyzed by a multiple regression model, which examined the relation between serum total cholesterol, HDL-cholesterol, and calculated LDL-cholesterol concentrations and various dietary characteristics, including the type of carbohydrate, the glycemic index, and fat intake.

Among the 1420 participants with complete data (721 women, 699 men), there was a significant negative relation between serum HDL-cholesterol concentration and the glycemic index of the diet for both men (regression coefficient, –0.00724 [95% confidence interval [CI], –0.0101 to –0.00434], P=.02) and women (regression coefficient, –0.01326 [CI, –0.0162 to 0.0102], P=.0001).

Linear regression analysis of the dietary CHO data had revealed significant negative relations between HDL-cholesterol concentrations and total CHO intake, starch intake per 1000 KJ and glycemic index, and significant negative relations between total cholesterol concentration and intake of total CHO and starch.

Analysis of the dietary fat data showed significant positive relations between total cholesterol concentration and intakes of saturated fat and cholesterol, and a negative relation between total cholesterol concentration and intake of polyunsaturated fat. The only significant relation between HDL-cholesterol concentration and dietary fat was a positive relation with total fat intake. No other significant relation was found with total cholesterol or LDL-cholesterol concentration or with any other dietary CHO or fat constituent.

The study findings demonstrate that the glycemic index of the diet is the only dietary variable significantly related to serum HDL-cholesterol concentration. The glycemic index of the diet, therefore, is a stronger predictor of serum HDL-cholesterol concentration than is dietary fat intake.


Hepatitis A vaccine effective in preventing secondary infection

The effectiveness of hepatitis A vaccination in preventing infection after exposure to hepatitis A virus (HAV) was investigated in a randomized controlled trial.

The study using attenuated live vaccine was conducted in household contacts of people with sporadic HAV infection (index cases). Households (index cases and contacts) were randomly assigned to the vaccine group or unvaccinated group, according to the study week in which they were enrolled. All household contacts in the vaccine group received vaccination at the time of entry to the study.

During the 45-day study period, secondary infection had occurred in 10 (13.3%) of 75 households (two families had two cases each) in the untreated group and in two (2.8%) of 71 households in the vaccine group. The protective efficacy of the vaccine was 79% (95% confidence interval, 7 to 95). The number of secondary infections among household contacts was 12 (5.8%) of 207 in the unvaccinated group and two (1.0%) of 197 in the vaccinated group. Therefore, 18 individuals had to be vaccinated to prevent one secondary infection.

The findings indicate that hepatitis A vaccine is effective in the prevention of secondary infection of HAV and should be recommended for household contacts of primary cases of HAV infection.


Adding ipratropium bromide to standard therapy for pediatric asthma beneficial

The effect of ipratropium bromide added to the standard treatment of childhood asthma in the emergency department (ED) was assessed in a double-blind, randomized, controlled trial. The study was designed to determine whether the addition of ipratropium to the ED therapy reduces time to discharge, number of nebulizer treatments before discharge, and the rate of hospitalization.
Patients enrolled in the study were older than 12 months. They underwent the standard ED treatment protocol for acute asthma with nebulized albuterol (2.5 mg/dose if weight, 30 kg, otherwise 5 mg/dose) and oral prednisone or prednisolone (2 mg/kg up to 80 mg). A total of 427 patients chosen for the investigation were randomly assigned to receive either ipratropium (250 mg/dose) or normal saline solution (1 mL/dose with each of the first three nebulized albuterol doses). The subjects, 211 patients in the ipratropium group and 216 in the control group, were similar in all baseline measures. Further treatment after the first hour was determined by physicians who were blinded to the subject group assignment.

Of the patients who were discharged from the ED, ipratropium group subjects had 13% shorter treatment time (mean, 185 minutes, vs control, 213 minutes) and fewer total albuterol doses (median, three vs control, four). Admission rates did not differ significantly (18%, vs control, 22%).

The results of the study suggest the beneficial effect of adding three doses of ipratropium to an ED treatment protocol for acute asthma in children. Time to discharge and number of nebulizer treatments were reduced in the overall study group.


### Sibutramine for long-term maintenance of weight loss after a very-low-calorie diet

The authors conducted this placebo-controlled double-blind trial to determine the efficacy of long-term treatment with sibutramine in the maintenance or improvement of weight loss in obese patients who had lost weight with a very-low-calorie diet (VLCD). Sibutramine is a novel serotonin and noradrenaline reuptake inhibitor that, unlike fenfluramine, does not release serotonin.

The patients enrolled in the study had a body mass index greater than 30; those who lost 6 kg or more during a 4-week treatment with VLCD were randomly assigned to 1 year of treatment with sibutramine (10 mg once daily) or identical placebo.

In an intention-to-treat analysis, mean (SD) absolute weight change at 1 year (or study endpoint) was -5.2 (±7.5) kg (in the 81 patients in the sibutramine group and 10.5 (±5.7) kg in the 78 patients in the placebo group (P=0.004). When compared with their weight at study entry (before the VLCD), 86% of patients in the sibutramine group had lost at least 5% of their weight, compared with only 55% of those in the placebo group (P=0.001) at the study endpoint. Similarly, at month 12, 75% of subjects in the sibutramine group maintained at least 100% of the weight loss achieved with VLCD, compared with 42% in the placebo group (P=0.01).

After 1 month on the VLCD, patients treated with sibutramine for 1 year not only maintained their weight loss but also lost additional weight.


### Inhaled PGE₂ attenuates allergen-induced airway responses

The authors assessed the effects of inhaled prostaglandin E₂ (PGE₂) on allergen-induced airway responses and inflammation. Eight mild asthmatics with a dual airway response to inhaled allergen were recruited into a double-blind randomized crossover study comparing the effects of inhaled PGE₂ (100 mg) or placebo, on allergen-induced changes in forced expiratory volume in 1 second (FEV₁) measured for 7 hours; induced sputum inflammatory cells, obtained at baseline, 7 and 24 hours; and methacholine airway responsiveness measured at 24 hours after challenge. Inhaled PGE₂ attenuated the allergen-induced early fall in FEV₁ from 24.4 ± 3.6% after placebo to 10.3 ± 2.5% after PGE₂ (P=0.002), the late fall in FEV₁ from 21.2% ± 2.7% after placebo to 12.6% ± 3.6% after PGE₂ (P=0.03), allergen-induced methacholine airway hyper-responsiveness (P=0.03), and allergen-induced increases in percent sputum eosinophils from 36.3% ± 8.8% after placebo to 21.0% ± 7.3% after PGE₂ (P<0.01), percentage of EG₂+ cells (P<0.02), and percentage of metachromatic cells (P<0.02).

These results indicate that inhaled PGE₂ attenuates allergen-induced airway responses, hyperresponsiveness, and inflammation, when given immediately before inhaled allergen. Gauvreau GM, Watson RM, O’Byrne PM. Protective effects of inhaled PGE₂ on allergen-induced airway responses and airway inflammation. *Am J Respir Crit Care Med* 1999;159:31-36.

### Cartilage-hair hypoplasia associated with increased risk of cancer

An increased incidence of cancer among patients with cartilage-hair hypoplasia (CHH) has been suggested in previous reports. This study further evaluates the association between cartilage-hair hypoplasia (CHH) and the risk of cancer in patients with CHH. The cancer risk was also assessed among the patients (all are healthy gene carriers) and the nonaffected siblings (two of three are gene carriers) of the patients with CHH.

The authors monitored a cohort of 122 patients with CHH identified through two countrywide epidemiologic surveys in 1974 and 1986. Their parents and unaffected siblings were identified through the Population Register Center. This cohort were followed up for cancer incidence to the end of 1995.

A statistically significant excess risk of cancer was noted among the patients with CHH (standardized incidence ratio [SIR], 6.96%; 95% confidence interval [CI], 2.3 to 16), which was mainly attributable to non-Hodgkin’s lymphoma (SIR, 90; 95% CI, 18 to 264). In addi-
tion, a significant excess of basal cell carcinoma was seen (SIR, 35; 95% CI, 7.2 to 102). The cancer incidence among the siblings or the parents did not differ from the average cancer incidence in the Finnish population.

The results of the study confirm an increased risk of cancer in patients with CHH, especially non-Hodgkin’s lymphoma, which is probably attributable to defective immunity. The findings also show that the carriers of the CHH gene are not under markedly increased overall risk of cancer.


Writing about stressful experience reduces symptoms of asthma or rheumatoid arthritis

Nonpharmacologic treatments with little patient cost or risk are useful supplements to pharmacotherapy in the treatment of patients with chronic illness. Research has demonstrated that writing about traumatic experiences has a surprisingly beneficial effect on symptom reports, well-being, and healthcare use in healthy individuals.

The effect of writing about stressful life experiences on the disease status in patients with asthma or rheumatoid arthritis (RA) is assessed in this randomized controlled trial using standardized quantitative outcome measures. The authors chose the two diseases because they are common, cause substantial personal and economic burden, and are chronic conditions affecting everyday life.

A volunteer sample of 112 patients with asthma (n=61) or RA (n=51) received the intervention; 107 completed the study, 58 in the asthma group and 49 in the RA group. Patients were assigned to either write about the most stressful event of their lives (n=71; 39 asthma, 32 RA) or about emotionally neutral topics (n=41; 22 asthma, 19 RA) (the control intervention). All the participants were asked to write for 20 minutes on 3 consecutive days.

Patients with asthma were evaluated with spirometry and RA patients were clinically examined by a rheumatologist. Assessments were conducted at baseline, at 2 weeks, at 2 months, and at 4 months after writing and were done blind to experimental condition.

Patients with asthma in the experimental group showed improvements in lung function (the mean percentage of predicted forced expiratory volume in 1 second [FEV₁] improved from 63.9% at baseline to 76.3% at the 4-month follow-up; P=.001), whereas patients in the control group showed no change. Patients with rheumatoid arthritis in the experimental group showed improvements in overall disease activity (a mean reduction in disease severity from 1.65 to 1.9 [28%] on a scale of 0 [asymptomatic] to 4 [very severe] at the 4-month follow-up; P=.001), whereas patients in the control group did not change. Combining all completing patients, 33 (47.1%) of 70 experimental patients had clinically relevant improvement, whereas 9 (24.3%) of 37 control patients had improvement (P=.001).

The results of the trial suggest that patients with mild to moderately severe asthma or rheumatoid arthritis who expressed their thoughts about stressful life experiences through writing had clinically relevant changes in health status at 4 months compared with those in the control group. These gains were beyond those attributable to the standard medical care that all the participants were receiving. But, whether these health improvements will persist beyond 4 months or whether this exercise will prove effective with other disease, is still unknown. Encouraged by the preliminary results, the authors recommend further research on structured writing and illness.


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