

**Nutritional Status after Major Bowel Surgery—The Effect of Nutritional Support**

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The objectives of the present study were to evaluate the effects of postoperative total parenteral nutrition of patients after major bowel surgery. Patients with cancer ( $n=15$ ) and inflammatory bowel disease ( $n=22$ ) were randomly selected for conventional therapy, including electrolytes and glucose, or to receive total parenteral nutrition starting on the day of operation. The nutrition therapy lasted for 7 days and was planned to offer 35 kcal per kg body weight. The conventional therapy was stopped after normal clinical considerations.

The nutritional status was evaluated using anthropometric measures (height, weight, arm circumference, triceps skinfold), body composition measurements (total body potassium, total body water), blood biochemical assessments (plasma albumin, transferrin, prealbumin, retinol binding protein), 24-h urine analysis (total nitrogen, 3-methylhistidine, zinc) and total number of T-lymphocytes. Arm muscle circumference was calculated from arm circumference and triceps skinfold. The nutritional status was assessed both before surgery and at 1, 2, and 4 weeks as well as 2, 4, and 6 months after surgery.

Signs of a low protein status were seen on admittance to hospital in 59% of the patients with inflammatory bowel disease and in 47% of the cancer patients, as assessed by plasma proteins and total body potassium.

There were no differences in the nutritional markers at any part in the postoperative course between the patients receiving either conventional therapy and those on total parenteral nutrition, except for a smaller weight loss in the nutritionally supported group. The use of urinary 3-methylhistidine excretion as a marker for protein breakdown was also evaluated, together with zinc and nitrogen excretion.

The study is planned to comprise 100 patients and will include immunological considerations and detailed clinical evaluations of postoperative course.

**Acute Effects of Alcohol on Nutrient Status**

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Alcohol abuse constitutes one of the principal nutritional problems of 'western' society. It is likely that it adversely affects a wide range of vitamins and minerals or trace elements. In 6 healthy adult subjects, the effects of 35 g ethanol on zinc, ascorbic acid and folic acid were examined after an overnight fast. Alcohol prevented the fall in plasma zinc which took place during the day when food was eaten ( $P<0.02$  at 1500 hours). This effect of alcohol could not be accounted

for by plasma water shifts. It seems likely that alcohol led to the movement of zinc from the intracellular to the extracellular space. After ethanol, the ingestion of 2 g ascorbic acid resulted in a lower plasma ascorbic acid at 5 ( $P<0.01$ ) and 24 ( $P<0.01$ ) hours. It is not known whether this effect reflected decreased absorption or increased elimination. Alcohol did not significantly modify the diurnal rise in serum folic acid at 1100 and 1500 hours. The known adverse effects of alcohol on folic acid status are presumably mediated by mechanisms other than rapid redistribution between body compartments.

**Alcohol Intake and Fatty Acid Pattern in Serum Lipids and Adipose Tissue in Healthy Men. Edinburgh-Stockholm Study**

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As one part of the Edinburgh-Stockholm study, the relationships between alcohol consumption and fatty acid composition of adipose tissue and serum lipids were investigated. Participants in the study were 107 (Edinburgh) and 82 (Stockholm) randomly selected healthy men, aged 40. The alcohol intake was estimated from a 7-day weighed dietary record followed by an in-depth alcohol interview.

We previously reported [1] that Edinburgh men consumed more alcohol than Stockholm men ( $p<0.001$ ). The most striking difference in fatty acid patterns of serum triglycerides, serum cholesterol esters and adipose tissue was a lower relative linoleic acid content in Edinburgh men ( $p<0.001$ ).

In the combined Edinburgh-Stockholm material, the alcohol intake was negatively correlated with the relative linoleic acid content of serum triglycerides, serum cholesterol esters and adipose tissue ( $p<0.001$ ). These relations were also negatively correlated within each city ( $p<0.005$ )—with the exception of adipose tissue in Stockholm. A significant positive correlation between alcohol consumption and palmitic acid content in adipose tissue was also noted in Stockholm.

Our results obtained in healthy men show similar relationships between alcohol intake and fatty acid pattern as has previously been described in chronic alcoholics. The lower relative linoleic acid content of serum and tissue lipids in men with a higher intake of alcohol could either be due to changes in the composition of the diet or to metabolic consequences of alcohol consumption. The dietary data which are currently being processed will hopefully further elucidate the problem.

1. Logan, R. L. et al.: *Lancet* i: 949, 1978.