

THE IMPORTANCE OF DIETARY MANAGEMENT IN ATHEROSCLEROSIS

Malika Khusanovna Tolibjonova,

DSc, Associate Professor, Department of Propedeutics of Internal Diseases No.1,
Tashkent State Medical University, Tashkent, Uzbekistan.

Email: malikapattahova@gmail.com

Oripov Nuriddin Najmiddinovich,

PhD, Assistant, Department of Propedeutics of Internal Diseases No.1,
Tashkent State Medical University, Tashkent, Uzbekistan

Abstract

The article highlights modern approaches to dietary therapy in the management of atherosclerosis. Several studies indicate that atherosclerosis can be influenced through appropriate dietary interventions. The main direction of dietary therapy is aimed at regulating total caloric intake, the proportion of proteins, fats, carbohydrates, and other nutrients that may contribute to the progression of atherosclerosis. In patients with excess body weight, reducing daily caloric intake remains the primary strategy for weight reduction, independent of macronutrient composition.

Keywords: Nutrition, atherosclerosis, diet, cardiovascular diseases.

Introduction

The significance of nutrition in the prevention of cardiovascular diseases is well established [1,2]. Dietary habits and adherence to a healthy lifestyle represent key factors in preventing complications. Public education on healthy lifestyle principles — including rational nutrition, physical activity, and smoking cessation — is of vital importance. Therapeutic diets exert beneficial effects comparable to pharmacological therapy, while being free from medication-related adverse effects.

In patients with cardiovascular diseases, an appropriate diet in combination with physical exercise can help normalize lipid levels and reduce atherosclerotic stenosis in the coronary arteries (as demonstrated by coronary angiography) (Basukova N.L., Zambrjiskiy O.N., Fomina A.I., Doroshevich V.I.). A therapeutic diet is considered an obligatory component of comprehensive treatment. M.I. Pevzner, one of the founders of dietetics, emphasized that patient nutrition is a fundamental part of therapy and must be coordinated with other therapeutic measures. It is commonly stated that “there can be no rational treatment without a therapeutic diet.”

Healthy eating plays a crucial role in the recovery and prevention of complications in cardiovascular diseases. Therefore, for patients with cardiovascular pathology, healthy nutrition should not be a temporary measure but a continuous, obligatory component of daily life.

Rational nutrition reduces the risk of thrombosis severalfold by normalizing blood pressure and body weight (due to its effects on lipid and glucose metabolism). Excessive salt intake, low consumption of fruits and vegetables, and intake of animal fats lead to unbalanced nutrition and



excess body weight. Ensuring adequate intake of essential nutrients and diversifying the diet with various food products is also important.

The direct influence of nutritional factors on atherogenesis, as well as their indirect effects through dyslipidemia, arterial hypertension, and hyperglycemia, has been well documented.

A diet rich in monounsaturated fats significantly improves insulin sensitivity compared with a diet rich in saturated fats [3], particularly during the postprandial period due to the reduction in triglyceride levels. A decrease in triglyceride levels is also observed when consuming high doses of long-chain n-3 polyunsaturated fatty acids. However, achieving this effect exclusively through natural foods is not always possible; therefore, pharmacological supplements or foods fortified with n-3 polyunsaturated fatty acids may be required [3,4].

In patients with severe fasting hypertriglyceridemia, dietary fat intake should be markedly restricted (to around 10% of daily caloric intake). High fructose intake increases plasma triglycerides by 15–20%. The primary source of fructose is sucrose; a disaccharide composed of glucose and fructose [5].

Weight loss improves insulin sensitivity and reduces triglyceride levels. Some studies show a 20–30% reduction in triglycerides following weight loss, but this effect persists only until body weight returns to baseline [6]. Alcohol consumption also affects triglyceride levels. Even minimal alcohol intake in patients with hypertriglyceridemia may further elevate triglycerides. Population-based data show that alcohol consumption (10–30 g/day of ethanol) unfavorably increases serum triglycerides [7].

Saturated fatty acids increase low-density lipoprotein (LDL) levels, while trans fats decrease high-density lipoprotein (HDL) and increase LDL. In contrast, monounsaturated fats have minimal or no effect on HDL levels. n-6 polyunsaturated fatty acids may slightly reduce HDL levels. Overall, n-3 fatty acids can increase HDL levels by 0.08–0.15 mmol/L (3.1–6 mg/dL) [8]. Smoking cessation also increases HDL levels [9,10].

The European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS) have developed universal dietary recommendations aimed at reducing cholesterol levels and slowing the progression of atherosclerosis. These recommendations include limiting all types of fats, avoiding fats released during frying of meat products, and preferring poultry meat. Dairy recommendations include low-fat kefir and cheese. Recommended fish include lean varieties (cod, flounder) and oily fish (herring, mackerel, sardines, tuna).

All types of vegetables, legumes, and olives are recommended. Whole-grain breads, cereals, oat-based products, rice dishes, and yeast-free breads are preferred. Oat-based biscuits and baked rusks are also included in the diet plan. Recommended drinks include tea, coffee, mineral waters, non-sweet beverages, and sugar-free fruit juices. Cream, mayonnaise, and full-fat cheeses are prohibited. Adherence to a cholesterol-lowering diet should be lifelong. A well-structured daily diet not only improves mood but also serves as one of the best measures to prevent associated diseases.

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