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ORGANIZATION OF PATIENT NUTRITION AND QUALITY CONTROL

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ABSTRACT: This article describes the basic principles of organizing patient nutrition in treatment and prevention institutions, the clinical importance of therapeutic nutrition, and the sanitary and hygienic requirements for menu planning, the reception and storage of food products, and the preparation and distribution of meals. The duties of the physician, dietitian, diet nurse and ward nurses in the control of food quality are also considered. The analysis is based on educational materials on general hygiene and medical ecology, food safety guidance of the World Health Organization and the Food and Agriculture Organization, and the sanitary rules and hygienic norms of the Republic of Uzbekistan. It is shown that nutrition in a hospital is not an ordinary household service but an integral part of the treatment process: a nutrition plan that corresponds to the age, diagnosis, metabolic needs and general condition of the patient supports the effectiveness of treatment, helps to prevent complications and promotes recovery. Quality control must cover all stages from the receipt of products to the consumption of the meal by the patient, and organoleptic assessment alone cannot guarantee microbiological safety. Effective control depends on the cooperation of physicians, dietitians, nurses, kitchen staff and personnel responsible for sanitation.

Keywords: therapeutic nutrition; diet; menu; food safety; sanitary and hygienic requirements; quality control; hospital kitchen; nursing care.

INTRODUCTION

Nutrition is one of the basic factors necessary for maintaining human health, renewal of tissues, the activity of the immune system and energy metabolism. During illness, the need of the body for nutrients may change: in some cases the demand for energy and protein increases, while in other situations the intake of salt, fluid, fat or some carbohydrates has to be restricted. For this reason, nutrition in a hospital is considered not an ordinary household service but an important part of the treatment process.

If the nutrition of a patient is organized incorrectly, nutritional deficiency, dehydration, weakening of immune defense, slower wound healing and longer treatment may be observed. In contrast, balanced and safe nutrition helps the body to recover, supports the results of drug treatment and improves the quality of life of the patient. Food safety is an additional requirement, since food may be a route for the spread of infections and a carrier of biological and chemical hazards [1, 6].

The aim of this article is to summarize the main directions of organizing patient nutrition in treatment and prevention institutions, evaluating the quality of meals and hygienic control. The article was prepared for educational purposes; the diet of a specific patient must be determined by the treating physician or clinical dietitian.

To prevent foodborne infections and poisoning in a hospital, a systematic approach based on hazard analysis is necessary. It includes identification of hazardous stages, their control, training of staff, implementation of a cleaning and disinfection plan, pest control and keeping of monitoring documents.

Separation of raw and ready products, correct hand washing, use of clean water, storage of products at the appropriate temperature, sufficient cooking and safe transport of ready food are the main preventive measures. Food workers should not conceal signs of illness and should undergo the prescribed medical examination.

If the safety of a product or meal is in doubt, its distribution is stopped, the responsible person is informed and an investigation is carried out in accordance with the safety procedure of the institution. If similar gastrointestinal symptoms appear in several patients after a meal, the situation must be promptly reported to the medical and sanitary officials.

This is a scientific educational article of a narrative type. It is based on the analysis of educational materials on general hygiene and medical ecology, the food safety guidance and educational resources of the World Health Organization and the Food and Agriculture Organization of the United Nations, and the sanitary rules, norms and hygienic standards of the Republic of Uzbekistan together with the internal regulations of institutions. No clinical observations or laboratory measurements were carried out for this article.

METHODS

The organization of patient nutrition was analyzed along the path of food from planning to consumption: assessment of the nutritional status of the patient, menu planning, nutrition in specific clinical conditions, reception and storage of products, preparation and distribution of meals, quality control, the duties of the medical staff and the prevention of foodborne hazards. Following the general principle of sanitary-hygienic analysis, the practice at each stage is considered against normative requirements.

Therapeutic nutrition is the planning of the diet taking into account the disease, clinical condition, age, body weight, physical activity and nutrient needs of the patient. Its main tasks are to provide the body with sufficient energy and the necessary nutrients, to reduce metabolic disturbances, not to overload the affected organ or system, and to support recovery.

The important principles of therapeutic nutrition are physiological completeness, balance of nutrients, adaptation to the disease, safety, good digestibility and acceptance by the patient, and an individual approach. The diet should be as varied as possible and cover the needs for protein, fat, carbohydrate, vitamins, minerals and fluid. Restrictions are applied only when clinically necessary.

The nutritional status of the patient is assessed at the initial examination. For this purpose, recent changes in weight, appetite, ability to chew or swallow, bowel function, fluid intake and existing diseases are determined. When necessary, laboratory indicators and special nutritional screening tools are used. If a risk of nutritional deficiency is identified, the medical team prepares an individual plan.

The menu is prepared in accordance with the diagnosis and the treatment plan of the patient. It takes into account the type of dishes, portion size, meal times, energy value and the main nutrients. When the menu is prepared, the patient's allergies, intolerances, cultural and personal eating habits, difficulty swallowing and possible interactions with drugs are considered.

Meals are usually organized in a fixed order during the day, but the number of meals and portion size may be changed depending on the condition of the patient, the disease and the recommendation of the physician. Smaller, more frequent portions may suit patients with reduced appetite, and in swallowing disorders the consistency of the food is adapted on the recommendation of a specialist.

The menu is based not only on calories but also on the quality of nutrients. Protein sources help to preserve muscle and tissues, carbohydrates provide energy, and fats provide energy and help the absorption of fat-soluble vitamins. Vegetables and fruit are a source of vitamins, minerals

and dietary fiber. The amount of fluid is determined according to the function of the heart and kidneys and other clinical conditions.

Although diet names and numbers have been used historically in various educational sources, in modern practice nutrition is determined more by the individual clinical needs of the patient. It is therefore not correct to apply an old diet table identically to all patients.

RESULTS

Nutrition in different clinical conditions

In diseases of the gastrointestinal tract, the composition of food, portion size and method of preparation are selected according to symptoms. Boiling, stewing or steaming may be well tolerated by some patients, but there is no single "light diet" for all diseases: acidity, bowel function, pain, nausea and other signs are assessed by the physician.

In diabetes mellitus, the nutrition plan is adapted to glucose control, the regimen of drugs or insulin, physical activity and other factors. A balanced distribution of carbohydrates during the day, the choice of fiber-rich foods and the restriction of sweet drinks are often useful. However, strict restrictions or skipping meals may increase the risk of hypoglycemia, so an individual plan is prepared with a medical specialist.

In kidney or heart disease, special attention to the amounts of sodium, potassium, phosphorus and fluid may be required. Restrictions are determined according to laboratory results, the stage of the disease and the medicines taken. Sharp reduction of fluid or minerals without medical advice may be harmful.

In the postoperative period, the resumption and expansion of nutrition depend on the type of surgery, bowel function, nausea, swallowing safety and the general condition of the patient. When possible, timely restoration of nutrition on the instruction of the medical team is sought. In severe cases, when oral nutrition is insufficient, enteral or parenteral feeding is considered by specialists.

Reception and storage of food products

The quality and safety of the products brought to the hospital kitchen must be checked before the preparation of meals begins. At reception, the appearance of the product, packaging, expiry date, labeling, necessary documents and transport conditions are evaluated. Products that are suspicious, show signs of spoilage or do not meet the established requirements are not used.

Perishable products are stored in appropriate cold conditions. Raw meat, poultry, fish and ready meals are separated from each other to prevent the transfer of microorganisms from raw products to ready food. Products are not placed directly on the floor, and storage areas must be clean, ventilated and protected from pests. Temperature control is recorded in the prescribed order.

In the use of products, the principle that the product with the earliest expiry date is used first is applied. Storerooms and refrigerators must have a system that allows the name of the product, the date of arrival and the expiry date to be followed. Cleaning agents and chemicals are stored separately from food.

Sanitary and hygienic requirements for preparation and distribution of meals

The kitchen premises are organized so as to ensure the sequence of technological processes. The stages of product reception, primary processing, cooking, storage of ready meals and distribution should reduce the risk of cross-contamination. Work surfaces, knives and cutting boards are separated according to the type of product and, when necessary, washed and disinfected.

Employees must observe hand hygiene and wear clean special clothing, and the question of their admission to work in the presence of signs of illness must be considered in the prescribed order. Hair should be covered, nails should be tidy, and personal hygiene requirements must be

strictly followed while handling food. Medical examinations and hygienic training of employees are organized in accordance with the current norms [4, 5].

Meals are cooked sufficiently according to the established technology. Keeping ready food at room temperature for a long time may create conditions for the multiplication of microorganisms, so control of temperature and time is important during cooking, hot or cold holding and distribution. Ready meals are transported in closed, clean containers and are given to the patient in accordance with the prescribed diet.

Before distribution, the appearance, smell, taste, temperature and portion size of the ready food are checked. When necessary, a sample of the meal may be kept in the prescribed order; sampling and storage requirements are performed according to the current sanitary rules of the institution. It is not permitted to mix leftover food with freshly prepared meals or to serve again food whose safety is unknown.

DISCUSSION

Nutrition as part of treatment

The analysis shows that the organization of patient nutrition is an inseparable part of care in a treatment and prevention institution. A nutrition plan must correspond to the clinical condition and individual needs of the patient, provide sufficient nutritional value and meet the requirements of food safety. For this reason, all stages must be controlled, from the receipt of products, preparation and distribution of food to its consumption by the patient. A meal that is correctly prepared in the kitchen but not eaten by the patient does not fulfil its therapeutic task, which is why observation of actual intake belongs to quality control as much as the inspection of the kitchen does.

The individual character of nutrition is also reflected in the approach to diets. Historical diet numbers remain in educational sources, but applying one standard table to all patients does not take into account differences in diagnosis, stage of disease, medicines and tolerance. In the diseases considered above (gastrointestinal diseases, diabetes mellitus, kidney and heart disease, the postoperative state), the same general rule appears: restrictions should be based on clinical necessity, determined by a specialist and reviewed when the condition changes, because arbitrary restriction may itself cause harm.

Limits of organoleptic control and the role of systematic control

Sensory assessment of food is simple and available at every stage, but it does not detect dangerous microorganisms that do not alter the smell or appearance of food. Reliable control therefore combines organoleptic assessment with documents, temperature and time records, sanitary procedures and laboratory examination when needed. A hazard-analysis-based approach makes such control systematic by identifying the stages at which a hazard may arise and defining how each is controlled, and recording the results so that deficiencies can be corrected.

Shared responsibility

The effectiveness of control depends on the cooperation of physicians, dietitians, nurses, kitchen staff and personnel responsible for sanitation. Regular assessment of the nutritional status of patients, checking the quality of the menu, observance of hygienic rules and timely elimination of the identified deficiencies reduce the risk of nutritional deficiency and food-related hazards. The role of the patient should not be forgotten: information on allergies, disliked products and discomfort after meals is available only from the patient. Hygienic training of the staff who handle food, as part of hygiene education [4], and attention to the working conditions in the kitchen [5] support the stable performance of these duties.

Scope and limitations

This article is a narrative educational analysis and does not contain clinical or laboratory data. Numerical values, such as storage temperatures, cooking times and nutrient quantities, were intentionally not quoted, because they are established by the current sanitary rules, technological documents and the individual prescription of the physician. The sample menu is an illustration and not a therapeutic recommendation. Further studies in specific hospitals, including observation of actual food intake and the results of sanitary examinations of the kitchen, are needed to evaluate how the described measures affect the nutritional status of patients and the frequency of foodborne incidents.

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