INVITED SPEAKER ABSTRACTS

IS001

THE EFFECT OF OBESITY ON THE CORONARY CARDIOVASCULAR SYSTEM AND EARLY COMPLICATIONS AFTER CORONARY BYPASS SURGERY

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Obesity is increasing at epidemic rates in both adults and children and is generally recognized as a risk factor for the development of different forms of cardiovascular disease such as coronary artery disease (CAD), heart failure, stroke, endothelial dysfunction, systolic and diastolic dysfunction and atrial fibrillation. The aim of this presentation is to determine the importance of obesity in patients referred for coronary bypass surgery (CABG) and to retrospectively analyze whether there is an association between obesity and early coronary surgery outcome. The study included all patients who underwent isolated CABG in our clinic within 15 years. Patients who underwent additional procedures with CABG were excluded from this study and only patients who underwent coronary bypass were included. Body Mass Index (BMI) between 18.5-24.9 kg/m2 was considered as Ideal Weight, between 25-30 kg/m2 as Overweight, BMI > 30 kg/m2 as obese and BMI > 40 kg/m2 as morbidly obese. Since the number of patients with BMI above 40 kg/m2 was very small in our entire study, we studied BMI 30 kg/m2 and above as a group for statistical convenience. There is a direct relationship between body mass index (BMI) and the incidence of Coronary Artery Disease (CAD), but once CAD is determined, the relationship between BMI and prognosis becomes more complex. Cardiac surgeons recognize obesity as a risk factor for adverse perioperative outcomes following CABG. An increased incidence of complications such as sternal and superficial wound infection and saphenous vein exit site infection has been observed. Patients with high BMI have more frequent and more advanced atherosclerotic vascular lesions than those with normal body weight. Although many important studies have shown that obesity is associated with poor outcome, several recent studies have surprisingly even suggested that a high BMI is beneficial (the obesity paradox). We believe that this is a statistical fallacy. In our retrograde study, we examined various risk factors in BMI groups: We retrospectively compared 1625 patients who underwent isolated coronary bypass surgery among 2238 patients who underwent isolated coronary bypass (CABG) among 4400 patients who underwent isolated open heart surgery in a 15-year period between 2009 and 2023:Demographically: age, gender, comorbidities: hypertension, diabetes mellitus, previous MI left ventricular ejection fraction (EF), complications: postoperative renal failure, atrial fibrillation, length of intensive care unit stay, length of service stay, mortality.

IS002

ANTI-INFLAMMATORY NUTRITION AND ITS IMPORTANCE

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The basis of holistic health is the digestive system. Paying attention to what we eat and drink, which directly affects the digestive system, is important for maintaining and improving health. Inflammation is at the root of holistic health disorders. In fact, inflammation is part of the body's response to internal and external environmental stimuli, eliminating the incoming stimuli and regulating tissue physiology. The activation of inflammatory reactions by the immune system is vital for the maintenance of cellular integrity, i.e. quality ageing, in an environment of aggression. It is a complex and finely tuned mechanism, a double-edged sword. Inadequate response results in infection and cancer, while overactivity can lead to diseases such as arthritis, diabetes, atherosclerosis, ischemic heart disease, heart failure, stroke, inflammatory bowel disease or Alzheimer's disease. In both acute and chronic inflammation, the sympathetic nervous system, the immune system and the hypothalamic-pituitary-adrenal axis are activated in a systemic response to the stressor, resulting in disease-related

malnutrition. As a result, it is reported that plasma antioxidants, free electron scavengers, cofactors, and enzyme activities involved in ROS detoxification decrease with malnutrition and the oxidant-antioxidant balance is disrupted. Due to their antioxidative and anti-inflammatory properties, various micro and macronutrients play a key role in maintaining redox homeostasis. Trace elements such as copper, iron, zinc and selenium act as important cofactors of antioxidative enzymes such as catalase, glutathione peroxidase and superoxide dismutase. On the other hand, vitamins A, E, C and D regulate non-enzymatic antioxidative reactions by directly scavenging radicals, breaking the lipid peroxidation chain and interrupting oxidative reactions. Of the macronutrients, the polyunsaturated fatty acids omega-3 and omega-6 fatty acids cannot be synthesized by the human body and must be taken from outside. Other macronutrients are indigestible carbohydrates and fiber. Short-chain fatty acids are produced by anaerobic fermentation of these by the microbiota in the large intestine. In a healthy plate, the macronutrient balance is 3,2,1 for carbohydrate, protein and lipid respectively. Variety and access to natural and clean food is essential in an anti-inflammatory diet. A healthy diet can counteract inflammation if it is sustainable and accompanied by movement, stress management, proper breathing and quality sleep.

IS003

EPIGENETIC CONTROL OF METABOLISM AND EPIGENETIC EFFECTS OF NUTRITION

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The epigenetic control of metabolism emphasizes that changes in genetic structure are influenced not only by inherited factors but also by environmental elements. Epigenetics refers to alterations that regulate gene activity, impacting cellular functions. Genes governing metabolism can be influenced through various epigenetic mechanisms. Nutrition plays a crucial role in the epigenetic control of metabolism. Diet can affect epigenetic processes such as DNA methylation, histone modifications, and microRNA expression. For instance, nutrients like folate, methionine, and B12 vitamin play a role in the transfer of methyl groups, influencing gene expression and affecting processes like energy metabolism, lipid balance, and insulin sensitivity. Moreover, poor nutrition or deficiencies can contribute to metabolic diseases by inducing epigenetic changes. Therefore, adopting a healthy diet can induce positive epigenetic alterations, even in individuals with a genetic predisposition, promoting a balanced and healthy metabolism. In conclusion, the epigenetic control of metabolism involves the intricate interplay between genetic factors and environmental elements, particularly nutrition. Healthy dietary habits can support the harmonious functioning of metabolism and potentially induce favorable epigenetic changes, even in individuals with a genetic predisposition.

IS004

REFLECTIONS OF FOOD SUPPLEMENTS ON THE CLINICAL LABORATORY

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We can say that the aphorism “Let your food be your medicine and your medicine be your food” is the effect of nutrition on health and that we can overcome many diseases with nutrition specific to the individual and the disease. We can call it a “nutrition renaissance” as the relationship between nutrition and microbiota has been revealed in a striking way for many diseases whose pathogenesis has been understood in recent years. It has been reported that many foods and food ingredients found in our kitchen, such as turmeric, garlic, carrots, eggplant, kiwi and honey, have regulatory effects on both natural and acquired immunity. All food categories such as fruits, vegetables, grains, meat, fish, dairy products are all functional foods. According to the World Health Organization, probiotics; They are “live microorganisms that have beneficial health effects when taken orally in sufficient amounts.” They show immunomodulatory activity against different diseases such as allergic disease, colitis, rheumatoid arthritis, colorectal cancer, various inflammatory diseases, depression and anxiety. Intestinal dendritic cells contribute to the maintenance of the IgA isotype by producing IL-6, retinaldehyde dehydrogenase (RALDH) and

nitric oxide (NO), and intestinal epithelial cells produce IL-6 and TGF-β. Many studies have shown that probiotics and prebiotics can be used to control many inflammation-mediated diseases (ulcerative colitis, allergic asthma, dermatitis, cancer) due to their modulatory effects on pro-inflammatory and anti-inflammatory responses. However, it is very important to correctly establish the dynamic between all dietary food components and functional foods (probiotics, prebiotics, minerals, vitamins). With the contribution of epigenetic factors and functional microbiome, an effective signaling network can be established by probiotics and prebiotics, and this network can participate in the control of the systemic inflammatory response through cell-cell communication. Vitamin C can be achieved by stimulating antibody synthesis, acting on T and B lymphocytes, and regulating the phagocytosis activity of NK cells and macrophages. Recent studies have shown that intravenous glutathione may not be beneficial in the short term and that it does not have the necessary FDA and WHO approvals. In this sense, we can say that although food supplements may be beneficial, they may also cause a possible respiratory burst or cytokine explosion and/or liver damage, so their use should be controlled and in consultation with a specialist.

IS005

HOW SHOULD WE EAT FOR OUR BRAIN HEALTH? AMINOACIDS AND MICRO NUTRIENT USE

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In recent years, the change in our lifestyle, excessive stress, toxins, infections and wrong eating habits have resulted in increased cancer, autoimmune, cardiovascular, metabolic and neuro-psychiatric diseases. Nutritional protocols with high nutritional value, macro/micronutrient balance, containing healthy oils rich in omega-3, lower carbohydrate content, emphasizing the consumption of sufficient fruits, vegetables, fish and fiber, with a low inflammatory index and high antioxidant content, can positively change brain functions. Western diet, fast food, excessive consumption of glucose, fructose, acidic drinks and foods, and problems in the digestive system increase the susceptibility to neurodegenerative diseases. It is known that there are deteriorations in the levels of neurotransmitters (which are mainly amino acids), the structures of neurons and in neuromuscular transmission in mental and neurodegenerative diseases. In Parkinson›s and Alzheimer›s patients, hyperactive and autistic children have disturbed metabolic pathways and blood and urine amino acid profiles and homocysteine levels. Most of these amino acids have many important functions beside the neurological system such as hormone production, bone/muscle structure, immune system functions and wound healing. Brain functions can change with the imbalance of inhibitory and stimulatory amino acids. Many micronutrients, especially B-group vitamins and minerals such as zinc, copper, selenium, magnesium, iodine, and sphingomyelins (phosphatidylserine and choline) are involved in neuron structure and neurotransmitter synthesis. Deficiencies or imbalances in macro/micronutrients and mitochondrial dysfunction increase neurological damage. The gut-brain axis is also supported by regulating the intestinal microbiota, preventing constipation, and using the necessary prebiotics, probiotics and postbiotics (metabiotics). Mediterranean type nutrition, ketogenic diets, GAPS and Walsh protocols are frequently used protocols to support neurocognitive balance. In particular, the MIND (Mediterranean Intervention for Neurodegenerative Delay) protocol, which is a combination of Mediterranean and DASH (Dietary Approach to Systolic Hypertension), is one of the most effective nutritional recommendations for brain health.

IS006

FOOD SENSITIVITIES AND MICROBIOTA IN HEALTHY LIVING

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Alcat test leukocyte activation test new generation food and chemical sensitivity test with alcat test, it is possible to optimize weight management and health when foods or chemicals that cause inflammation are detected and eliminated. WHAT IS ALCAT TEST? ALCAT Test is a test that evaluates the cellular im- mune response of the body to foods, food additives, drugs. It directly measures the immune cell response. For this reason, it is one of the new generation tests that most accurately evaluate the cellular sensitivities caused by foods and chemicals. The ALCAT Test has been scientifically validated by Yale University. AL- CAT is a test with proven accuracy and effectiveness. Prof.W.Z.Mehal,MD,PhD What may alcat test be a solution? Alcat Test; Gastrointestinal problems of unknown origin (unknown cause), indigestion, gas, bloating, reflux, constipation, diarrhea, fibromyalgia, joint stiffness, headache, chronic fatigue, depression, muscle-joint pain, allergies, acne, eczema, rash, itching and such that It can be the solution for common chronic inflammatory complaints. With the ALCAT Test, when foods or chemicals that cause inflammation are detected and eliminated, chronic inflammation problems can be solvedand health can be optimized. Activation of immune system cells causes inflammation. The immune system is constantly stimulated not only by pathogens that cause disease, but also by foods, toxins and chemicals. The chronic response to foods and these substances may cause chronic inflammation and diseases related to chronic inflammation (cardiovascular, neurological, allergic, rheumatic autoimmune diseases, etc.). The Alcat test detects cell activation by evaluating changes in the volume, size and number of immune cells. How ıs alcat test applıed? Blood sample taken from the patient into special tubes is used for ALCAT test In ALCAT 100 food sensitivity package; Along with various foods, herbal teas, gluten, gliadin and candida are tested. If desired, chemicals, phytochemicals, fungi can be added to the test and the sensitivity of 450 substances can be checked at the same time. ALCAT 50 is a sensitivity package developed for children. The human body is contains to a variety of microorganisms, the majority of which are bacteria, including fungi, viruses, and other protozoa. Bacteria and other microorganisms are generally known for their disease-causing effects. However, there bacteria that do not have a disease-causing effect but also bacterias are beneficial for us. We can lead a harmonious, balanced life with these beneficial bacteria. As long as the beneficial bacteria do not disappear and leave their place to harmful, disease-causing bacteria. The whole community of microorganisms that we share our body with is called Microbiota, the total gene structure of this community and the environment with which it interacts are called Microbiome. The Microbiota we live with contains ten times more microorganisms than human cells and one hundred and fifty times more genes than the human genome. The human microbiota is located on the skin, reproductive organs, respiratory and most often intestinal tract. Due to its large surface area and rich nutrients for microorganisms, our intestines contain the densest and most diverse microorganism community in our body. The microbiota, which includes a large number and variety of microorganisms in healthy individuals, begins to form naturally after birth. It varies according to nutrition, genetic structure, age and geographic region. Intestinal microbiota plays a pretty complex and active role on our physiological, metabolic and immune systems. Many chemical reactions by gut bacteria play an important role. In this way, compounds that humans cannot digest on their own are digested by bacteria. This allows us to benefit from a wider range of foods. The intestinal microbiota is also important for the formation and development of the immune system. The developing immune system learns to distinguish between beneficial and harmful bacteria. While it tolerates beneficial bacteria, it gives a defensive response against disease-causing ones. The ideal structure of the intestinal bacterial flora is one of the main elements of a healthy life. There are indications that the gut microbiota may affect sleep patterns, mood, and some other behaviors. For the reasons listed above, the gut microbiota is now defined as a new ‘metabolic organ’. Beneficial Bowel Bacteria by making the environment acidic, they prevent the proliferation of harmful bacteria causing disease, the formation of inflammation in the intestinal mucosa, the passage of toxic products from the intestines to the blood, and thus the formation of diseases. They help break down and absorb indigestible carbohydrates through the enzymes they produce. Fermented carbohydrates are converted into short-chain fatty acids. These are also used as energy sources.

Calcium, magnesium and iron absorption increases. Proper bowel movements are ensured. They contribute to the production and absorption of vitamins B1, B2, B6, B12 and K. They play a role in the early development and lifelong functioning of the immune system by stimulating the lymphatic tissues located near the intestinal mucosa. They enable the immune system to respond only to disease-causing microorganisms. Does the bowel microbiota change? Bacteria settle in the digestive tract as soon as the baby is born. Bacteria that settle first are recognized by the immune system. Therefore, the bacteria that settle first determine the content of the intestinal bacterial flora that will exist throughout the person's life. The mode of birth, diet, and genetic factors affect the microbiota in infants. Intestinal microbiota content changes after chronic digestive system diseases, infections and antibiotic use. The change in the balance of healthy and beneficial microorganisms in the intestine in favor of harmful microorganisms and the deterioration of the ideal balance have been associated with many acute and chronic diseases. For this reason, it is important to determine the current status of the person by analyzing the microbiota in the stool. Diseases related with impaired bowel microbiota diseases associated with impaired gut microbiota diabetes, obesity, metabolic syndrome allergic diseases (rhinitis, asthma, atopic eczema) functional bowel diseases (irritable bowel syndrome, infantile colic) inflammatory bowel disease, necrotizing colitis autism, depression, anxiety disorder rheumatoid arthritis, non-al- coholic liver disease colon cancer. How to detect bowel microbiota content? Just as each person has a different genetic makeup, they may have a different microbiota. The characteristic features of bacteria are encoded in their genes. In this way, it is possible to identify the bacteria that make up the intestinal microbiota by using advanced molecular genetic analyzes. In the stool sample, it is possible to have information about the intestinal microbiota by detecting the bacte- rial genes with the newly developed DNA sequencing method. For this test, the stool sample must be taken into the sterile container you provide from our labo- ratory and delivered to our laboratory quickly. The Contribution to Our Health Which Is Knowing the Content of Bowel Microbiota The key to a healthy and long life is a healthy gut structure. Therefore, there are numerous benefits to knowing the personal gut microbiota content. If harmful microorganisms that can cause disease in the intestine are more intense, the balance of the microbiota is disrupted and the situation we call dysbiosis occurs. After the influence of foreign bacteria in a dysbiotic environment, an uncontrolled inflammation process begins. This can lead to the development of many diseases. In such a case, personalized advice and treatment approaches are possible, and solutions such as diet regulation according to the presence of increased or decreased bacteria, and the use of appropriate probiotics and prebiotics can be suggested.

IS007

FOOD ADDITIVES AND CANCER

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Cancer, a disease on the rise, is now one of the leading causes of death, trailing just behind cardiovascular diseases. The increasing incidence of cancer is often associated with factors in our environment, including the substances added to our food. Some of these additives are believed to have potential links to cancer. Despite safety limits set by international experts, there's a concern that certain food additives might elevate the risk of developing cancer. The International Agency for Research on Cancer has categorized specific food additives, such as salts of cyclamic acid, butylated hydroxytoluene, saccharin and its salts, talc, carrageenan, nitrate, and nitrite, as having potential carcinogenic properties. Furthermore, it is noteworthy to highlight that food additives such as allura red AC, acesulfame potassium, carboxymethyl cellulose, xylitol, propionic acid, and its salts may potentially exert carcinogenic effects when ingested in elevated concentrations. Various types of cancer, including colon, prostate, breast, and others, have been associated with these additives. While additives are considered safe within recommended limits, there's a

possibility of chemical changes when they interact with other substances in the food. Combined use of additives might have a negative effect, and the production process could lead to undesired by-products. Factors like improper storage and excessive consumption beyond recommended levels can also contribute to unforeseen risks. It's important to approach additives, especially those showing potential harm in larger amounts or enhancing the effects of other cancer-causing substances, with caution. This careful consideration helps us understand the potential increase in cancer risk associated with these additives.

IS008

METABOLIC SECRETS OF LONGEVITY

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Throughout human history, the quest for immortality or prolonged life has been a subject of curiosity. While mythological objects and events have been used to describe this pursuit, the Enlightenment era marked a shift towards rational inquiry and scientific discoveries. The exploration of immortality has evolved, often intertwining with advances in medicine and the idea of extending human lifespan. Numerous international studies indicate the relationship between longevity and factors such as microbiota, genetics, epigenetics, hormones, nutrition, metabolism, and lifestyle. Several metabolic pathways play a role in influencing longevity, including Peroxisome Proliferator-Activated Receptor Gamma Coactivator 1 Alpha (PGC-1 alfa), insulin, Mammalian target of rapamycin (mTOR), Kelch-like ECH-associated protein 1/Nuclear factor erythroid 2-related factor (Keap1/NRF), Sirtüin (SIRT) and AMP-activated protein kinase, (AMPK). It has been established that factors like exercise and calorie restriction regulate the activities of these pathways. They exert their effects through various effector pathways, particularly oxidative stress, metabolic cycles, autophagy, mitophagy, and the cell cycle. When examining the average lifespan of past centuries, it is evident that humanity is making progress in the struggle for an extended lifespan. However, it is crucial to emphasize that the increased lifespan should be spent in a healthy manner, presenting a new challenge for humankind. In this context, detailed investigations into metabolic pathways, including those mentioned above, serve as essential components in achieving this goal.

IS009

BIOCHEMICAL APPROACH TO CANCER METABOLISM AND SPECIFIC TESTS

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Looking at the history of cancer research; in 1887 Freund announced that cancer cells could die when glucose intake was restricted. Then Muller in 1890, Wassermann in 1912 and Warburg in 1924 conducted experimental studies showing the importance of the glycolytic pathway and metabolic processes in cancer pathogenesis. Today, we know that in the process of carcinogenesis, intestinal flora is disrupted, chronic vitamin and mineral deficiency, oxidant stress and general inflammation increase, and certain oncogenes further activate the glycolytic pathway and mutations occur in TCA cycle enzymes. Today, tests are available to measure both vitamin and mineral levels and TCA cycle metabolites and to monitor mitochondrial function.

Centuries ago, Hippocrates said that all diseases start in the gut. Bacteria living symbiotically in the gut both protect the intestinal barrier and prevent the passage of toxins into the blood and contribute to the regulation of metabolism in the human body with a number of vitamins and metabolites they synthesize. The diversity and harmony of this flora is very important for the proper functioning of the immune system. A strong and balanced immune system is important for both cancer prevention and autoimmune diseases.

In cancer cells, uncontrolled uptake of amino acids and glucose, increased glycolysis, changes in genes with metabolic functions and an increase in lactate in the microenvironment lead to acidosis. Increased lactate also increases invasion and metastasis. Suppression of oxidative phosphorylation in cancer cells, activation of the "Pentose Phosphate Pathway" where five-carbon sugars are produced for nucleotide synthesis, slowing of fatty a cid oxidation, increased

glycolysis and gluconeogenesis are known.

Some mutations in mitochondrial DNA and mutations in the TCA cycle enzymes Isocitrate Dehydrogenase, Succinate Dehydrogenase and Fumarate Hydrolase are known to be present. In our study in patients with Glioblastoma, IDH mutation was found in some patients. Positive results were obtained in terms of both resistances to chemotherapy side effects and prognosis in patients receiving a diet rich in vegetables, moderate protein, flavonoids, probiotics and oilseeds.

It is predicted that the quality of life of patients with cancer will be higher with medical oncologists, surgeons and biochemistry specialists who interpret metabolism-specific blood tests in the follow-up of cancer patients in the future.

IS010

CONTRIBUTIONS OF POLYPHENOLS TO HEALTH AND CANCER TREATMENT

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Polyphenols are plant-based compounds noted for their biological activities, including antioxidant, anti-inflammatory and anti-cancer properties. They are abundant in fruits, vegetables, tea, coffee, and red wine and have been extensively studied for their role in preventing and treating cancer as well as a wide range of other diseases, including heart disease and neurodegenerative disorders. Polyphenols have been found to inhibit tumor growth, induce apoptosis in cancer cells, and inhibit tumor progression. The potential of combination therapies using the synergistic effects of terpenes, polyphenols, and flavonoids to regulate cancer signaling pathways is becoming increasingly important. Demonstration of the effects of natural products on cancer signaling pathways reveals opportunities for the development of innovative cancer treatment strategies. Polyphenols have attracted attention as potential complements to traditional cancer treatments such as chemotherapy and radiation therapy. Although they are not typically used as stand-alone cancer treatments yet, they may increase the effectiveness of conventional treatments. Polyphenols have been found to inhibit the growth of cancer cells, promote apoptosis and reduce inflammation. However, their effectiveness in cancer treatment is still an area of ongoing research, and more studies are needed to determine their specific roles and applications. In summary, polyphenols are natural compounds found in plants that have potential health benefits, including antioxidant and anti-inflammatory properties. It is safe to consume foods rich in polyphenols.

IS011

HISTAMINE INTOLERANCE

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Histamine, which comes from the Greek word histos (tissue), is synthesized from Histidine by decarboxylation. It is abundantly found in mast cells, basophils, eosinophils, histaminergic neurons and enterochromaffin cells of the stomach. It shows its effect throu- gh histamine receptors (H1, H2, H3, H4). Histamine degradation is provided by enzymes Diamine Oxida- se (DAO) attached to the plasma membrane and Histamine-N-Methyl Transferase (HNMT) located in the cytosol. DAO is secreted into the extracellular space upon stimulation and breaks down histamine in the extracellular space. The highest DAO activity is present in the small intestine, ascending colon, placenta and kidney. The main factor that reduces histamine absorption in the intestines is DAO activity. HNMT breaks down intracellular histamine. There are many reasons that cause an increase in histamine in the body: 1) Foods naturally rich in histamine 2) Foods that cause histamine release 3) Food dyes and food additives 4) Bacteria and yeast that synthesize histamine 5) Alcohol that reduces DAO activity 6) Drugs that reduce DAO activity 7) Drugs and chemicals that cause histamine release, 8) Drugs that reduce Vitamin B6 activity, 9) Allergic reactions, 10) Infection, shock, trauma etc. can be listed as the main causes. Histamine intolerance is diagnosed by measuring histamine amount and DAO enzyme activity. Histamine measurement can be made in whole blood and stool. DAO activity can be measured in stool and serum. In histamine intolerance, an increase in histamine levels and a decrease in DAO activity are expected. Serum DAO activity <3 U/mL likely indicates the presence

of histamine intolerance.

IS012

FOOD ALLERGY AND FOOD SENSITIVITY

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Allergy is an over reactive immune response to a substance or food. It may cause symptoms such as itching, rash, eye redness and swelling, runny nose, sneezing, swelling in the respiratory tract, shortness of breath, and anaphylaxis. There are two types of allergic reaction mechanisms. In type 1 hypersensitivity reaction, IgE receptor production increases after the first exposure to the allergen. Subsequent exposures trigger histamine discharge from basophils and mast cells and cause the symptoms within minutes, especially in allergic rhinitis and food allergies. Type 4 hypersensitivity reaction triggers T cell activation, leading to the release of proinflammatory cytokines and the symptoms might present within hours especially in allergic contact dermatitis. Cow's milk, tree nuts (walnuts, hazelnuts, almonds, cashews, pecans and pistachios), peanuts, eggs, wheat, soy, fish, shellfish and sesame are responsible for more than 90% of food allergies. The foods most commonly associated with anaphylaxis are tree nuts, peanuts, fish and shellfish. Cooked foods are generally less allergenic because the allergenic proteins become inactivated. Eosinophil count, total IgE, allergen-specific IgE and molecular allergy tests are performed in laboratories in the diagnosis of allergy. In some molecular allergy tests developed to detect hundreds of allergens at the same time, plant or insect-derived cross-reactive carbohydrate determinants (CCD) that cause false positive results are removed. Food sensitivity is a disorder caused by intestinal tissue damage that occurs as a result of IgG-mediated immune response to certain foods or food additives. It especially presents with GI symptoms such as indigestion, bloating, abdominal pain, constipation or diarrhea, nausea and vomiting. It may accompany some diseases such as restless legs syndrome, depression or hyperactivity, irritable bowel syndrome and leaky gut syndrome. For the diagnosis of food sensitivity, quantitative analysis of the specific IgG response to hundreds of standardized food antigens can be performed in laboratories.

IS013

BASIC PRINCIPLES IN NUTRITION AFTER BARIATRIC SURGERY

Umut Fırat Turan

In patients with obesity, the most effective method for achieving long-term sustainable weight loss is surgical treatment. Bariatric procedures involve reducing the stomach volume and/or creating a small gastric pouch. Due to the small stomach volume and postoperative edema, solid food intake is very difficult or impossible in the first days after surgery. To prevent or minimize regurgitation and vomiting, postoperative nutrition protocols typically recommend starting with liquids and gradually transitioning to solid food.

Oral intake for patients usually begins with water on the day following the surgery. The first 10-14 days are continued as a full liquid diet. During this stage, patients should consume at least 1500-1800 mL of liquid. Whey, whey isolate, or soy protein powder (containing a maximum of 25-30 g of protein per meal, mixed with lactose-free milk, soy milk, or almond milk) can be taken as a supplement for protein support. After this period, the diet should progress from a liquid diet to pureed foods rich in protein. Initial attempts should start with 1 tablespoon, and the amount should be gradually increased based on patient tolerance.

Nutrition should consist of 3-6 small meals per day, ensuring adequate hydration. At this stage, patients can add well-cooked vegetables and soft or pureed fruits to their diet alongside protein sources. Until the patient comfortably consumes 60 g/day of protein and 3-5 servings of fruits/vegetables per day, rice, bread, and pasta should be avoided. This stage begins with pureed foods and progresses to soft foods based on patient tolerance. Approximately 6-8 weeks after surgery, a healthy solid food diet is introduced. A balanced nutrition list is created for the patient, including sufficient protein, fruits, vegetables, and whole grains. Calorie needs are determined based on the patient's height, weight, and age. Throughout each stage of the diet, food choices and supplement preparations should provide all "essential" nutrients.

In conclusion, postoperative oral intake should be

gradually increased, taking into account patient tolerance. Adequate hydration and protein intake should be ensured at each stage of the diet. If there is a pre-existing deficiency in vitamins/minerals before surgery, supplementation is necessary, and postoperative monitoring should be conducted to prevent potential deficiencies.

IS014

WHAT DO WE KNOW ABOUT GUT MICROBIOTA, DIETARY PATTERNS AND CANCER?

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The understanding of the effects and relationships of bacteria on metabolism and human homeostasis has led to increased studies on microbiota in recent years. Microbiota is one of the factors affecting oncogenesis and is defined as a consortium of microorganisms consisting of bacteria, viruses, fungi, and protozoa living in various body sites including the oral, urogenital, and gastrointestinal tracts, and living in a eubiotic environment. Indigestible dietary components are biotransformed by the microbiota to produce critical nutrients and metabolites for the host. The type of diet has a profound impact on the spectrum of bacterial-derived metabolites, a phenomenon that can have important repercussions for homeostasis. It has been reported that microbiota-mediated production of short-chain fatty acids from indigestible carbohydrates supports increased muscle mass and decreased inflammation. Therefore, it is thought that indigestible carbohydrates may be beneficial in the treatment of cachexia. Although the gut microbiota does not directly induce tumor formation, it may interact with the immune system to indirectly promote cancer cell proliferation. A defective immune response increases the abundance of certain bacterial species and can trigger signaling pathways leading to the transcription of oncogenes.The gut microbiota can indirectly promote cancer by inducing inflammation or immunosuppression through cytokine production. Some types of cancer (gastric, colorectal, pancreatic, breast, and brain cancer) and the development of various malignant neoplasms have been associated with changes in the composition of the gut microbiota. The results of studies examining the role of the gut microbiota in cancer treatment have reported that the microbiota may also influence the pharmacokinetics, efficacy, and toxicity of various anticancer therapies. A healthy microbiota is indispensable for optimal therapeutic response, and dysbiotic microbiota may underlie the variable response to similar therapeutic strategies in different patients. Approximately forty chemotherapeutic drugs are metabolized by the gut microbiota. Diet shapes the abundance and species of gut microbiota. Therefore, it has been reported that microbiota dysbiosis can be prevented by changing dietary habits towards a Mediterranean diet. Focusing on diets rich in prebiotics may be a good choice to modulate the gut microbiome. It is clear that microbiota is a transformative and novel area of research, and it will certainly affect cancer prevention, diagnosis, treatment, and follow-up processes in the future.

IS015

MICROBIOTA METABOLITE; SHORT-CHAIN FATTY ACIDS

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Short-chain fatty acids are formed in the gut lumen as a result of the complex interaction between diet and gut microbiota. The discovery of receptors for short-chain fatty acids (SCFAs) in various cell and tissue types, where they seem to act as natural ligands, has sparked greater interest in SCFAs as signaling molecules between the gut microbiota and the host. Numerous studies support the notion that the production of short-chain fatty acids is an indicator of a healthy intestinal ecosystem. Taxa that produce short-chain fatty acids are generally commensal and beneficial bacteria. They have a direct positive effect on the intestinal barrier and immunity beyond the production of short-chain fatty acids. In addition, the mucus colon layer is another argument that is positively affected by short-chain fatty acids. It is widely acknowledged that the gut microbiota plays a crucial role in regulating the host's inflammatory and immune responses. In recent years, the interface between the host and microbiota has become increasingly important in understanding the development of

many chronic non-infectious conditions, such as cardiovascular disease, cancer, autoimmunity, and neurodegeneration. The complex and delicate interaction within the microbiota can also control the ratio and levels of Short-chain fatty acids in the intestinal lumen. Accordingly, prebiotics or probiotics can modulate the production of short-chain fatty acids by altering this balance. Small changes in diet factors, such as fiber content, can shape microbial communities, and dietary modifications can alter the composition of the gut microbiota in a short period of time. One of the main issues with a Western diet, which is typically high in fat and easily digestible sugars, is that nutrients are primarily absorbed in the duodenum, leaving minimal substrate for bacteria in the colon. As a result, dysbiosis occurs, which disrupts the composition of microbiota and increases susceptibility to inflammatory diseases, such as inflammatory bowel diseases or colon cancer. Although dietary studies vary in their findings, there is a general consensus that diets rich in fiber increase the production of short-chain fatty acids, specifically acetate and butyrate.