Obesity is an imbalance between energy intake or lipogenesis / lipolysis in a narrow sense. The World Health Organization (WHO) reports that obesity has doubled in the past 30 years and is the most important health problem of the 21st century. The budget allocated to obesity constitutes 1-3% of health expenditures worldwide. WHO categorizes obesity based on Body Mass Index (BMI). According to this; overweight (BMI = 25.0-29.9kg/m2) and obesity (BMI ≥ 30kg/m2). As of 2008, the prevalence of overweight in the world is 35% and the prevalence of obesity is around 11%. Obesity is an epidemic disease that increases the incidence of type 2 diabetes, cardiovascular disease, stroke and cancer. Type 2 Diabetes is parallel to obesity in both sex and all ethnic groups and is closely related to the grade and duration of obesity. Increased visceral, subcutaneous and liver adiposity associated with obesity cause insulin resistance. Insulin resistance locally indicates a decrease in the insulin metabolic response of the target cell and a decrease in the effect of endogenous or exogenous insulin in order to reduce the circulating blood glucose level. Insulin resistance and hyperinsulinemia are accepted as the key event that obesity increases the risk of type 2 diabetes, hypertension, dyslipidemia and cardiovascular events. In the evaluation of obesity and diabetes; anamnesis, physical examination and laboratory are important places. Laboratory tests can be grouped into routine tests, glucose-insulin homeostasis, fat tissue markers, inflammation markers, and omics-based markers: Routine tests: Fasting plasma glucose, postprandial blood glucose, OGTT, HbA1C, lipid profile, uric acid, BUN and creatinine, Liver Function Tests (ALT, AST, GGT, ALP), and microalbumin in urine. Glucose-insulin homeostasis tests: Insulin, insulin-like growth factor and C-peptide. Fat tissue markers: Adiponectin, omentin, adipin, lepin, resistin and fatty acid binding protein-4. Inflammatory markers: C-reactive protein, interleukin-6, tumor necrosis factor-α. Omics-based markers: Metabolites and microRNAs. The number of biomarkers that can be used in diagnosis and treatment of obesity and diabetes is increasing day by day, bringing innovations in risk prediction, screening, diagnosis and prognosis. However, biological variability and methodological variability are constraints on their use. When biological markers are used; reliability, validity, sensitivity, specificity and interpretation of data are important. Sample collection, storage and use should be standardized and their biological variability should be determined so that these markers can be appropriately verified and made available in the clinical setting. Nowadays, in the "personalized medicine" era, interest in New biomarkers specific to obesity and cardiometabolic diseases is increasing. Promising biomarkers are emerging, including adipokines, cytokines, metabolites and microRNAs.

D-20 CLINICAL OBSERVATION OF BIODIVELUTE IN METABOLIC SYNDROME MONITORING

Zeynep Cantürk
Kocaeli University Faculty of Medicine, Department of Endocrinology and Metabolism, Kocaeli

Metabolic syndrome; abdominal obesity, insulin resistance, dyslipidemia, hypertension, hypofibrinolysis, inflammation and endothelial dysfunction, resulting in Type 2 diabetes and coronary heart disease. In the development of the metabolic syndrome; high fat and carbohydrate diet, physical inactivity, aging, genetic factors and perinatal malnutrition. Studies have shown that diabetes and insulin resistance and cardiovascular diseases follow each other, suggesting that these diseases may originate from the same root, and this common cause may be inflammation and oxidative stress. Metabolic syndrome is thought to be the most important factor that triggers inflammation and oxidative stress on the basis of genetic and metabolic susceptibility of overnutrition and obesity. A number of adipocytokines are normally secreted from adipocytes. When adipose tissue reaches a certain threshold level as it is obesity, adipocytes cause dysregulation of adipokine release. Accordingly, leptin, leptin / adiponectin ratio (LAO), PAI-1, uric acid, IL-6, TNF-alpha, oxLDL are increased while adiponectin, ghrelin, IL10 and PON1 are decreasing. Some ratios, such as high molecular weight adiponectin / adiponectin and leptin/adiponectin ratios, are more important than their individual values. A biomarker is a measurable variable that can be used as an indicator of a biological condition. Biomarkers can be used in diagnosis and treatment if there are no clear clinical signs and anatomical abnormalities in many pathologic conditions or if they are not definite. Biomarkers can also identify individuals susceptible to disease in the community; they can also determine the level of this predisposition. It is suggested that certain cytokines, which may increase their levels in metabolic syndrome, may be used as biomarkers in diagnosis or treatment. These levels of cytokines correlate with both cardiovascular disease and metabolic syndrome components.

D-21 BIOMARKERS IN MOLECULAR NUTRITION: CLINICAL AND RESEARCH APPLICATIONS AND NEW TARGETS METABOLOMICS

Rüksan Çehreli
Dokuz Eylül University, Health Services Vocational School, Institute of Oncology, Department of Preventive Oncology, İzmir

The rapid developments in molecular nutrition science in recent years show the importance of investigating the relationship between diseases and nutritional status of people. For this reason, epidemiology, nutrigenetics, nutrigenomics and related issues between nutrition and diseases are being investigated. The data obtained indicate that biomarkers need to be evaluated in areas such as nutrigenomics and metabolomics. Nutrients may affect directly or indirectly the expression of the gene at cellular level. They act directly as ligands for transcription factor receptors. It is metabolized by metabolic pathways that cause changes in the concentrations of substrates and intermediate mediators in cell signaling and gene regulation. And also nutrients changes the signaling pathways and signaling. Active nutrition compounds in diet may change gene expressions related with the immune system. There is an engaging link between cell intrinsic and extrinsic metabolites and gene expression, with frequently observed experimental evidence of molecular mechanisms resulting in immune cells. The definition of “chrono-nutrition and chrono-immunology” enabled a new understanding about the effect of metabolism on immunity and the role of Warburg effect on immune cell functioning in recent years. The emerging field of metabolomics in human nutrition, as well as the development of valid FFQ and the continued expansion of food metabolome databases will permit the identification of specific dietary components in food, produce more valid biomarkers of exposure to certain foods and possibly advance nutritional science research which aims to evaluate...
diet and disease relationships. Biomarkers of dietary exposure should be valid, reproducible, able to detect changes in intake over time and be suitable for the general population. Yet many of the dietary biomarkers reviewed appeared inadequate at meeting all of the mentioned criteria. There are multiple factors that warrant investigation before many of these biomarkers can be more widely utilized in nutrition and health research. Genetics, age, type of specimen, time of year, and confounding dietary sources play a pivotal role in the feasibility and validity of dietary biomarkers. Future research should be directed at refining existing biomarkers by accounting for confounding factors, establishing new indicators of specific food intake and developing techniques that are cost-effective, noninvasive, rapid and accurate measures of nutritional status.

D-22 PITUITARY BIOMARKERS IN HEALTH AND IN PITUITARY DISEASES

Savim Gullu
Ankara University, Faculty of Medicine, Department of Endocrinology and Metabolic Disorders, Ankara

The pituitary gland produces and secretes hormones those play fundamental roles in regulating endocrine function. The pituitary gland has two lobes: an anterior and a posterior lobe. Adrenocorticotropic hormone (ACTH), growth hormone (GH), thyroid-stimulating hormone (TSH), luteinizing hormone (LH), follicular-stimulating hormone (FSH) and prolactin (PRL) are secreted from the anterior lobe. Posterior pituitary releases antidiuretic hormone (ADH)/vasopressin and oxytocin, which are synthesized by the neurosecretory cells in the hypothalamus and stored in the posterior pituitary. ACTH stimulates synthesis and secretion of glucocorticoids, mineralocorticoids and androgens from the adrenal cortex. The most important secretagogue of ACTH is corticotrophin releasing hormone (CRH). Physical, emotional and chemical stresses stimulate ACTH secretion. ACTH has a pulsatile secretion pattern along with the CRH. It has a diurnal rhythm. Hypersecretion of ACTH results in Cushing Disorder and secretion pattern along with the CRH. It has a diurnal rhythm. Hypersecretion of ACTH results in Cushing Disorder and

D-23 LABORATORY POINT OF VIEW IN PITUITARY / ADRENAL AND GONADAL DISEASES

Can Duman
İzmir Demokrasi University, Faculty of Medicine Department of Medical Biochemistry, İzmir

Hormones are organic compounds secreted into the bloodstream by specific glands, which modulate the functions of the tissues and specific organs that they reach via blood and act in very low quantities. It is derived from the Latin word 'hormaein', to stimulate, to act. These hormones are released into the bloodstream by the effect of control mechanisms moving from top to bottom. The top step of these control mechanisms is the hypothalamus located at the base of the brain. With different neural stimuli reaching the cholestatic region, this region leads to the release of very small amounts of specific hormones, which we call releasing-releasing (sometimes slowing-inhibiting) factors. These hormones reach the anterior lobe of the 'hypophysis', a small endocrine gland located in the bone space called Sella Turcica that placed in the middle region of the brain via nerve fibers. Each secretory factor secreted by the hypothalamus leads to the release of a specific hormone from the anterior pituitary gland. The hormones released from the pituitary gland reach to the target tissues and glands via bloodstream and perform their specific functions. These functions are often as to stimulate the target gland for the production and release of its own hormones. Some hormones are not subject to this hierarchical system or are very little dependent. There are different stimulating and inhibiting mechanisms that regulate the synthesis and release of these hormones such as insulin, epinephrine, and glucagon.

D-24 NOT A MYTH, BUT A DISEASE WE IGNORE; PORPHYRIAS

Ebru Sezer
Ege University Faculty of Medicine, Department of Medical Biochemistry, İzmir

Porphyrias are a group of rare metabolic disorders characterized by the lack of enzymes involved in the synthesis of 'haem' and the excessive accumulation of haem precursors before the defective step. Diagnosis is usually delayed or it is likely that porphyria is often not considered at all as a cause of the patient's symptoms and relevant patients may thus not be tested for these disorders. The presence of different clinical types, and the emergence and variation of symptoms relevant to many different medical specialties complicate the accurate diagnosis. The fact that the number of patients diagnosed with porphyria in our country is very low compared to Europe is probably due to the limited awareness of the physicians about the disorder and the lack of sufficient specialized laboratories to diagnose porphyria. Currently, prevention of acute attacks is possible with preventive measures and treatments if the patient is accurately diagnosed, but unfortunately patient’s quality of life is very low because of the lack of accurate diagnosis in most cases. It is of great importance that the patients are diagnosed so that the screening of relatives and genetic counseling can be carried out especially in consanguineous marriages. European Porphyria Initiative (EPI), founded in 2001 to improve the quality of diagnosis and treatment of porphyria patients in Europe, has been active as Europen Porphyria Network (EPNET) since 2007. The organization, which has succeeded in creating an effective network of specialized porphyria centers within the European Union, includes porphyria centers of 21 countries working to develop a current consensus-based approach for management for the disease, patients and their families. Many European countries with much smaller population than Turkey, have reported EPNET a much higher number of patients diagnosed with porphyrias than Turkey which points out how our health system