D-15 HYPERLIPIDEMIA
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Hyperlipidemia is a primary, major risk factor for ASCVD and may even be a prerequisite for ASCVD. Epidemiologic data also suggests that hypercholesterolemia and perhaps coronary atherosclerosis are risk factors for ischemic cerebrovascular accident (CVA), (TG) and low-density lipoprotein cholesterol (LDL-C) and a decreased concentration of high-density lipoprotein cholesterol (HDL-C), as an important risk factor for peripheral vascular disease, CVA, and ASCVD. A comprehensive strategy to control lipid levels and address associated metabolic abnormalities and modifiable risk factors is recommended primarily for lifestyle changes (Physical Activity, Medical Nutrition Therapy and Smoking Cessation) and patient education with pharmacotherapy as needed to achieve evidence-based targets. Statin therapy is recommended as the primary pharmacologic agent to achieve target LDL-C goals on the basis of morbidity and mortality outcome trials. In individuals within high-risk and very high-risk categories, further lowering of LDL-C beyond established targets with statistical results in additional ASCVD event reduction and may be considered. Combination therapy of lipid-lowering agents should be considered when the LDL-C / non-HDL-C level is markedly increased and monotherapy (usually with a statin) does not achieve the therapeutic goal. Ezetimibe and propionate convertase subtilisin/kevin type 9 (PCSK9) inhibitors (alirocumab, evolocumab) can be used in combination with statins to reduce LDL-C and ASCVD risk. In statin intolerant patients Ezetimibe or PCSK9 inhibitors can be used as monotherapy. Fibrates should be used to treat severe hypertriglyceridemia (TGs >100 mg/dL). Fibrates may improve ASCVD outcomes only in primary and secondary prevention when TG concentrations are >200 mg/dL and HDL-C concentrations <40 mg/dL. Micromosal Transfer Triglyceride Protein (MTP) inhibitor (lomitapide) and anti-sense Apolipoprotein B oligonucleotide ( mipomersen-subQ injection) are other treatment options for homozygous familial hypercholesterolemia.

D-16 LABORATORY APPROACH TO DYSLIPIDEMIA
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Standard lipid analysis includes measurement of fasting plasma or serum total cholesterol (TC), triglyceride (TG), low density lipoprotein cholesterol (LDL-C) and high density lipoprotein cholesterol (HDL-C). Non-HDL-C (TC-HDL-C) reflects the amount of total atherogenic particles in plasma. The 2017 Turkish Endocrinology and Metabolism Association guidelines for diagnosis and treatment of metabolic lipid disorders indicate that non−HDL-C is a better predictor than LDL-C when determining cardiovascular risk in high TG patients with Diabetes, Metabolic Syndrome and Chronic Kidney Disease. Measurement of total cholesterol and total triglycerides can be used to estimate HDL-C and non-HDL-C levels. When nonfasting total cholesterol and triglycerides are measured, non-HDL-C is calculated as follows:

- Non-HDL-C = total cholesterol - HDL-C - triglycerides / 5

This formula is used to estimate the non-HDL-C level when the HDL-C level is not available.

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Cerebrotendinous Xanthomatisos, respectively. Assessment of apolipoprotein (apo) A-I in HDL particles by gel electrophoresis is important to determine CVD risk. HDL is a major source of apo A-I and apo A-II. Measurement of apo B is valuable for the diagnosis of abetalipoproteinemia and hypobetalipoproteinemia. Lechitin cholesteryl acyltransferase (LCAT), hepatic lipase and cholesteryl ester transfer protein (CETP) deficiency can be verified by evaluating associated protein levels and activity. Definitive diagnosis of dyslipidemias caused by genetic disorders and causes of markedly elevated triglycerides (> 1,000 mg/dL) requires next generation DNA sequencing of the appropriate and relevant genes. This can provide a molecular diagnosis to formulate optimal therapy strategies.

D-17 EXERCISE AND BIOMARKERS IN DYSLIPIDEMIA
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Cardiovascular diseases are the leading cause of mortality continues to be all over the world. Dyslipidemia is found in some diseases such as Diabetes mellitus type 2, NASH, metabolic syndrome, obesity and atherothrombosis. Dyslipidemia is an important cardiovascular risk factor and modifiable with lifestyle management. Both primary prevention and secondary prevention with exercise training has been shown to decrease the development of cardiovascular events. The risk scoring of patients is one of the most important points in the treatment of dyslipidemia. Individuals must be separated according to risk scores for cardiovascular diseases and dyslipidemia approach should be planned accordingly this risk scoring. Many research demonstrated that aerobic exercise combined with weight loss significantly reduces blood cholesterol, low density lipoprotein cholesterol(LDL-C), very low density lipoprotein cholesterol (VLDL-C), and triglycerides(TG) while improving high density lipoprotein cholesterol(HDL-C). Aerobic and resistance exercise training shown to decrease in non HDL-C independent of changes in body weight. The benefit effects of single session of aerobic exercise are observed for postprandial lipemia. Acute and chronic exercise trainings have been pointed as important management to counteracts both dyslipidemia symptoms and systemic infalmmation. Physical activity has been recommended in the prevention and treatment of the chronic inflammatory diseases such as dyslipidemia. American Association of Clinical Endocrinologist recommended that exercise programs should include at least 30 minutes of moderates intensity physical activity 4to 6 times weekly, with an expenditure of at least 200kcal/day. Exercise training is cost effective tool and can cause fewer side effects than isolated medicine in dyslipidemia.

D-18 GENERATIONS ARE DIFFERENT, WHAT ABOUT MOTIVATION?
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Motivation is a phenomenon that can only be understood by interpreting the behavior of people and motivation factors can be common in generations. Groups that share birth date and important moments at critical developmental stages are called “generations”. Generations which categorised differently in the literature today mostly classified as Silent, Baby Boomer and Millennials including X and Y generations. The most important things that motivate loyal and consistent Silent generation who desire for stability and foreseeing. The motivating things for baby boomer workers, born into post-war social turmoil and problematic with authority are money, senior position and individual development. X Generation tries to achieve more business / private life balance in career management. In their motivations, training and conferences will help them build business relationships; group work rather than individual work, the opportunities offered in addition to salaries are influential. The Millennium Generations includes young people who are
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 = 25-29.9kg/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 hyperinsulinaemia 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, apelin, leptin, 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-19
LABORATORY VIEW OF OBESITY AND DIABETES
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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 = 25-29.9kg/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 hyperinsulinaemia 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, apelin, leptin, 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
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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
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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