POSTER PRESENTATION ABSTRACTS

PP-001
DETERMINATION OF IRISIN LEVELS IN SERUM AND PLASMA SAMPLES WITH AND WITHOUT APROTININ

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OBJECTIVES: Irisin is a myokine with 112 aminoacids and its level is regulated by PGC1-α. It is released into blood circulation from skeletal muscle tissue after a proteolytic cleavage of extracellular domain of FNDC5. Aprotinin is a polivalent serin protease inhibitor. It is added to the sample solutions such as serum, plasma or tissue extracts in order to inhibit the serine proteases found in the sample medium. So, degradation of the proteins to be measured can be prevented. These study has been made to get a preliminary information whether it is neccessary to add aprotinin in serum and plasma samples to prevent any irisin loss in samples which are needed to be kept at -80°C for a long time.
MATERIALS and METHODS: For this purpose, blood samples have been taken from 10 men and 10 women volunteers with ages between 25-40 and aprotinin has been added to the plasma and the serum samples and have been kept at -80°C for 3 months. At the end of 3 months, irisin levels of these samples with aprotinin and without aprotinin have been determined by ELISA.
RESULTS: Statistical analysis of the results has shown an insignificant differance between the plasma samples with or without aprotinin (p=0.525) and a significant decrease between the serum samples with and without aprotinin (p=0.009).
CONCLUSIONS: In conclusion, with the results of this study, no net decision could have been achieved to add aprotinin to the samples for irisin determination with ELISA in plasma and serum kept at -80°C for about 3 months.

PP-002
CALCULATION OF MEASUREMENT UNCERTAINTY OF PROCALCITONIN

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OBJECTIVES: Calculation of measurement uncertainty is especially important for tests in which clinical decision levels have been determined. In this study, it is aimed to calculate the measurement uncertainty of procalcitonin, which is a sepsis marker, and to compare it with the total allowable error % (TEa%).
MATERIALS and METHODS: Procalcitonin was analyzed with elecsys BRAHMS procalcitonin kit (Roche Diagnostics, Mannheim, Germany), which was manufactured to use immune analyzer Cobas e601 (Roche Diagnostics, Mannheim, Germany). The calculation model defined in the Nordtest guide was used to determine the measurement uncertainty. The component of the intermediate precision of the measurement uncertainty was calculated using the last three months of internal quality control data. The component of the u(bias) was obtained from the past 12 months of external quality control data. The expanded uncertainty was calculated according to the 95% confidence interval by combining all components.
RESULTS: Measurement uncertainty for procalcitonin was calculated as ± 10.24% at 95% confidence interval and it was not found to be higher than TEa% values (TEa%=20.3% for procalcitonin).
CONCLUSIONS: It is thought that giving the result and the measurement uncertainty of procalcitonin used as a risk biomarker in severe sepsis will contribute to the clinicians in clinical decision making.
Keywords: Measurement of Uncertainty, Analitical Performance, Procalcitonin

PP-003
EVALUATION OF PRE-ANALYTICAL AND POST-ANALYTICAL STAGES WITH SIX SIGMA PROCEDURE IN CLINICAL LABORATORY

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OBJECTIVES: We aimed to evaluate the effect of in-service training for phlebotomists on preanalytical and postanalytical processes by using the six sigma (sigmametric) protocol as a quality management tool in the laboratory.
MATERIALS and METHODS: The effect of the training given to phlebotomists of Istanbul Training and Research Hospital at the end of February was evaluated with the sigma protocol. For the pre-analytical process; Six sigma results were compared by calculating the error classification, parameter-based DPMO (defectspermillionopportunities) values for the reasons for rejection in the months before training (February) and after training (March2019). In the evaluation of the postanalytical process, the turn-around-time period was determined as 60 minutes for parameters of immediate clinical importance (Arterial Blood Gas, potassium, D-Dimer, INR (InternationalNormalizedRatio), high-sensitive troponin I).
RESULTS: According to the reasons and rates of rejection in February-March 2019, Sigma and DPMO values were determined as Biochemistry (4.24-4.29/3115-2653), HbA1c (4.6-4.9/1332-463), Hemogram (4,2-4.3/3555-3381), Hormone (4.6-4.8/1114-686), Urine Analysis (4.3-4.5/2616-1505), Blood-Gas (3.7- 3,5/17786-27507), Coagulation (4.11-4.17/4542-3807), respectively. In the postanalytical phase, according to the emergency TAT times, Sigma and DPMO values in February-March2019 were determined as Potassium (1.9-2/378832-341229), hsTnI (1.7-1.8/449278-394810), Blood-Gas (3.9 -4.1/10391-2706), D-dimer (1.9-1.9/346457-348348), INR (2.2-2.2/261514-252289),respectively.
CONCLUSIONS: It has been observed that the preanalytical errors in our laboratory are mostly insufficient sample, clotted sample, hemolyzed sample. Regarding rejection rates in sigma values before (February) and after (March) in-service training: Although there was a significant increase in sigma levels in HbA1c, hormone, urine tests, rejection rates were decreased in biochemistry and coagulation tests. For the tests, the error rate decreased in the D-dimer and INR tests.
Keywords: Sigmametric, Total Test Process, Analytical Performance

PP-004
COMPARISON OF HEMOGRAM PARAMETERS OF SYSMEX XN9000 AND MINDRAY BC-6800 PLUS

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OBJECTIVES: We aimed to compare some hemogram parameters with the Sysmex XN 9000 device that we routinely use to see the performance of the Mindray BC-6800 Plus device, which was newly installed in our laboratory.
MATERIALS and METHODS: 80 patient samples were studied simultaneously on Mindray BC-6800 Plus(Shenzhen Mindray Bio-Medical Electronics Co.,Ltd.) and Sysmex XN 9000(Sysmex Corp.) devices, including data below and above the lower and upper reference values. The Kolmogorov Smirnov test was used to evaluate whether the data were compatible with the normal distribution. Spearman correlation analysis and Passing-Bablok regression analysis, Bland-Altman analysis were performed with MedCalc program.
RESULTS: For erythrocyte; r = 0.995 (p <0.0001) in correlation analysis, y = 0.01346 + 0.9877x in Passing Bablok regression analysis (95% confidence intervals between slope 0.9759-1.0000, intercept -0.03000 – 0.06060 found.); For leukocyte; r = 0.997 (p <0.0001) in correlation analysis, y = -0.0331 + 1.016x in Passing Bablok regression analysis (95% confidence intervals between slope 1.0044-1.0275, intercept -0.1031 –0.0492 found.); For hemoglobin; r = 0.998 (p <0.0001) in correlation analysis, y = 0.0688525 + 1.0164x in Passing Bablok regression analysis (95% confidence intervals between slope 1.0000-1.0274, intercept -0.04589 – 0.3000 found.); For Platelet; r = 0.988 (p <0.0001) in correlation analysis, y = 4.2923 + 0.9692x in Passing-Bablok regression analysis (95% confidence intervals between slope 0.9462-0.9935, intercept -1.3366 – 9.8226 found.); For neutrophil; r = 0.995 (p <0.0001) in correlation analysis, y = 0.06362 + 1.0328x in Passing Bablok regression analysis (95% confidence intervals between slope 1.0221-1.0498, intercept -0.002711 – 0,1103 found.); For lymphocyte; r = 0.990 (p <0.0001) in correlation analysis, y = -0.0100 + 1.0000x in Passing-Bablok regression analysis (95% confidence intervals between slope 0.985-1.0152, intercept -0.03621 – -0.02688 found.); For immature granulocyte; r = 0.903 (p <0.0001) in correlation analysis, y = -0.007647 + 0.8824x in Passing Bablok regression analysis (95% confidence intervals between slope 0.7727-1.0000, intercept -0,01000 – -0,05455 found)
CONCLUSIONS: It has been shown that the intercept and slope values obtained as a result of the Passing Bablok regression analysis are within 95% confidence interval and 95% of the data in the Bland-Altman graph is within ± 1.96SD. It has been shown that the hemogram device newly installed in our laboratory is statistically compatible with the device we use routinely.
Keywords: Hemogram,Method Comparison,Regression Analysis

PP-005
CALCULATION OF MEASUREMENT UNCERTAINTY OF IMMUNOCHEMISTRY PARAMETERS

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OBJECTIVES: Aim in this study is to calculate measurement uncertainty (MU) of immunochemistry parameters, which are frequently analyzed in our hospital, according ISO / TS 20914; to compare obtained data with EFLM and Westgard's total allowable error (% TEa)values.
MATERIALS and METHODS: In our study,MU of TSH, fT3, fT4, Insulin,

hCG, Anti-TG, Anti-TPO, Ferritin, Parathormone, 25-OHvitamin D and VitB12 parameters analyzed on Cobas 6000 autoanalyzer was calculated. Calculations were made according to ISO/TS 20914 MU guide using formula U (y) = √ (Urw + Ucal) * Internal quality control data that were studied between 01.05.2020-30.10.2020 were used for Urw calculation. Ucal data are taken from Roche company. MU data we have calculated; It has been compared with % TEa values of EFLM and Westgard.
RESULTS: For T4, level 1 control uncertainty is 17.8% and level 2 control uncertainty is 43%. These values are outside % TEa rat for T4. Level 1 control uncertainty for 25-OH Vitamin D analyte was calculated to be 33.8%. This value is outof % TEa (20.5%) ratio for 25-OHVitamin D. Level 1 control uncertainty for VitB12 analyte was calculated to be 13.8%; this value is outside of %TEa (11.9%) ratio for Vit B12. Both levels of control uncertainty data for other parameters are below % TEa ratio.
CONCLUSIONS: All changes in laboratory can affect uncertainty. Therefore, uncertainty must be constantly monitored. In studies conducted in literature, comparison of uncertainty and% TEa values is mostly made. Although comparison of these two parameters gives us idea, it is debatable whether it is accurate.
Keywords: Measurement Uncertainty, Total Allowable Error

PP-006
EVALUATION OF MEASUREMENT UNCERTAINTY OF URINE PROTEIN TEST

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OBJECTIVES: Proteinuria is known as an important prognostic marker in renal and cardiovascular diseases. In nephrology practice, the amount of proteinuria is one of the parameters that are taken into consideration in the first place during the regulation of the treatment of patients. Measurement uncertainty is the quantitative expression of the quality of test results. The aim of our study was to calculate the measurement uncertainty of the urine protein test.
MATERIALS and METHODS: In the laboratory of our hospital, urine protein test was measured by using commercial kits from Beckman Coulter (USA) on an Olympus AU5800 (Hamburg, Germany) autoanalyzer with a turbidimetric method. Measurement uncertainty of urine protein test was calculated according to NordTest technical report 537. Standard uncertainty (ubias) was calculated. The expanded uncertainty value (U) was obtained by multiplying the calculated standard combined uncertainty (u) value by the k factor. The k value was accepted as approximately 2 (95% confidence interval). The total allowable error rate target was set as 10%.
RESULTS: Internal quality control% CV value was found as 3.1% and 2.1% for 1st level and 2nd level, respectively. Internal quality control uRW value was 1.8%, external quality control cost values were 3.39%, U value was 6.68% (95% confidence interval). The calculated uncertainty value was below the target% TEa value.
CONCLUSIONS: The measurement uncertainty of the urine protein test studied in our laboratory is appropriate according to the target value.
Keywords: Measurement Uncertainty, Nordtest Technical Report 537, Urine Protein

PP-007
COMPARISON OF COAGULATION TESTS ON COBAS T 511 AND STA COMPACT ANALYSERS

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OBJECTIVES: We compared Cobas t 511 coagulation analyser; before routine laboratory practice, with Stago Compact. We used activated partial thromboplastin time (aPTT) and prothrombin time (PT) tests for method comparison.
MATERIALS and METHODS: Method comparison was performed with 106 patient samples for PT and APTT assays on Cobas t 511(Roche Diagnostics) vs Stago Compact (Diagnostica Stago) analysers with the following reagents:(i)PT Rec vs STA Neoplastine R;(ii)aPTT vs STA Cephascreen 10 respectively. Sample tubes were 0.109Molar/3.2% Sodium Citrate Becton-Dickinson. The results were analyzed using the MedCalc statistical program.
RESULTS: Pearson's correlation coefficients were; i) aPTT vs STA Cephascreen(n:102), r=0.8325(0,761-0,883); ii) PT Rec vs Neoplastin R Based on INR results (n:106), r=0,9776 (0,9673-0,9848). Bias is shown in the Bland-Altman analyses for APTT sec mean % 6,3 (-11,3-23,8);for INR: mean in difference:-0,02 (-0,36-0,33). APTT Passing–Bablok regression analyses demonstrated y=-6,8001+1,1735 x where 95% CI i) intercept-12,525--1,9 as not including zero; ii) slope:1-1,375 including one. INR Passing–Bablok regression analyses demonstrated y=-0,1235+0,91 x where 95% CI i)intercept 0,03-0,18 as including zero ii) slope:0,8571-1 including one.
CONCLUSIONS: In compared samples;we observed that aPTTreagent results were 6.3% lower than Cephascreen 10 reagent results. Laboratories may not get the same APTT results as reagent contents differ in different analysers and are not standardised as INR results.
Keywords: APTT, Method Comparison, PT

PP-008
EVALUATION OF THE PERFORMANCE OF INDICES USED IN THE DISTINCTION OF IRON DEFICIENCY ANEMIA AND BETA THALASSEMIA TRAIT IN A UNIVERSITY HOSPITAL IN TURKEY

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OBJECTIVES: The aim of our study is to evaluate the performance of mathematical indexes that help distinguish between iron deficiency anemia and beta thalassemia trait, which are the most common anemias in our country.
MATERIALS and METHODS: Patients with ferritin<12ng/mL,HbA2<3%, MCV<80fl and/or MCH<27pg were selected for the diagnosis of Iron Deficiency Anemia (IDA). For the diagnosis of Beta Thalassemia Carrier(BTT), cases with HbA2> 3.5% and <10%, Ferritin and CRP within normal limits were obtained from the approved electronic records between 01.01.2020-18.11.2020 and included in the study. It was determined that there were 25 patients (20F,5M) who were fit with the diagnosis of IDA between the ages of 1 and 45 (median 28), and 48 patients (24F,24M) between the ages of 2 and 77 years (median 26) who were suitable for the diagnosis of BTT. Hemogram tests were performed on Sysmex XN1000 analyser, HbA2level, Ferritin and CRP tests were performed on TosohG8HPLC, Roche E801 and C701 devices, respectively. 10 different indexes (England-Fraser, RBC, Srivastata, Shina-Lal, Bessman, Ricerca, Green-King, Jayabose, Sirdah, Ehsani) were evaluated together with the commonly used mentzer index. Sensitivity (Sens), Specificity(Spsf), PPV, NPV, Positive and Negative Probability Ratio (PLR) and (NLR) were evaluated as performance criteria.The IDA group was accepted as the negative-patient-group, and the BTT group as the positive-patient-group. Microsoft-Excel-2016 was used for statistical data.
RESULTS: The strongest performance was found in the Sirdah index (Sens:0.92,Spsf:0.96,PLR:22.9,NLR:0.09). The weakest performance was found in the Bessman index (Sens:0.02,Spsf:0.68) and the Ricerca index(Sens:1, Spsf:0). Specificity was calculated as>0.9 in only 2 of the methods ((England-Fraser(1), Sirdah(0.96)). The Mentzer index method was calculated as (Sens:1,Spsf:0.84,PLR:6.25,NLR:0) and found to be weaker than new methods.
CONCLUSIONS: Simple mathematical indexes were found to be helpful in differential diagnosis.It is seen that no index alone is sufficient for definitive diagnosis.We think that it will be useful to add the appropriate indexes to the hemogram results in the preliminary evaluation before further examinations. The different results obtained in the studies suggest that each location should determine its own index.
Keywords: Discrimination Indices, Mentzer, Sirdah, England-Fraser

PP-009
MEDICAL BIOCHEMISTRY LABORATORY SUMMER PRACTICE LEARNING LEVEL ASSESSMENT: AN AFFILIATED HOSPITAL EXAMPLE

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OBJECTIVES: This study was planned to determine the Medical Biochemistry Laboratory Summer Internship is perceived by the students of the medical faculty and its contribution to the level of practical and theoretical knowledge of the clinical biochemistry laboratory.
MATERIALS and METHODS: Participating of the Medical Biochemistry Laboratory Summer Internship, Sakarya University Faculty of Medicine term 1 (D-I) and term 2 (D-II) students were pre-tested at the beginning of the internship and post-test at the end of the internship.A questionnaire form consisting of 26 questions was used in the study. By creating individual code for the students, changes in general and personal knowledge levels were determined in pretest and posttest.
RESULTS: The pre-test mean scores of D-I and D-II students were 60±24.1 and 70.3±24.6, respectively; the mean scores of posttest points was 68±23.6 and 78.8±25.2.When pretest and posttest scores were compared, it was found that posttest scores were significantly higher than the pretest scores(p=0,009). When students were separated by terms,both the pre-test and post-test scores of D-II students were significantly higher than the D-I students.
CONCLUSIONS: The fact that the students post-test scores are higher than the pre-test scores show that internship education increases the knowledge of students. Therefore, in addition to their theoretical education, making arrangements such as summer internship or elective internship to medical school students, that they can learn/understand the function of the clinical routine laboratory. In addition to contributing to students feeling more proficient in the profession of medicine, we think that it would be a guide in their choice of specialty in medicine
Keywords: Medical Biochemistry Education, Summer Internship, Education Level Assessment

PP-010
TURKISH BIOCHEMICAL SOCIETY BODY FLUID ANALYSES WORKING GROUP

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OBJECTIVES: The aim of this working group is to prepare an educational material for people who want to learn the information about biomarkers before their clinical or experimental studies. In addition, to produce chapters that are related to body fluids such as Cerebrospinal fluid(CSF), pleural and peritoneal fluid, cyst, intra articular fluid etc. in guidelines.
MATERIALS and METHODS: Firstly, relevant working groups of organizations such as IFCC and EFLM, if any, will be examined. Also, the relevant guidelines of the CLSI will be reviewed and inferences will be done. Finally, the updated literature will be searched for the consensus articles of the relevant body fluids if any. The guideline would be prepared by taking into consideration the status of laboratories in Turkey.
RESULTS: In 1998, The National Institutes of Health Biomarkers Definitions Working Group defined a biomarker as “a characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes, or pharmacologic responses to a therapeutic intervention”. WHO has added and defined a biomarker as “any substance, structure, or process that can be measured in the body or its products and influence or predict the incidence of outcome or disease”. Moreover, Teunissen et al. prepared a protocol on CSF collection and storage for the first time.
CONCLUSIONS: We will evaluate the body fluids that have not been examined properly before in this guidelines. Additionally, we would be able to eliminate some uncertainties that were experienced before by this guideline. Neurobiomarkers have been the priority of this working group.
Keywords: Guidelines, Body Fluids

PP-011
INVESTIGATION OF THE RELATIONSHIP BETWEEN BRAIN DERIVED NEUROTROPHIC FACTOR AND ACETYL COA CARBOXYLASE IN DE NOVO LIPOGENESIS

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OBJECTIVES: De novo lipogenesis is a complex metabolic pathway associated with many metabolic disorders such as metabolic syndrome, diabetes, especially obesity. Brain-derived neurotrophic factor (BDNF) is a neurotrophin which important for energy homeostasis as well as neuronal functions. In the studies with BDNF heterozygous knockout (+/-)mice, these mice showed weight gain, diabetes, and sometimes disorders in eating behavior. Based on all these data, it was aimed to investigate the relationship between Acetyl CoA carboxylase (ACC), which is the control enzyme of de novo lipid synthesis and BDNF.
MATERIALS and METHODS: In our study, two groups of C57BL / 6J wild type (n = 8) and BDNF (+/-) (n = 8) male mice were formed. Genotyping was done. The presence of the transgene in each animal was confirmed by polymerase chain reaction (PCR) analysis in tail tissue. Mice were fed ad libitum with normal food for four months. Acetyl CoA carboxylase expressions in adipose tissues were measured by RT-PCR. Mann-Whitney U test was used to compare the groups.
RESULTS: When the weights were examined at the end of the experiment, it was seen that the weight of BDNF (+/-) mice (23.4 ± 1.39) increased significantly compared to the weight of wild type mice (21.63 ± 0.64) (p = 0.011). It was observed that the expression of acetyl CoA carboxylase enzymes (1.39 ± 0.10 Fold / GAPDH) was higher in adipose tissue of BDNF (+/-) mice compared to wild type mice (1.00 ± 0.00 Fold / GAPDH) (p = 0.000).
CONCLUSIONS: It was concluded that ACC, which is an important enzyme in de novo lipid synthesis, may have an effect on the increase in body weight observed in BDNF deficiency.
Keywords: ACC, BDNF, De Novo Lipid Synthesis

PP-012
ASSOCIATION BETWEEN THYROID HORMONE LEVELS AND LIVER FUNCTION TESTS IN LIBYAN POPULATION

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OBJECTIVES: Thyroid hormones are potent modulators of varying physiological functions and an imbalance in the function of thyroid hormones to maintain cellular homeostasis lead to different metabolic disorders that include cardiovascular diseases, chronic liver diseases and diabetes. This study was planned to understand the link between thyroid hormone levels and liver function enzymes in Libyan population.
MATERIALS and METHODS: Serum samples were collected from patients who applied to the National Centre for Diabetes and Endocrinology, Tripoli, Libya. COBAS INTEGRA 400 plus analyzer was used for biochemical analysis while Elecsys COBAS E411 was used for assessing the level of thyroid hormones. Thyroid hormone levels (TSH, T4, T3, FT3, and FT4) were used to divide patients into two groups (hyperthyroidism or hypothyroidism). Individuals with normal thyroid hormone levels were considered as the control group. For each group liver function tests and thyroid hormone levels were statistically evaluated.
RESULTS: As compared to control group, significant increase was observed in liver function enzymes (GGT, ALP, ALT and AST) both in hypothyroidsm and hyperthyroidism ($p<0.05$). In hypothyroidism TSH level was positively correlated with GGT, ALP and AST levels ($p<0.05$). In hyperthyroidism TSH level is only negatively correlated with ALP levels ($p<0.05$).
CONCLUSIONS: Libya is one of the countries where endocrine dysfunctions are very common. Regular monitoring of patients with thyroid dysfunction for liver function tests will be useful in the management of the thyroid disorders by preventing complications.
Keywords: Hyperthyroidism, Hypothyroidism, Liver Function Tests

PP-013
THE EFFECT OF THYROID FUNCTION TEST RESULTS ON LIVER FUNCTION TESTS IN HYPOTHYROID PATIENTS RECEVING LEVOTYROXIN TREATMENT

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OBJECTIVES: We aimed to evaluate the relationship between thyroid function tests (TFT) and liver function tests (LFTs) in hypothyroid patients receiving levothyroxine treatment.
MATERIALS and METHODS: 2308 individuals who were followed up with a diagnosis of hypothyroidism and using LT4 were included in the study. Patients were divided into 8 groups according to the drug doses (25, 50, 75, 100, 125, 150, 175, 200 mcg). Patients were divided into five groups according to TSH values [<0.1 mIU/L (group1), 0.1-0.35 mIU/L (group2), 0.36-4.5 mIU/L (group3), 4.6-10 mIU/L (group4) and> 10 mIU/L (group5)]. The variation of LFTs and FT3/FT4 ratio in TSH groups was examined by Kruskal Wallis and Mann Whitney U tests.
RESULTS: There was a significant difference between TSH groups for AST, DBIL, T3/T4 ratio (p values:0.001; 0.002; 0.000). When we compare the groups in pairs, it was observed that there was a significant difference for AST between 3th-4th; for DBIL between 1st-4th and 2nd-4th; for the T3/T4ratio between all groups except 1st-2nd and 4th-5th. In patients with TSH <0.1 mIU/L, a significant difference was found between the groups formed according to drug level in terms of AST, ALT, GGT parameters (p values 0.032; 0.029; 0.041, respectively). In patients with TSH> 10 mIU/L,a significant difference was found between ALT, GGT parameters (p values 0.001;0.030, respectively).
CONCLUSIONS: It was observed there was no significant difference in LFTs between TSH groups. This may be due to levothyroxine healing impaired LFTs in hypothyroid patients generally within a few weeks.The results obtained from drug dose groups can be explained by the fact that both hypothyroidism and hyperthyroidism cause liver damage. Especially in patients with TSH <0.1mIU/L, the significant difference in LFTs can be explained by the toxic effect of additive substances in LT4 on the liver.
Keywords: Hypothyroidism, Levothyroxine, Liver Function Tests

PP-014
SERUM LIPASE/ AMYLASE ACTIVITY RATIO FOR SCREENING INSULIN RESISTANCE

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OBJECTIVES: Early diagnosis of insulin resistance (IR) is important to prevent the development of type 2 diabetes mellitus (DM). Type 2 DM is an endocrine disorder however some recent studies show that exocrine functions of the pancreas are insufficient also. Our aim in this study to evaluate the relation of IR with pancreatic exocrine functions.
MATERIALS and METHODS: Datas were taken from the laboratory information system in this retrospective study. Included subjects were separated to three groups according to the insulin sensitivity status determined by homeostatic model assessment. 335 subjects in insulin sensitive (IS), 275 in moderate IR, 164 in severe IR group. The median of the age is 45 (34-54). Serum lipase and amylase levels were used and compared between groups as an indicator of pancreatic exocrine functions.
RESULTS: Serum amylase levels were 67.8, 63 and 65.3 U/L; serum lipase levels were 31, 31 and 25.5 U/L and serum lipase/amylase ratios were 47%, 50% and 38% in IS, moderate and severe IR respectively. There were significant differences in serum amylase between IS and moderate IR ($p=0.02$); in serum lipase between IS and severe IR, and also between moderate and severe IR ($p<0.001$); in serum lipase/amylase activity ratio between IS and moderate IR, IS and severe IR, and also moderate and severe IR ($p= 0.015$, $p<0.001$, $p<0.001$ respectively).
CONCLUSIONS: Our results show that the exocrine functions of the pancreas are affected in insulin resistance and serum lipase/amylase activity ratio can be used as a new parameter to define and screen insulin sensitivity status of the body.
Keywords: Exocrine Pancreatic Function, Insulin Resistance, Amylase, Lipase, Serum Lipase/ Amylase Activity Ratio

PP-015
COVID-19 AND LABORATORY: CENTRAL LABORATORY OF TERTIARY UNIVERSITY HOSPITAL EXPERIENCE

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OBJECTIVES: A clear question which is now engaging the minds of many scientists and healthcare professionals is whether and finally how laboratory medicine could adequately contribute to counteract this Coronavirus disease 2019(COVID-19) and other viral outbreaks.This study aims to evaluate our central laboratory experience at the beginning of the outbreak.
MATERIALS and METHODS: Data of this study have been obtained retrospectively from Central Laboratories of Gazi University.The time interval that we have scanned is determined as March 11,2020 and May 1,2020.The laboratory test results that was requested at the first admission of patients to hospital whom diagnosis was confirmed as COVID-19 by polymerase chain reaction test have used in our study.
RESULTS: Our data set consists of 83 people (Men=37, Women=46) and their laboratory results.We have found that,the most common laboratory abnormalities in patients are high CRP (median=5,24 IQR (2,37±14,85 mg/L) (50%) ,high fibrinogen (mean=366,58±147,23 mg/dL) (31.5%), lymphopenia (mean=1,93±0,89x10.e3/uL) (24%), respectively. Moreover, 19.76% of the patients have eosinopenia. Interestingly,17.72% of patients have high Cystatin C levels. However,only 4.87% of patients have high creatinine levels. In addition, correlation analysis were made between all tests.
CONCLUSIONS: Our preliminary study has shown findings such as high CRP, fibrinogen levels and lymphopenia which are compatible with the literature. Also we have very interesting findings as high Cystatin C levels and Eosinopenia in patients who have been diagnosed with COVID-19.It is now actually indisputable that laboratory medicine will progressively maintain an substantial contribution to the diagnostic reasoning, managed care and therapeutic monitoring of the vast majority of human diseases including COVID-19.We will expand our data pool by using the clinical characteristics of the patients in the near future.
Keywords: COVID-19, Laboratory

PP-016
EVALUATION OF FEATURED BIOCHEMICAL PARAMETERS AND VITAMIN D LEVELS IN COVID-19 DISEASE

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OBJECTIVES: Covid-19 now became pandemic in a short length of a lifetime and seriously threatens human health. Patients who will be hospitalized and taken to the intensive care unit must be carefully selected and laboratory parameters may be crucial for predicting the course of the disease and determining the patients to be admitted to the intensive care unit in advance. Ferritin, D-dimer, fibrinogen and recently 25-OH vitamin D have come to the fore in this field.
MATERIALS and METHODS: This study include 121 patients, with COVID-19. Standard distribution variables calculated using the Mann-Whitney U test. Multivariate analysis was managed via an unconditional logistic regression model. We compared our data between sets of two groups as PCR positivity (PCR+), CT positivity (CT+), or both (PCR+ and CT+) among COVID-19 cases.
RESULTS: Ferritin, and Fibrinogen levels were considerably higher in CT+ patients among all subjects, $p =0.001$, $p =0.001$, and $p<0.001$. There were no apparent differences in vitamin D levels between PCR+ and CT+, CT+, PCR+ and others, $p=0.277$, $p=0.350$, $p=0.397$. However, we found that vitamin D levels of all patients were deficient (<20ng/mL).
CONCLUSIONS: Ferritin, D-dimer and fibrinogen levels may be useful in predicting the severity of the disease and early treatment. Scientists commonly accept that vitamin D levels are low in the Turkish people, making comparison difficult. It is inadequate to distinguish whether low vitamin D levels cause COVID-19 or deficiency occurs randomly because of reflecting the general population. Besides, vitamin D deficiency is widespread worldwide, it is difficult to associate COVID-19 with deficiency.
Keywords: COVID-19, Vitamin D, Deficiency, D-Dimer, Ferritin

PP-017
INVESTIGATION OF LYMPHOCYTE RELATED RATIOS IN GENERALIZED ANXIETY DISORDER

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OBJECTIVES: Studies investigating complete blood count (CBC) parameters in psychiatric disorders are increasing gradually. Although there are studies related to CBC in generalized anxiety disorder (GAD), lymphocyte-related ratios have not been investigated sufficiently. In this study, we aimed to examine the values of neutrophil to lymphocyte ratio (NLR) and monocyte to lymphocyte ratio (MLR) in GAD.
MATERIALS and METHODS: In this retrospective study, NLR and MLR of patients diagnosed with GAD (n=32) were compared with the data of healthy subjects (n=35). Measurements were performed with "CELL-DYN 3700 SL Analyzer".
RESULTS: The patient and healthy control groups consisted of females and their mean ages were similar ($p=0.298$). Neutrophil count ($p<0.001$), percentage of neutrophil ($p=0.008$), and NLR ($p=0.011$) were significantly higher in the patient group. The percentage of lymphocyte was significantly higher in the control group ($p=0.018$). Monocyte count, lymphocyte count, percentage of monocyte, and MLR were similar between the groups ($p>0.05$). According to the correlation analysis, there was no relationship between age and CBC parameters in the patient and control groups.
CONCLUSIONS: It is known that psychiatric disorders are associated with inflammatory processes. CBC is an easily accessible and quickly applicable test that shows inflammation. This study is important in terms of showing the increase in neutrophil-related parameters in GAD. Further studies examining the relationship between GAD and inflammatory processes are needed.
Keywords: Generalized Anxiety Disorder, Neutrophil to Lymphocyte Ratio, Monocyte to Lymphocyte Ratio, Hemogram, Complete Blood Count

PP-018
COULD IL-6 PREDICT THE CLINICAL SEVERITY OF COVID-19?

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OBJECTIVES: The inflammatory response plays a key role in COVID-19 and an excessive inflammatory response to SARS- CoV-2 is thought to be a major cause of disease severity and death in patients with COVID-19. The aim of this study is to investigate the role of IL-6 levels in diagnosis and treatment of the COVID-19.
MATERIALS and METHODS: In this retrospective, single-centre study, all data were collected from a total of 115 (mild n=24, moderate n=52, and severe n=39) patients enrolled from March 11th 2020 to April 4th 2020 in Antalya Education and Research Hospital.
RESULTS: The median age for mild group was 46,04 years, while 56,42 years for moderate group, as well as 62,92 years for severe patients (p = 0,001). There was significant difference inpatients who hospitalised clinic to intensive care unit ratio among mild, moderate or severe group.(p<0,001).
The values of IL-6 were significantly higher in severe patients than in mild (p = 0.04) and moderate patients (p=0,043). The baseline IL-6 levels in all COVID-19 cases was positively correlated with the baseline CRP, D-dimer, erythrocyte sedimentation rate, neutrophil count, neutrophil to lymphocyte ratio and ferritin levels. The area under the ROC curve for IL-6 as predictor of the severe clinical condition was 0,864 (95% CI 0,765–0,963 p= 0,000). Our longitudinal analyses showed that severe group presented significant increase in serum concentrations of IL-6 during hospitalization.
CONCLUSIONS: In conclusion, IL-6 is an key marker of inflammation and may be a guide in the early diagnosis of patients with severe COVID-19 clinic.
Keywords: Interleukin-6, COVID-19, Cytokine Storm, Inflamatory Parameters

PP-019
ANTI-INFLAMMATORY EFFECTS OF A NEW SERIES OF 6-ARYLIDENE-6,7-DIHYDRO-5H-INDENO[5,6-D][1,3]DIOXOL-5-ONES

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OBJECTIVES: Chalcones are important intermediates in the flavonoid synthesis pathway. Chalcones are natural compounds that have anti-inflammatory, antiproliferative, antifungal, and antibacterial effects. Recent studies on inflammation have shown that the modulating activities of chalcones are related to inflammatory pathways such as AP-1 and NF-κB transcriptional factors. Apart from this, it has been shown that the suppression of pro-inflammatory mediators such as cyclooxygenase-2 (COX-2), TNF-α and nitric oxide (NO) plays a pivotal role in anti-inflammatory effects of chalcones. Therefore, herein, it was aimed to investigate the anti-inflammatory effects of new chalcone derivatives
MATERIALS and METHODS: 6-Arylidene-6,7-dihydro-5H-indeno[5,6-d][1,3] dioxol-5-ones (1-10) were synthesized via the Claisen-Schmidt condensation of 5,6-methylenedioxy-1-indanone with aromatic aldehydes. The anti-inflammatory effects of the synthesized compounds were determined by measuring prostaglandin E2 (PGE2), TNF-α, IL-6 levels and COX-2 activity in LPS-treated Raw 264.7 cells.
RESULTS: All compounds were found to reduce PGE2, TNF-α, IL-6 levels and COX-2 activity. In particular, 6-(4-(4H-1,2,4-triazol-4-yl) benzylidene)-6,7-dihydro-5H-indeno[5,6-d][1,3]dioxol-5-one (9) stands out as the most effective anti-inflammatory agent on RAW 264.7 macrophages.
CONCLUSIONS: Our data indicated that 1,2,4-triazole scaffold at the 4th position of the benzylidene moiety enhanced anti-inflammatory activity.
Acknowledgements: This work was supported by Anadolu University Scientific Research Projects Commission (Project No. 1610S657).
Keywords: Anti-inflammatory, Chalcone

PP-020
THERAPEUTIC EFFECT OF CAPSAICIN ON 2,3,7,8-TETRACHLORODIBENZO- P-DIOXIN-INDUCED TESTICULAR TISSUE IN RATS

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OBJECTIVES: Capsaicin (CAP) has been found to have significant health benefits as analgesics, anti-cancer agents and anti-inflammatory agents. The mechanisms underlying these health effects have been attributed to their anti-inflammatory effects, including modification of macrophage function, in particular by reducing the production of pro-inflammatory mediators, reactive oxygen species, arachidonic acid metabolites, proteases, and lysosomal enzymes. The substance 2,3,7,8-Tetrachlorodibenzo-p-dioxin is extremely toxic to mammals with a wide variation of susceptibility between species. In this study, it was aimed to investigate the protective effects of capsaicin (CAP), 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) against oxidative stress in rat testis tissue.
MATERIALS and METHODS: Twenty-eight rats were equally divided into four groups; The first group was kept as a control. In the second group, TCDD was diluted in corn oil and administered orally at a dose of 2 µg / kg / week. The third group was treated with capsaicin (CAP group) suspended in corn oil at 25 mg / kg / every other weak gavage route. Rats in the fourth group were treated simultaneously with TCDD and CAP (TCDD +CAP group). Superoxide dismutase (SOD), catalase (CAT)acitviti and glutathione (GSH),thiobarbituric acid reactive substances (TBARS) levels were studied in testicular tissue
RESULTS: Our results showed that levels of TBARS were significantly ($p \leq 0.01$) decrease and the activities of SOD, CAT and level GSH were significantly ($p \leq 0.01$) increased in TCDD+ CAP group compared with TCDD group.
CONCLUSIONS: it was observed that there was a significant increase in SOD and Catalase activities and GSH levels, and a significant decrease in TBARS levels.
Keywords: TCDD, CAP, Oxidative Stress, Testicular Tissue, Rat

PP-021
A NEW SERIES OF CHALCONES AS POTENT CATHEPSIN D AND L INHIBITORS

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OBJECTIVES: Cathepsins are a class of lysosomal proteases that take part in proteolysis during physiological processes. Cathepsins B, D and L, which are able to cleave proteins in the extracellular matrix (ECM), including collagen, fibronectin, proteoglycans and laminin, are considered to represent causal factors in tumor invasion and metastasis. For this reason, cathepsins have emerged as potential therapeutic targets for cancer treatment. Inhibition of activity of cathepsins may slow down cancer progression. Chalcones display various pharmacological effects, including anticancer, antioxidant, anti-inflammatory, and anti-infective activities. Chalcone derivatives have shown potential as lead compounds for new drug discovery due to their biological activity and safety profiles. Therefore, in our study, it is aimed to evaluate the inhibitory effects of new chalcone derivatives on cathepsins.
MATERIALS and METHODS: To identify potent cathepsin inhibitors, new chalcones (1-10) were synthesized via the base-catalyzed Claisen-Schmidt condensation of 5,6-methylenedioxy-1-indanone with p-substituted benzaldehydes. The inhibitory effects of synthesized compounds on cathepsin D and L were invastigated using colorimetric inhibitor screening assay kit.
RESULTS: Among these compounds, 6-(4-(pyrrolidin-1-yl)benzylidene)-6,7-dihydro-5H-indeno[5,6-d][1,3]dioxol-5-one (4) was identified as the most effective inhibitor of cathepsin D and L with a 52.7±0.30% and 70.41±0.73% inhibition activity percentage, respectively.
CONCLUSIONS: Our results pointed out the importance of the pyrrolidine ring at the 4th position of the benzylidene moiety for cathepsin inhibitory activity.
Keywords: Cathepsin D, Cathepsin L, Chalcones

PP-022
SPECTROPHOTOMETRIC DETERMINATION OF MITOCHONDRIAL COMPLEX ACTIVITIES IN PATIENTS WITH INTENSIVE CARE UNIT ACQUIRED WEAKNESS

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OBJECTIVES: Intensive care unit–acquired weakness (ICU-AW) is the most common neuromuscular impairment in critically ill patients that increase mortality. Critical illness polyneuropathy, myopathy, and neuromyopathy contribute in ICU-AW, unfortunately critical aspects of ICU-AW that have not been completely defined and still under discussion. In this study, we aimed to evaluate mitochondrial respiratory complex activities of critically ill patients with intensive care unit–acquired weakness.
MATERIALS and METHODS: To determine mitochondrial respiratory chain complex activities, muscle biopsy samples were collected from critically ill patients in intensive care unit (n=7) and controls (n=5). Patients undergoing upper extremity or shoulder surgery due to non-malignant causes were involved in the control group. Frozen muscle biopsy samples were used for spectrophotometric analysis of Complex I, II-III, IV and citrate synthase (CS) activities. Tissues were homogenized with SETH buffer, centrifuged at 2000rpm for 15 minutes and the supernatant was used for enzyme activity measurements. Total protein measured by Lowry's method and complex activities reported as unit (U) per gram (g) protein. The data was evaluated with the Mann-Whitney U test.
RESULTS: Complex I activity was significantly low in patients (8.81 U/g) compared to controls (17.56 U/g) ($p<0.005$). Complex II-III activities were 7.03 U/g in patients and 10.49 U/g in control group ($p>0.05$). Complex IV activity was significantly low in patients (59.2 U/g) than controls (120.15 U/g) ($p<0,05$). Significant difference in Complex I/CS ratio was observed between patients and controls (0.12 and 0.30 U/g, respectively)($p<0.05$).
CONCLUSIONS: During critical illness, functional and structural changes in mitochondria play an essential role in the development of ICU-AW. Studying these parameters in larger cohorts is essential to understand ICUAW pathogenesis better.
The study protocol was approved by Hacettepe University ethics committee (2018/04-56(KA-180022). Written informed consent was obtained from participants or guardians of participants. The study was funded by Hacettepe University Scientific Research Projects Coordination Unit (Project ID: THD-2018-17114).
Keywords: Stroke, Neurological Damage, Mitochondrial Complex Activity

PP-023
CALCULATING THE RISK OF NEURAL TUBE DEFECTS - CASE

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OBJECTIVES: Increased AFP concentration increases the risk of neural tube defect (NTD). In the study where we calculated the measurement uncertainty of the AFP analyte and analyzed the risk again considering the worst probability, we observed that the risk was further reduced in some patients (although the AFP concentration was higher).The aim of this study is to investigate the reason for this risk reduction.
MATERIALS and METHODS: Analytes were studied on Beckman-Coulter Access2 analyzer and risk analysis was performed in Benetech PRA software. The risk of NTD was calculated again by changing only the AFP concentration without changing the clinical information of the patients (age, weight, race, pregnancy status, presence of diabetes, BPD value).
RESULTS: NTD risk was found to be low in 6 of 200 patients for whom we measured uncertainty. We would like to present one of these patients. The patient's AFP concentration was 13.9 ng / mL (MoM = O.42), while the NTD risk was 1/19900. When the measurement uncertainty was calculated for the AFP analyte, the AFP value was 16.9 ng / mL (MoM = O.51). Although the AFP concentration increased, the risk of NTD decreased from 1/19900 to 1/32600.
CONCLUSIONS: Screening protocols calculate the patient's probability of being affected. This probability is called the Likelihood Ratio (LR). Although AFP concentration increased, LR was found to be low in patients with low risk.
Keywords: AFP, Prenatal Screening Test, Risk Estimation

PP-024
THE SERUM GHRELIN, OBESTATIN AND COPEPTIN LEVELS DURING ORAL GLUCOSE TOLERANCE TEST

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OBJECTIVES: In this study, it was aimed to (1) compare the serum insulin, ghrelin, obestatin and copeptin levels in pregnant and non-pregnant women and (2) compare these parameters measured before and at the second hour of the 75-gram (g) oral glucose tolerance test (OGTT) in pregnant women.
MATERIALS and METHODS: Thirty pregnant and 27 healthy non-pregnant women included in the study and 75 g- OGTT was also performed to pregnant women between 24 and 28 weeks of gestation. The venous blood samples of pregnant women at fasting and 2 h after a 75 g glucose loading and also fasting venous blood samples of non-pregnant women were obtained. The measurements of ghrelin, obestatin, copeptin and insulin were performed by ELISA method.
RESULTS: The serum ghrelin, obestatin and copeptin levels were similar between the pregnant and non-pregnant groups ($p>0.05$). In pregnant women, glucose and insulin levels measured in the second hour after glucose loading were significantly higher than the fasting levels of pregnant and non-pregnant women ($p=0.000$). However, when comparing the before and second hour values, 75 g-glucose loading did not cause a significant change in ghrelin, obestatin and copeptin levels in pregnant women ($p>0.05$).
CONCLUSIONS: The results of this study concluded that ghrelin, obestatin and copeptin levels did not differ between pregnant and non-pregnant women. Another result of this study was that 75 grams of glucose tolerance test in pregnant women could not cause a significant change in these parameters.
Keywords: Ghrelin, Obestatin, Copeptin, İnsulin Resistance, Oral Glucose Tolerance Test.

PP-025
SEMI-QUANTITATIVE AND QUANTITATIVE EVALUATION IN URINE PROTEIN ANALYSIS

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OBJECTIVES: Proteinuria is defined as the excretion of protein in the urine of more than 150 mg/day. An increase in the amount of protein in the urine is called proteinuria. Urine protein level is an important marker used in the evaluation of renal pathologies. In this study, it was aimed to compare the semi-quantitative and quantitative analysis results in the determination of urine protein.
MATERIALS and METHODS: Patients who were performed semi-quantitative and quantitative protein analysis from spot urine samples admitted to the biochemistry laboratory for routine analysis were evaluated retrospectively. DIRUI H-800 and Beckman Coulter AU680 autoanalyzer were used for semi-quantitative and quantitative analysis, respectively.
RESULTS: In the statistical evaluation, it was found that there was a significant ($p <0.001$), moderate agreement (κ: 0.471) among the results. Significant ($p <0.001$) and good kappa score(κ: 0.651) were found for results below 100 mg/dL. When 0-30, 30-100, 100-300, 300-2000mg/dL ranges were evaluated separately, 86%, 93%, 37% and 36% agreement was observed, respectively.
CONCLUSIONS: In our study, semi-quantitative and quantitative protein measurements were evaluated in spot urine. It was observed that the measurements were more consistent when the protein excretion was below 100 mg/dL. Especially in this group, compliance over 90% reveals the importance of semi-quantitative evaluation in the early stages of proteinuria. In addition to being useful in the early detection of preeclampsia in pregnant women and proteinuria in diabetic and hypertensive individuals, urine strips have an important place in routine laboratory practice, providing evaluation of different chemical markers.
Keywords: Proteinuria, Spot Urine, Urine Strip

PP-026
A NEW TANDEM MASS SPECTROMETERY APPLICATION FOR SERUM SEROTONINE MEASUREMENT

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OBJECTIVES: Serotonin (5-hydroxytryptamine) is an important monoamine neurotransmitter synthesized from the tryptophan and regulating neuronal activity. Drugs targeting serotonin receptors are widely used in psychiatry and neurology. Motility disorders, cardiac abnormalities, and neuropsychiatric disorders (such as depression, schizophrenia, anxiety) may be associated with dysfunction in the serotonergic system. Especially, neuroectodermal tumors are

associated with a significant increase in serotonin levels. Therefore, monitoring serotonin levels is important. The recommended reference range for serum serotonin levels is 101-283 ng / ml. Our aim is to establish a measurement method in LC-MS/MS device for determination of serum serotonin levels.
MATERIALS and METHODS: Mass spectrometric analyzes were performed using an integrated Shimadzu LC-20-AD (Kyoto, Japan) system with an ABSCIEX API 3200 triple quadrupole mass spectrometer (USA) equipped with an electrospray ion source (ESI) operating in positive mode. After adding 50 µL of 1 M NaOH and 2 mL of ethylacetate to 250 µL of sample, it was placed in the orbital shaker at 250 rpm for 20 minutes, and then centrifuged at 3500 rpm for 10 minutes. The supernatants were evaporated with nitrogen gas. The residues were dissolved in 150 µL acetonitrile: water (10: 90;% v: v) and injected.
RESULTS: The method was linear in the range of 5-5000 ng/ml. The intra- and inter- assay CV% values were less than 6%. The retention time for serotonin was 0.55 minutes, and the total analysis time was 5 minutes.
CONCLUSIONS: We have developed a highly accurate, fast, reliable and economical measurement method.
Keywords: Serotonin, LC-MS/MS, Blood Level, Neurotransmitter

PP-027
DEVELOPMENT OF LEUKOCYTE CYSTINE MEASUREMENT IN GRANULOCYTES BY LIQUID CHROMATOGRAPHY- TANDEM MS METHOD

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OBJECTIVES: Cystinosis is an autosomal recessive disorder characterized by accumulation of cystine in lysosomes due to CTNS gene mutations. We aimed to determine the level of cystine in granulocytes in patients with suspected cystinosis and develop a highly sensitive tandem mass spectrometer (MS) method.
MATERIALS and METHODS: Venous blood samples from patients and controls were taken into ACD-tubes; the granulocytes were isolated and after derivatization with N-buthanol cystine was determined in tandem MS
RESULTS: Assay was linear up to 41 µmol/L. Respectively limit of detection (LoD) and limit of quantitation (LoQ) was determined as 0.044 µmol/L 0.095 µmol/L.
CONCLUSIONS: The evidence obtained in this study indicates that this method is analytically sufficient and is suitable for determining the granulocyte cystine content. Clinicians can use the test reliably for routine measurements. However, it should be remembered that hemolysis causes significant interference in cystine measurement and samples should not be frozen for more than 4 weeks
Keywords: Cystinosis, Cysteamine, Granulocyte, Tandem-Mass Spectrometry

PP-028
ELEVATED SERUM ADMA LEVELS IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: Multiple sclerosis (MS) lesions are characterized by the breakdown of blood-brain barrier (BBB), multifocal inflammation, demyelination, oligodendrocyte loss, reactive gliosis, and axonal degeneration. experimental studies have reported conflicting roles of NO in the pathophysiology of neuroimmunological diseases such as multiple sclerosis (MS). Our aim in this study was to evaluate the role of ADMA and SDMA in MS pathogenesis and progression by measuring the levels of these metabolites in MS patients and healthy volunteers.
MATERIALS and METHODS: The study included 35 secondary-progressive MS (SPMS) patients, 49 relapsing- remitting MS (RRMS) patients and 50 healthy volunteers. Serum ADMA, SDMA levels were measured with liquid chromatography-tandem mass spectrometry (LC-MS/MS) device.
RESULTS: Serum ADMA (0.60±0.17 vs 0.54±0.19, p=0.031), SDMA (0.74(0.49-1.19)vs0.70(0.4-0.96),p=0.047)levelsoftheMSgroupwerefoundtobesignificantly higher than the control group. When MS subgroups are compared, ADMA (0.60±0.17 vs 0.54±0.19, p=0.042) levels were higher in SPMS group than RRMS.
CONCLUSIONS: Elevated serum ADMA might be related with the blockade of NO production and cerebral hypoperfusion. Methylated arginine levels might be candidate marker for monitoring of the disease's course.
Keywords: Multiple Sclerosis, Prognosis, ADMA, Tandem Mass.

PP-029
EVALUATION OF SERUM IMMUNOFIXATION ELECTROPHORESIS AND PROTEIN ELECTROPHORESIS DATA AT ONDOKUZ MAYIS UNIVERSITY MEDICAL FACULTY HOSPITAL CENTRAL LABORATORY

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OBJECTIVES: In our study, it was aimed to retrospectively examine IFE and Protein Electrophoresis data studied in Ondokuz Mayis University Medical Faculty Hospital Central Laboratory between January 2017 and December 2019 and compare the findings with the literature.
MATERIALS and METHODS: SIFE and SPE tests were performed on the INTERLAB G26 device. SRE602K kit is used for SPE and SRE 628K kit is used for SIFE. Agarose gel containing Tris-Barbital buffer was used.Acid Blue containing concentrated Acetic Acid solution was used as the staining solution.
RESULTS: As a result of serum IFI analysis of 6767 cases, paraprotein band was detected in 21.36%. In our cases, the most common diagnosis was Multiple Myeloma, the most common IgG kappa (29.46%) according to the paraprotein type, and the second was IgG lambda (12.66%). According to the results of SIFE, no band was observed in SPE in 47.91% of the patients with gammopathy. As a result of the evaluation of SPE data of monoclonal G-Kappa cases, paraproteinemia was not found in SPE in 53.84% of cases with positivity in SIFE.No paraproteinemia was detected in SPE in 37.5% of monoclonal G-Lambda cases detected by SIFE. When Ig G concentrations were compared, it was found that there was a statistically significant difference. Of the patients with gammopathy with SIFE, 55.1% of the patients had gammopathy with urine IFE and 22.22% with urine protein electrophoresis.
CONCLUSIONS: It was concluded that SPE is a useful first-step test in gammopathy screening, but SIFE is the gold standard for diagnosis.
Keywords: Immunfixation Electrophoresis, Protein Electrophoresis

PP-030
THE PATHWAY TO CANCER DIAGNOSIS FROM DIRECT BILIRUBIN: A REFLECTIVE TEST EXAMPLE

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OBJECTIVES: If the laboratory specialist examines the patient's age,clinical diagnosis,current laboratory,imaging results and requests a new test from the patient,it is called a reflective test.In this case,we aimed to evaluate whether there is paraproteinemia interference as a result of negative direct bilirubin test by applying reflective test.
MATERIALS and METHODS: Serum direct bilirubin,total bilirubin levels and total protein,albumin levels required for interference research were studied in the Biochemistry Laboratory autoanalyzer(Beckman Coulter AU5800)in a 75-year-old male patient who applied to Gazi University Faculty of Medicine Oncology outpatient clinic.Serum protein electrophoresis was studied on Helena SAS 1 plus.
RESULTS: Total Bilirubin(TB)=0.83(mg/dL);when Direct Bilirubin(DB)=-0.2(mg/dL),serum index and whether there was a warning in the device were evaluated.The advanced age of the patient with Albumin=3.9(g/dL),Total protein=8.2(g/dL) suggested the possibility of paraproteinemia interference in direct bilirubin measurement.The patient's serum was allocated to study serum protein electrophoresis as a reflective test.A monoclonal peak in the gamma band was detected in serum protein electrophoresis.It was planned to conduct an immunofixation electrophoresis in order to evaluate it in more detail in terms of a hematological malignancy by contacting the doctor in the Oncology Department.
CONCLUSIONS: When interpreting laboratory test results,the possibility of interference specific to the analytical method,test and device should be taken into account,especially with inconsistent results.The use of reflective tests for this purpose,will be beneficial in terms of diagnosing patients earlier and not delaying their treatment.The importance of well-known analytical method, features of the device,evaluation of interference and cooperation with clinicians is clearly seen in the interpretation of test results by laboratory experts.
Keywords: Direct Bilirubin, Interference, Paraprotein, Reflective Testing

PP-031
INVESTIGATION OF INTERFERENCE EFFECT OF GLYHOSATE ON KINETIC UREA MEASUREMENT METHOD WITH UREASE IN SERUM

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OBJECTIVES: Urease (Urea amidohydrolase,E.C. 3.5.1.5.) is a metalloenzyme

containing nickel that catalyzes the hydrolysis of urea to ammonia and carbon dioxide. It is used to measure blood urea concentration. Glyphosate (N-phosphonomethyl glycine) is a broad spectrum herbicide that is frequently used all over the world. In recent years, intensive studies continue on its role in the development of many diseases, especially cancer. In Turkey, Cukurova region is increasing with exposure to glyphosate because it contains the most intensive agricultural areas. The aim of this study is to investigate the possible interference effect of glyphosate on the urease enzyme in in vitro serum urea measurements.
MATERIALS and METHODS: In this study, the effect of different glyphosate concentrations on urease enzyme was investigated. Enzyme activity was studied with the Urease-Glutamate Dehydrogenase dienzymatic system. Kinetic measurements were taken at 340 nm in the 1st, 2nd and 3rd minutes in direct proportional to the consumed NADH and urea amount. The urea content of each experimental step was calculated.
RESULTS: Different urea concentrations (0.3 mg/dL, 0.6 mg/dL, 0.9 mg/dL, 1.2 mg/dL, 1.5 mg/dL) were studied. Negative interference effect of up to 60% was observed in repeated urea measurements of 1,2x10-7 M glyphosate.
CONCLUSIONS: The use of glyphosate has increased in recent years and its acute effects continue. Because it binds minerals such as Manganese, Calcium, Magnesium, Copper and Zinc, it causes erroneous test results caused by interference and increases the risk of encountering malpractices. Therefore, hospital information management systems and clinicians should be warned in advance and be careful against interference.
Keywords: Glyphosate, Interference, Urea, Urease

PP-032
THE EFFECT OF QUININE MOLECULE TO GLUCOSE OXIDASE/ PEROXIDASE ENZYME SYSTEM USED FOR GLUCOSE MEASUREMENT

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OBJECTIVES: Quinine, a natural quinkona alcholoid, is a strong oxidant that has been used for prevention and treatment for malaria for centuries and it is similar to drugs like hydroxychloroquine which is utilized for Covid-19 pandemic. In clinical biochemistry laboratories, glucose oxidase / peroxidase dual enzyme system based on oxidoreduction is one of the most commonly used measurement methods, including automated systems and manual methods, to measure glucose concentrations. In this study, different concentrations of Kinin selected as a model to quinone alkaloids were added to the glucose oxidase / peroxidase enzyme system used to measure glucose concentrations in biological fluids and the effect on serum glucose values at different levels was investigated.
MATERIALS and METHODS: Manual glucose measurement method was used as an endpoint using glucose oxidase/peroxidase dual enzyme system. Measurements were made with a Shimadzu UV 260 spectrophotometer at 500 nm wavelength.Glucose measurements were made by adding varying quinine sulphate concentrations (10 mM-0.1 nM) on different glucose levels (50-200 mg/dL) and possible interferences were evaluated.
RESULTS: Varying concentrations of quinine at 50 mg/dL glucose level causes a low glucose measurement of about 15% on average,while it causes a 40% decrease in the blood glucose value of 100 mg/dL.However, disappearance of this negative interference is observed at high glucose concentrations of 200 mg/dL.
CONCLUSIONS: The data suggest that quinine sulfate reacts competitively with glucose,while high glucose concentration eliminates it. For this reason,it is striking that the use of kinkona derivative drugs,almost all of which have oxidant properties, should be shared by clinics with the laboratory.
Keywords: Glucose Oxidase/Peroxidase Enzyme System, Glucose Measurement, Quinine, Interferences

PP-033
IMPACT OF COVID-19 PROGRESSION ON THE PEOPLE WITH DEMENTIA IN RELATION TO SERUM BIOCHEMICAL PARAMETERS AND HEMOGRAM DATA

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OBJECTIVES: Patients with dementia are much riskier than the other elderly population especially home care nurses can transmit the COVID-19 people with dementia patients when they care elderly at home. Because by aging most of the elderly have one or more age-associated diseases such as mental health, depression and anxiety disorders, AD, asthma or chronic lung diseases, severe kidney disease, moderate or severe liver disease, coronary artery disease and diabetes mellitus, diabetes with end-organ damage, tumor and weak immune system.
MATERIALS and METHODS: We have collected hemogram and serum biochemistry data of the COVID-19 infected people with dementia. We have evaluated severity of the diseases in relation to serum biochemistry and morbidity.
RESULTS: Our clinical data showed that serum biochemical and immunological parameters including glucose, BUN, creatinine, cholesterol, d-dimer values significantly increased in patients have died compared to the healed ($p < 0.001$).
CONCLUSIONS: Our clinical data may reveal evaluation of the serum biochemical and hemogram parameters in relation to the disease severity and morbidity in the people with COVID-19 and having dementia.
Keywords: COVID-19, Dementia, Serum Biochemistry, Hemogram

PP-034
PNEUMATIC SYSTEM AND HOSPITAL INFORMATION MANAGEMENT SYSTEM INTEGRATION IN THE SAMPLE TRANSFER PROCESS

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OBJECTIVES: Pneumatic tube delivery system,widely used in modern laboratories,is specific to organization and allows turnaround times to be significantly reduced.In Yozgat City Hospital, operated with “Public - Private Partnership” model,with high technology in intra-hospital logistics services, a system has been set up with Hospital Information Management System (HIMS) and pneumatic system integration,in which every stage can be monitored from sampling to sending to laboratory.With this configuration,it is aimed to prevent the extension of turnaround times and sample loss.
MATERIALS and METHODS: After test request on HIMS,sampling is carried out and sampling time is read.Code of pneumatic capsule,along with barcodes of the samples added to it,were scanned and recorded together with processing time and personnel information.Laboratory staff, with “Pneumatic Process Screen” authorization defined to them,first scan pneumatic capsule barcode sent to the laboratory, then barcodes of the samples in it.While the sample acceptance process of samples that match with samples recorded in system during the drawing process is carried out,the mismatched samples are seen in a different color. In addition,a message warning system was developed in order to inform authorized persons in the presence of samples that did not reach laboratory within specified time period.
RESULTS: Sample tube losses are prevented with this integration. Sampling,transfer and acceptance times and keeping personnel information records have been a guide for the determination of problems and measures to be taken.
CONCLUSIONS: With this application,traceability of all stages of sampling,transfer and acceptance processes is ensured,sample losses and possible delays are prevented,response time to problems experienced is minimized and sample is transferred safely.
Keywords: Hospital Information Management System, Pneumatic Tube Delivery System

PP-035
COMPARISON OF BLOOD GAS ANALYSIS AND AUTOANALYZER SODIUM, POTASSIUM RESULTS

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OBJECTIVES: A blood gas analyzers (BGA) are vital equipment frequently used in emergency departments and intensive care units. It is clinically important that the measurements of a BGA and an autoanalyzer (AA) provide equivalent results, which is confirmed by their proximitiy to the absolute value. This study aimed to compare the sodium (Na^+), potassium (K^+) values in venous blood samples measured with a BGA and a standard AA with external quality control (EQC) values.
MATERIALS and METHODS: The results of patients that presented to our emergency department between April 1, 2019 and July 1, 2019 and underwent the measurements of Na^+ (n = 5,908), K^+ (n = 5,755) simultaneously by BGA and AA were retrospectively compared. Blood gas analysis was performed using a Siemens Rapid Point 500 device and the serum Na^+, K^+ values were assayed by a Beckman Coulter AU5800 AA. In most studies comparing electrolytes measured by BGA and AA, the mean acceptable differences specified by the United States Clinical Laboratory Improvement Amendment (US CLIA) (19) were used as reference, and total allowable error (TAE) values were taken into account.
RESULTS: In the Spearman correlation analysis between the two measurements, the correlation coefficient (r) was found as 0.78, 0.88 for Na^+ and K^+ respectively. According to the Bland-Altman analysis, in the comparison of Na^+, K^+ values, the average bias percentages at the 95% confidence interval were -0.8 (4.8 to -6.4), -9 (8.6 to -26.5), respectively. In the Bland-Altman plots, bias was observed to be very close to zero for Na^+, in the comparison of the BGA and AA values, while there was significant negative bias for K^+. In the study period, when the EQC analysis, of which the AA device is a member, was evaluated, the three-month EQC results were 8.6%, 12.3%, for Na^+, K^+, respectively considering four times of the root mean squares (RMS) of the %CV values for all participants. Ideally, the ratio of the differences in results to the mean would be expected to be less than these values for each parameter. The Bland-Altman analysis revealed that the ratio of differences to the mean values for Na^+, K^+ were 98.5%, 75.4% respectively,

indicating that all were within expected limits. For the test data on K^+, we evaluated that both the r value and the percentage of acceptable results being low (24.6% of the data were outside acceptable limits) were due to the significant negative bias. CONCLUSIONS: We concluded that Na^+ results obtained from BGA can be used instead of results obtained from AA, but K^+ results cannot be used.
Keywords: Acid-Base Balance; Autoanalyzer; Blood Gas Analysis; Electrolytes

PP-036
DETERMINATION OF THE EFFECT OF BORAX ON COLORECTAL CANCER CELL LINE (DLD-1) AND INVESTIGATION OF SYNERGISTIC EFFECTS WITH 5-FLUOROURACIL

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OBJECTIVES: Natural compounds are very important potential sources for cancer treatment today. One of the most important candidates among natural compounds is boron and its compounds. The aim of this study is to evaluate the proliferative, cytotoxic and apoptotic effects of Borax (Sodium-Tetraborate) on colon cancer cells (DLD-1) and synergistic effects with 5-Fluorouracil used in routine therapy.
MATERIALS and METHODS: Cytotoxic and proliferative effects of borax and 5-fluorouracil were investigated by 3-(4.5-dimethylthiazol-2y])-2,5-diphenyltetrazolium bromide (MTT) method. Physiological changes in the cell membrane and cytoplasm during apoptosis were evaluated qualitatively in fluorescence microscopy with the immunofluorescence DAPI staining method. Necrotic and apoptotic effects were investigated quantitatively with Annexin V / Propidium Iodide(PI) by flow cytometric method.
RESULTS: It was determined by MTT analysis that Borax inhibited the proliferation of DLD-1 cells with an IC50 value of 500 µM and 5-Fluorouracil 50 µM, and 48 hours of administration was more effective. Qualitatively, the nuclear structures of the cells and the cytoplasm ratio decreased as a result of the first 24 and 48 hours of the cells treated with Borax compared to the control groups. In addition, an increase in cellular apoptotic bodies was found. When the Borax and 5-FU groups were compared, it was seen that the synergistic effect was more effective. It was found quantitatively that Borax increases apoptosis and necrosis depending on time and concentration.
CONCLUSIONS: We think that the effects of borax, such as suppressing proliferation, increasing apoptosis and necrosis in DLD-1 cells, will contribute to future anti-cancer studies and will be supported by in vivo studies.
Keywords: Colorectal Cancer, Bor, Borax, 5-Fluorouracil, Apoptosis

PP-037
EVALUATION OF POTENTIAL TUMOR MARKERS THAT MAY PREDICT OF NEOADJUVANT TREATMENT EFFICIENCY IN RECTAL CANCER

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OBJECTIVES: The recurrence of disease or resistance to neoadjuvant treatment develops in locally advanced rectal cancer(RC) due to autophagy, apoptosis or adaptation to hypoxia. We aimed to evaluate potential tumor markers in these pathways that may help to monitor the response to neoadjuvant treatment in locally advanced RC.
MATERIALS and METHODS: Twenty-five patients with locally advanced RC were examined in the study. Gene expression and protein levels of Beclin 1, Survivin, hypoxia-inducible factor-1 alpha(HIF-1α) and Carbonic Anhydrase-9(CA9) were analyzed in fresh tissue specimens and blood samples. The relationship of these markers with tumor staging and regression grade, and the situation of these markers after neoadjuvant treatment were evaluated.
RESULTS: According to tumor regression grade, the group responding to treatment was 40% of the patients and the non-response group was 60% of them. Higher blood CA9 gene expression levels and lower blood HIF-1α protein levels were found in the response group. After neoadjuvant therapy, 36% of the patients had downstaging according to the T stage, and 72% of them had downstaging according to the N stage. No statistically significant change was found in gene expression and protein levels in patients who had T and N downstaging. After neoadjuvant treatment, tissue Beclin 1 and blood Survivin gene expressions, tissue CA9, blood Beclin 1 and blood HIF-1α protein levels decreased statistically significant.
CONCLUSIONS: It was considered that these molecules may provide benefit in the prediction of efficiency of the applied treatment approach because of the relations with the response to neoadjuvant treatment of them in our study.
Keywords: Beclin 1, Carbonic Anhydrase- 9, Hypoxia-Inducible Factor-1 Alpha, Rectal Cancer, Survivin

PP-038
THE EVALUATION OF METHYLTHIAZOLE DERIVATIVES ANTICANCER AND ANTIINFLAMMATORY ACTIVITIES IN A549 CELL LINES

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OBJECTIVES: Thiazole derivative compounds are very important in new drug design because they are in the structure of biologically active compounds used in cancer treatment. In this study, nine new compounds containing 4-methylthiazole-2-acetamide fragment in their main structure were synthesized and their analysis was carried out by high resolution mass spectrometry (HRMS, LC/IT-TOF), 1H-NMR and 13C-NMR methods. Then, with the activity studies, the potential of these compounds to be drugs and their effects on the mechanisms that play a role in the anticancer effect were examined.
MATERIALS and METHODS: The cytotoxicity values of the compounds on A549 cell lines were determined by MTT method and their anticancer activities were evaluated. Early/late apoptotic and necrotic cell ratio was evaluated by Annexin V-FITC method, mitochondrial membrane integrity was evaluated by flow cytometry and caspase-3 activation levels were measured.
RESULTS: It was observed that the activity of compound 3c containing 4,5-dihydrothiazole moiety was higher than the positive control cisplatin. The cytotoxic effect value of compound 3c was 30.67±2.31; the cytotoxic effect value of cisplatin was determined as 14.0±1.41. When the apoptotic effect experiment results were evaluated, it was seen that the percentage of compound 3c (44.9%) for driving cells to apoptosis was higher than the percentage of cisplatin to drive cells to apoptosis (29.8%).
CONCLUSIONS: The findings obtained from our study show that the 3c compound has anti-inflammatory and anticancer effect potential and will contribute to drug development studies based on thiazole derivative compounds.
Acknowledgements: This work was supported by Anadolu University Scientific Research Projects Commission (Project No. 1807S251).
Keywords: Methylthiazole Derivatives, Anti-Inflammatory, Anticancer, A549 Cell Line.

PP-039
DEVELOPMENT OF APTAMER BASED BIOSENSOR FOR PROSTATE CANCER CELL DETECTION

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OBJECTIVES: Determination and analysis of circulating tumor cells (CTC) also shed light on determining the origin of the cancer and the treatment to be applied. For this reason, determination of CTCs, especially with the presence of metastasis, is very important in monitoring cancer diagnosis, diagnosis and treatment. The determination of CTCs is difficult, especially since their rate of presence in blood is very low. Therefore, we have developed an aptamer-based system for CTC analysis that can provide more sensitive and faster analysis. To validate the concept, LnCaP cells containing prostate specific membrane antigen (PSMA) were targeted from prostate cancer cell lines and a biosensor was developed using aptamers selective to PSMA.
MATERIALS and METHODS: In this study, the gold nanoparticle electrodes were modified with SH-tipped PSMA aptamer and direct cell determination was determined impedimetrically (EIS) with PSMA-binding aptamers on LnCaP cells, and the results were confirmed by scanning electron microscopy.
RESULTS: With the developed biosensor, with linear measurement between 1 and 40 cells / mL, the LOD value was found to be 620 cells per liter. LnCaP determination was performed impedimetrically in 130 seconds. Cells with

aptamers bound to gold nanoparticles were verified by SEM and AFM. Analysis was performed within real samples by adding standard to serum samples.
CONCLUSIONS: As a result, a low cost, fast and selective CTC biosensor has been developed.
Keywords: Circulating Tumor Cells, Lncap, Aptamer, Biosensor, Impedance

PP-040
INVESTIGATION OF SERUM LEVELS OF TRYPTOPHAN AND ITS METABOLITES IN PATIENTS WITH GASTRIC CANCER

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OBJECTIVES: The aim of this study was to analyze the serum levels of tryptophan and its metabolites, kynurenine and kynurenic acid, in patients diagnosed with gastric cancer and in healthy individuals, and to evaluate the serum levels of these metabolites between the two groups together with the clinical and pathological findings of the patients.
MATERIALS and METHODS: 32 gastric cancer patients and 61 healthy controls were included in the study. For serum level analysis, blood samples taken from patient and control groups, were analyzed by liquid chromatographic method (HPLC-FD). Statistical significance analysis was performed by applying t test with the obtained data with SPSS21 statistical program.
RESULTS: The samples included in the study, the levels of tryptophan and kynurenine were found to be lower in the patient group compared to the control group, while the level of kynurenic acid was higher. When serum levels in the patient group were considered in terms of tumor stage and node metastasis, kynurenine levels and kynurenic acid levels were found to be higher in patients with advanced tumor stage. In patients with node metastasis, tryptophan levels were found to be lower than the control group and higher than the kynurenic acid levels.
CONCLUSIONS: Our research shown that the analysis of serum levels of tryptophan and its metabolites may play an important role in early diagnosis and follow-up of the disease. We believe that it is necessary to study with more samples in order to achieve statistical significance in the differences we have revealed. Acknowledgement: This study is supported by the I.U. BAP (TYO-2020-29734).
Keywords: Kynurenine, Kynurenic Acid, Gastric Cancer, Tryptophan

PP-041
SYSTEMIC IMMUNE-INFLAMMATION INDEX: COULD IT BE A BIOMARKER IN LUNG CANCER?

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OBJECTIVES: Lung cancer remains the leading cause of cancer-related mortality in the World. This retrospective study aimed to investigate the association between Systemic Immune-Inflammation Index (SII) in patients with lung cancer.
MATERIALS and METHODS: A total of 140 patients admitted to the Oncology Outpatient Clinic between 2013 and 2018 and diagnosed with lung cancer and 30 healthy control matched for age and sex were included in the study. C reactive protein (CRP) and Complete Blood Count(CBC) results were investigated from electronic archives. Neutrophil / lymphocyte (NLR) and platelet/lymphocyte (PLR) ratios were calculated. SII was defined as platelet count × neutrophil count/lymphocyte count.
RESULTS: The mean age was 62.61±8.29 in the patient group, and 54.93 ± 10.79 in the control group. CRP, leukocyte, monocyte, neutrophil, and platelet counts were found significantly higher in the LC group compared to the control group ($p < 0.05$). Also, SII, NLR, and PLR were significantly higher in LC patients than in the control group ($p < 0.001$). Among all indices, SII showed the highest diagnostic accuracy (84.12%) with a receiver operating characteristic (ROC) curve at a 95% confidence interval and an optimal cut-off value of 546.96 with an AUC of 0.892 ± 0.025.
CONCLUSIONS: SII is an inexpensive, non-invasive, useful index that can be used as an inflammatory biomarker in LC patients. Researches in larger groups are needed to better define its effects and role in LC patients.
Keywords: Lung Cancer, Small Cell Lung Cancer, Systemic Immune-Inflammation Index(SII), Platelet-Lymphocyte Ratio(PLR), Neutrophil-Lymphocyte Ratio(NLR)

PP-042
COMPARISON OF HOMOCYSTEINE, VITAMIN B12, FOLIC ACID AND COAGULATION PARAMETERS IN PEDIATRIC STROKE PATIENTS

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OBJECTIVES: Stroke in childhood is diagnosed more frequently in recent years and it has a potential for life-long morbidity and mortality. The aim of this study is to investigate homocysteine, vitamin B12, folic acid, activated partial thromboplastin time(aPTT), prothrombin time(PT), INR and fibrinogen, which play an important role in the mechanism of thromboembolism in pediatric stroke patients.
MATERIALS and METHODS: 26 arterial ischemic stroke (AIS) patients (mean age=9.08± 5.34), 16 cerebral venous thrombosis (CVT) patients (age=11.06±5.45) who applied to Pediatric Neurology outpatient clinic between March 1 and September 1,2020 and 34 healthy controls (mean age=10.15±4.08) were included. Homocysteine levels were measured by LC-20 (Shimadzu Corporation, Tokyo, Japan) with HPLC system, Vitamin B12, Folic Acid levels were measured by Cobas c600 (Roche Diagnostic, USA) with electrochemiluminescent method and aPTT (sn), PT (sn), INR, fibrinogen were measured by the Stago STA RMax with viscosity-based mechanical method. Statistical analysis of the outcomes was performed in SPSS 18.0 program. The distribution of the groups was analyzed by Shapiro-Wilk test. To test for statistical significance, one-way ANOVA and t-test were used for normally distributed variables whereas Krusskal Wallis and Mann-Whitney U tests were used for non-parametric variables. Chi-square test was used for categorical variables.
RESULTS: When compared with AIS, SVT and control group, only homocysteine test was found to be significantly different among groups ($p<0.001$). A significant difference ($p<0.005$) was found among all groups regarding whether they have homocysteine levels above or below the clinical decision limit of (<15 umol/L) with chi-square test.
CONCLUSIONS: This study shows that hyperhomocysteinemia is a risk factor for ischemic stroke in children.
Keywords: Cerebrovascular Stroke, Child, Homocysteine

PP-043
THE EFFECT OF SILIBIN ON HYPERLIPIDEMIA IN RATS FED HIGH CHOLESTEROL DIET

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OBJECTIVES: The most common cause of myocardial infarction is atherosclerosis. Atherosclerosis is also a known fact that hyperlipidemia develops. Silybin is a type of flavonoid and has antioxidant properties. The effect of silybin on hyperlipidemia and the release of silybin by oxidative stress in the rats that started to work were aimed.
MATERIALS and METHODS: The rats were divided into four groups as control, high cholesterol, high cholesterol+ 50 mg siliybin and high cholesterol+ 100 mg siliybin. High cholesterol diet (HCD) was prepared with egg yolk. Two groups were then injected with 50 and 100 mg of silibin for 10 days. Blood lipids were measured spectrophotometrically. Colorimetric TAS and TOS kits were used to assay of oxidative stress levels. Oxidized LDL levels were measured using ELISA kits (Rat OxLDL / Oxidized LDL Kit).
RESULTS: According to Kruskal Wallis analysis for the four independent groups, the results are the same as in the table. LDL, cholesterol, HDL,TG, VLDL, OxLDL,TAS parameters, a significant difference was found between the groups ($p < 0.05$).
CONCLUSIONS: In our study, cholesterol, LDL and TG, VLDL levels were significantly increased between the groups fed with HCD and the control group, while a significant decrease was observed in HDL level compared to the control group. There was also a significant difference in OxLDL and TAS levels. Since the formation of OxLDL is required in the development of atherogenesis. Silibin lowers TG, Cholesterol, VLDL and LDL levels, increases HDL levels and decreases hepatic lipid accumulation at a dose of 100 mg / kg in hypercholesterolemic rats.
Keywords: Silibin, Hyperlipidemia, Antioxidant, Atherosclerosis

PP-044
EVALUATION OF LIPID PROFILE AND T3 / T4 RATIO ACCORDING TO TSH GROUPS IN HYPOTHYROID PATIENTS RECEIVING HORMONE REPLACEMENT THERAPY

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OBJECTIVES: Serious disorders occur in the composition and transport of lipoproteins in cases where thyroid hormones are secreted less or more than normal levels. In this study, our aim is to examine the relationship between different TSH levels and lipid profile in patients with hypothyroidism using LT4.
MATERIALS and METHODS: The study included 2934 patients diagnosed with hypothyroidism in 2019 and currently being treated with LT4. Results of simultaneous thyroid function tests (TSH,fT3,fT4) and lipid tests (total cholesterol(TC),triglyceride(TG),HDL-C and LDL-C) were obtained from the LIS. Patients were divided into 5 grups based on TSH values: <0.1 mIU/L (group 1), 0.1-0.35 mIU/L (group 2), 0.36-4.5 mIU/L (group 3), 4.6-10 mIU/L (group 4) and >10 mIU/L (group 5).The relationship between lipid profile and fT3/fT4 ratio was examined in these five groups.
RESULTS: While there was a significant relationship between TSH groups and TC,LDL-C,TG and fT3/fT4 ratio, no significant relationship was found with HDL-C. For each parameter,when TSH groups were compared within themselves, a significant difference was found for TG only between 2nd-3rd and 2nd-5th groups.There was no significant difference between any pair of groups for cholesterol and LDL-C. For the fT3/fT4 ratio, a significant difference was found between all groups except for 1st-2nd. No significant correlation was found between TSH level and any parameter other than fT3/fT4 ratio.
CONCLUSIONS: The reason that there was no significant correlation between TSH levels and any parameters other than the fT3/fT4 ratio may be due to the fact that patients were receiving LT4 treatment. We concluded that the low correlation between TSH levels and fT3/fT4 ratio and the lack of correlation with lipid parameters were due to the improvement in the levels of these parameters due to LT4 intake.
Keywords: TSH, Hypothyroidism, Lipoprotein, Triglyceride, Cholesterol

PP-045
ANALYSIS OF PIK3CA GENE POLYMORPHISM AND PI3K SERUM LEVEL IN BREAST CANCER

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OBJECTIVES: Breast cancer is a common type of cancer among women and that develops as a result of various genetic, environmental or hormonal factors. The PI3K (Phosphatidylinositol 3-kinase) signaling pathway has been studied mostly in human malignancies play important roles tumorigenesis and cancer development by triggering cell proliferation and angiogenesis. In our study; we aimed to evaluate the possible relationships between *PIK3CA* C>A gene variation (rs6443624) and PI3K serum levels in breast cancer risk with clinical, prognostic parameters.
MATERIALS and METHODS: 61 patients with breast cancer, 101 healthy individuals without benign or malignant tumors were included in the current study. All cases were treated at the Istanbul Training and Research Hospital Surgery Clinic. *PIK3CA* gene variation was detected with the Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) technique and ELISA method was used to determine serum PI3K levels. All statistical analyses were applied with SPSS 15 statistical package.
RESULTS: In conclusion of our study, no significant difference was observed between breast cancer patients and healthy individuals in terms of *PIK3CA* C>A genotype and allele distributions *(p>0.005)*. We also did not observe any significant correlation between the *PIK3CA* C>A genotypes distribution and the clinical and prognostic parameters of the patients. Serum PI3K levels were significantly higher in patients compared with those in the control group *(p=0.033)*.
CONCLUSIONS: In present study, it was concluded that serum levels of PI3K may play a role in breast cancer risk and *PIK3CA* C>A gene polymorphism should be examined among larger sample groups.
Keywords: Breast Cancer, PIK3CA, Polymorphism

PP-046
APOE GENOTYPING IN TURKISH PATIENTS DIAGNOSED WITH LATE-ONSET ALZHEIMER'S DISEASE

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OBJECTIVES: Alzheimer's disease (AD) is the most common form of dementia in developed populations. It is a neurodegenerative disease characterized by the combination of genetic, metabolic, cellular, epigenetic factors, and synapse losses as well as neuronal losses, and intercellular amyloid plaque and intracellular neurofibrillary structures. APOE gene polymorphisms are used in the diagnosis and treatment of late diagnosed AD disease. In our study, it was aimed to determine the genotype and allele distributions by APOE genotyping in individuals diagnosed with Alzheimer's Disease and / or susceptibility.
MATERIALS and METHODS: A total of 37 individuals (18 females, 19 males) between the ages of 42-83 participated in our study. DNA isolations were performed from peripheral blood, genotyping procedures were completed using real-time PCR (QuantStudio3, Thermo Fisher Scientific) and TaqMan Genotyping assays.
RESULTS: In our study, it was determined that 62% of the individuals were E3/E3, 22% E3/E4,14% E4/E4 and 2% E2/E4 genotype. When we look at allelic distributions, E2 allele was 1%,E3 allele 73% and E4 allele 26%. E3 was found to be 67% in women and 79% in men. E4 was found as 33% in women and 18% in men. E2 was determined to be 3% only in men.
CONCLUSIONS: APOE genotyping is important as a biomarker in early diagnosis of Alzheimer's disease, directing treatment and determining susceptibility. In our study, the disease-related E4/E4 genotype and E4 allele are similar to the percentage rates in other populations. However, studies with higher data are needed to better understand the effect of the related alleles.
Keywords: Alzheimer's Disease, ApoE Genotyping, Dementia

PP-047
DETERMINATION OF BETA THALASSEMIA MUTATAIONS IN PREMARITAL COUPLES AT KOZAN

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OBJECTIVES: Beta thalassaemia trait in our country is given as 2% but at some region this ratio increase as to 10%. IVSI-110 is the most common beta thalassaemia mutation in Turkey, and IVSI-6, Fsc 8, IVSI-1, IVSII-745, IVSII-1, Cd39,-30 and Fsc5 mutations follow this. In this study, we aimed to determine genetic heterogeneity of beta thalassemia mutations in Kozan.
MATERIALS and METHODS: 5 ml blood samples was taken from 14 beta thalassemia trait in a year. Haematological datas were obtained by cell counter. HbA2 was determined by HPLC. Ten different mutations were screened by ARMS method.These common beta thalassemia mutations are -30 (T>A), Cd 8 (-AA), Cd 8/ 9 (+G), IVS 1-1 (G>A), IVS 1-5 (G>C), IVS 1-6 (T>C), IVS 1-110 (G>A), Cd 39 (C>T), IVS 2-1 (G>A), IVS 2-745 (C>G) in Cukurova region.
RESULTS: Five of the couples were detected IVS1-110 heterozygous. Two women and 2 men were charecterized by DNA sequencing. Ten chromosomes were detected as IVS 1-110 in 28.
CONCLUSIONS: IVS 1-110 (G>A) was seen the most common mutation in Kozan. Five different beta thalassemia mutations were found in this study.
This project was supported by Cukurova University Research Project Unit (Proje ID: FLY-2019-12225).
Keywords: Beta Thalassemia, IVS1-110 (G>A)

PP-048
OXIDATIVE AND NITROSATIVE STRESS IN PATIENTS WITH MENINGITIS

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OBJECTIVES: Meningitis is an acute inflammation of the protective membranes covering the brain and spinal cord, known as the meninges. Bacterial meningitis (BM) is a life-threatening disease with high mortality rates and bad neurologic sequelae especially in cases where diagnosis and antibiotic administration are delayed. In this study, oxidative and nitrosative stress were evaluated in CSF and blood samples were taken from patients with meningitis. Our goal was to identify

a fast and a reliable biomarker using these parameters in order to the diagnose of BM.
MATERIALS and METHODS: In this study, 37 BM, 30 tuberculous meningitis (TM) and 30 viral meningitis (VM) cases between the ages of 18-65 were included. Blood and CSF routine parameters of the cases were evaluated. Serum/CSF total oxidant status (TOS) and total antioxidant status (TAS) were measured by the Erel method. Nitrotyrosin (NT) was measured by using enzyme-linked immunosorbent technique (ELISA) in both serum and CSF.
RESULTS: Serum NT, CSF TOS and TAS levels were not significantly different in three groups (p>0,05). Cerebrospinal fluid NT levels were significantly higher in BM than TM group (p<0,05). VM patients had higher serum TOS and TAS concentrations than TM group (p<0,05).
CONCLUSIONS: As a result, we can say that the oxidative and nitrosative stress markers studied are not a rapid and reliable biomarker in BM's diagnosis.
Keywords: Meningitis, Oxidative Stress, Nitrosative Stress

PP-049
EFFECT OF OXIDATIVE STRESS INJURY INDUCED BY LIVER ISCHEMIA-REPERFUSION ON KIDNEY AND HEART: PROTECTIVE ROLE OF ISGIN (RHEUM RIBES L.)

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OBJECTIVES: The formation of reactive oxygen species (ROS) is frequently observed in distant tissue damage. In this study, it was aimed to show the effects of Isgin (Rheum ribes L.) application on distant tissue kidney and heart caused by liver ischemia-reperfusion (I / R).
MATERIALS and METHODS: 24 Sprague Dawley albino rats divided into 3 groups. Sham, I/R and Treatment group (50 mg/kg isgin). Only surgical stress procedure was applied to the sham group. In the I / R group, 30 minutes of ischemia reperfusion was applied with the aid of a clamp. Heart and kidney tissues were removed for detection of distant tissue damage. Catalase (CAT), superoxide dismutase (SOD) activity and malondialdehyde (MDA) levels were spectrophotometrically measured.
RESULTS: MDA levels were significantly higher in kidney and heart tissue of I/R group compared to sham group (p <0.05). MDA levels in the treatment group showed a significant decrease compared to the I/R group (p <0.05). The amount of reduced CAT and SOD in kidney and heart tissues was significantly lower in the I/R group compared to the sham group (p <0.05). CAT and SOD activities increased significantly in treatment group compared to I/R group (p <0.05).
CONCLUSIONS: Administration of Isgin after liver I / R induction may protect against I / R damage by regulating kidney-heart function. Due to the antioxidant properties of Isgin, it can be used as a protective agent that can reduce the MDA level on the kidney and heart against liver I/R and contribute to the regulation of kidney and heart functions.
Keywords: Ischemia-Reperfusion, Liver, Oxidative Stress, Rheum ribes L.

PP-050
PROSPECTIVE INVESTIGATION OF THE RELATIONSHIP BETWEEN LIPID PEROXIDATION LEVELS AND CLINICAL FINDINGS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: Rheumatoid arthritis (RA) is an autoimmune, chronic, and inflammatory disease. The treatment with disease-modifying anti-rheumatic drugs (DMARDs) is applied following the diagnosis. Reactive oxygen species, which occurs endogenous or exogenously, cause oxidative damage in macromolecules such as lipids, proteins, or DNA. These damaged products are associated with many diseases. In this study our aim is to examine how lipid damage vary in RA patients compared to healthy individuals, as well as to investigate prospectively the relationship between lipid peroxidation levels and patients' clinical findings such as DAS28 (Disease Activity Score), HAQ (Health Assessment Questionnaire), and inflammation parameters.
MATERIALS and METHODS: First urine samples in the morning of the 54 RA patients were collected at the time of diagnosis and in the sixth month of treatment as they applied to DEU Hospital Rheumatology Clinic. 29 healthy volunteers were included. The measurement of 8-Isoprostane level in the urine samples was carried out by ELISA (Cayman Chemical, USA).
RESULTS: 8-isoprostane levels of the patients were significantly higher than controls (p<0.001). A significant increment of 8-isoprostane levels was observed in the sixth month of treatment, compared to the pre-treatment (p=0.016). The decrease in DAS28 scores in the sixth month of treatment (p<0.001); revealed the effectiveness of treatment. There is a strong positive correlation between DAS28 and HAQ scores, which were evaluated at the time of diagnosis (r=0,714; p<0,001). No significant correlation was found between clinical findings and 8-isoprostane levels.
CONCLUSIONS: Our results showed that 8-isoprostane levels increased despite regression of the disease after treatment.
Keywords: Rheumatoid Arthritis, Oxidative Stress, Lipid peroxidation, Elisa

PP-051
EVALUATION OF LABORATORY TESTS IN PCR (+) HOSPITALIZED COVID-19 CASES ACCORDING TO AGE AND GENDER

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OBJECTIVES: Covid-19 pandemic, which threatens life globally, continues to maintain its seriousness. Defining laboratory tests in the diagnosis and follow-up of Covid-19 patients; It has gained importance in diagnosing Covid-19 and distinguishing severe or non-severe cases. In addition, it is very important in terms of identifying those with low or high mortality risk of the disease. OBJECTIVE: To determine whether the laboratory data used in the follow-up and severity of Covid-19 disease differ according to age and gender.
MATERIALS and METHODS: Laboratory data of PCR positive patients who received inpatient treatment at Tire State Hospital between March-August 2020 were evaluated using the retrospective method as a research method. Although PCR and CT are important in the diagnosis of the disease, laboratory data have gained importance in monitoring the disease and determining its severity. WBC, lymphocyte, thrombocyte, urea, creatinine, CRP, ferritin, D-dimer, troponin parameters were studied in the patients. These parameters were compared according to gender and age group.
RESULTS: Neutrophil lymphocyte ratio was found to be high in male and advanced age. Platelet 160 and below values are meaningful at most over 45 years of age. However, there is no difference between sex. Urea creatinine ratios are significant over the age of 45, but there is no difference between men and women. Ferritin values are also significantly higher in male patients over the age of 45. CRP values are also above the age of 45 and significantly exceeded the poor prognosis limits in men. Troponin is significantly higher over the age of 45. D-dimer was not significant.
CONCLUSIONS: Even if there is no chronic disease, laboratory data in patients with advanced age and male gender diagnosed with Covid 19 should be considered as indicators of poor prognosis.
Keywords: Covid 19, Laboratory Parameters, Pandemic

PP-052
RED COLORED URINE WITHOUT ERYTHROCYTHE, BROWN COLORED SERUM AND PLASMA SAMPLES: A LEPTOSPIROSIS CASE

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OBJECTIVES: This case report describes a 40-years-old patient diagnosed as leptospirosis; with dark brown plasma and serum samples, red color urine sample but no erythrocytes.
MATERIALS and METHODS: The patient admitted to infection disease clinic with a complaining of nausea, vomiting, fever.There was splenectomy in his medical history. Biochemical parameters, complete blood count (CBC) and urine analysis were performed in our laboratory.
RESULTS: Increased levels of hemolysis index (232), creatinine (1.70 mg/dL), procalcitonin (1.75 ng/ml), total bilirubin (19.01 mg/dL), indirect bilirubin (7.96 mg/dL), direct bilirubin (11.05 mg/dL), C-reactive protein (6.67 mg/dL), BUN (25.1 mg/dL), AST (330 U/L), LDH (700 U/L), CK (495 U/L) were obtained. CBC results showed low RBC (3.33* 106/µL), hemoglobin (10.8 g/dL) and platelet concentrations (85*103/µL). There was undescribed substances in red urine without any erythrocytes in microscopic examination and +++ proteinuria in chemical analysis. The microscopic agglutination test result was reported as 1/50 titration ratio. The direct and indirect Coombs tests were negative, haptoglobin level was normal (43 mg/dL). The patient was diagnosed as leptospirosis by clinician and started to treatment. The undescribed substances were decreased, and also +++ urobilinogen, + bilirubin, and ++ protein observed in chemical analysis of urine at 3th day of hospitalization.
CONCLUSIONS: Leptospirosis is a widespread zoonosis caused by spirochetes of the genus Leptospira. We must keep in mind to leptospirosis in patients who had abnormal renal and liver function tests, and also brown color serum and plasma samples and red color urine samples but no erythrocytes in urine analysis.
Keywords: Brown Color Serum, Leptospirosis, Red Color Urine.

PP-053
BIOCHEMICAL AND HEMATOLOGICAL FINDINGS IN A CHILD CASE WITH HAEMOLYTIC UREMIC SYNDROME

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OBJECTIVES: Hemolytic-uremic syndrome (HUS) is a disease characterized by progressive renal failure with microangiopathic hemolytic anemia and thrombocytopenia. We investigated biochemical and hematological tests for the diagnosis of HUS.
MATERIALS and METHODS: A two-year-old girl was admitted to the Emergency Department with nausea and vomiting symptoms. Five days earlier, she had diarrhea that lasted for three days. The patient's Biochemistry and complete blood Count tests were performed on the Roche Cobas 6000 biochemistry and Sysmex XN 1000 hematology platforms. Blood smears stained manually with May Grunwald Giemsa and Brilliant Cresyl Blue were investigated for cell morphology and reticulocyte count, respectively.
RESULTS: The most striking Biochemical findings were: Urea 163,4 mg/dl (8-40) and Creatinine 2,21 mg/dl (0,24-0,5) indicating kidney failure. Very high levels of LDH 2091 U/L (175-400), moderetly elevated AST 79,7 U/L (10-50), and a high frequency of schistocytes 2,5% (<0,5) and reticulocytes 8.2% (1-1,8) are evidence of in vivo hemolysis. Thrombocytopenia was evident as a low platelet count of 13 k/µL (150-450). The patient also had anemia with Hemoglobin 7,6 g/dl (11-14,5) and leucocytosis 13,5 k/µL (5-12). Three weeks later, the patient recovered with no laboratory finding of HUS.
CONCLUSIONS: Clinical presentation, anamnesis, basic biochemistry, and hematological findings are critical parameters for diagnosing HUS. The most crucial laboratory evidence of renal insufficiency is high levels of Urea and Creatinine. In vivo hemolysis is effectively detected by high levels of LDH and moderately elevated AST, and a high percentage of schistocytes and reticulocytes. Finally, low levels of platelets fulfill the triad criteria for HUS.
Keywords: Hemolysis, HUS, Renal insufficiency, Thrombocytopenia

PP-054
A CASE REPORT: THROMBOTIC THROMBOCYTOPENIC PURPURA TRIGGERED BY INFLUENZA A

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OBJECTIVES: Thrombotic thrombocytopenic purpura (TTP) is a life-threatening thrombotic microangiopathy characterized by thrombocytopenia and microangiopathic hemolytic anemia, in which ADAMTS13 enzyme activity is significantly low. ADAMTS13 is an important metalloprotease regulating VWF. It cleaves Tyr(1605)-Met(1606) bond in VWF-2 domain. Herein, we report a TTP patient associated with Influenza A.
MATERIALS and METHODS: A 39-year-old male patient was admitted to hospital with dark urine color and headache. In laboratory assessment, 14 g/dL hemoglobin, 11000/µL leucocyte, 9000/µL platelet, 350 U/L LDH and 3 mg/dL indirect bilirubin were detected. Schistocytes(%5) were detected in peripheral blood smear. Blood samples were collected for ADAMTS13 activity and its inhibitor, and daily plasma exchange was initiated. ADAMTS13 activity was measured by using enzyme immunoassay. For calculating inhibitory assay, the patient's plasma was mixed with pooled normal plasma (1:1), and incubated in 37° C for an hour then ADAMTS13 activity was measured.
RESULTS:Afterthreeplasmaexchangesessions,thrombocyteandLDHvalueswere normal. The diagnosis of acquired TTP was confirmed by detecting ADAMTS13 activity at 0.3%, ADAMTS13 antigen 0.07 U/mL, and ADAMTS13 inhibitor >90U/mL. Influenza A was detected in the swab from the upper respiratory tract.
CONCLUSIONS: Few cases of TTP associated with Influenza A have been reported before. Patients with influenza A symptoms and thrombocytopenia, even if they are not anemic, should be evaluated in terms of TTP. Plasma exchange decision should be made before obtaining ADAMTS13 activity test results with a suspicion of TTP.Availability of diagnostic tests will help clinicians to confirm the diagnosis of TTP and plan long-term treatments.
Keywords: ADAMTS13, TTP, Influenza A, Microangiopathic Hemolytic Anemia

PP-055
EVALUATING THE APPLICABILITY OF IRON(III)-SENSING, FLUORESCENT UROLITHIN DERIVATIVES TO LIVING-CELL IMAGING IN NEURODEGENERATIVE DISEASES

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OBJECTIVES: Iron is the most common transition metal in biological systems. Besides being a superior catalyst, it can also lead to the formation of extremely toxic free radicals. It is known that iron is essential for various brain activities ranging from mitochondrial respiration to neurotransmitter biosynthesis. Recent studies have shown that iron overload also plays a causal role in neurodegenerative disorders such as Alzheimer's and Parkinson's diseases. Here, using two different brain cancer cell lines as biological models, we aim at investigating whether two fluorescent urolithin derivatives could assist in monitoring/detecting iron(III) accumulation in living cells.
MATERIALS and METHODS: Urolithins are metabolites normally produced by the intestinal flora. First, natural urolithin (URO-B) and its synthetic analogue (THU-OH), both of which had fluorescent traits, were synthesized by chemical methods. Next, the cytotoxic activities of the two urolithin derivatives on neuroblastoma (SH-SY5Y) and glioblastoma (DBTRG-05MG) cell lines were tested by the MTT cell proliferation assay. Last, the quenching effect of iron(III) on brain cancer cells pretreated with the urolithin derivatives was imaged by fluorescence microscopy.
RESULTS: This study demonstrated that URO-B and THU-OH were not significantly lethal to cells in the low- to mid-micromolar range (≤50 µM). Also, the study determined that urolithin derivatives could easily penetrate the cell and turn off the fluorescent signal by binding to iron(III) in the intracellular environment.
CONCLUSIONS: Synthesized fluorescent urolithin derivatives can selectively and rapidly monitor/detect iron(III) accumulation in living brain cells. These chemosensors may prove useful in the early diagnosis of neurodegenerative diseases and in the prognosis of patients in the future.
Keywords: Neurodegenerative Diseases, Iron Accumulation, Urolithins

PP-056
ESTABLISHMENT OF PEDIATRIC REFERENCE INTERVALS FOR CERULOPLASMIN, A1AT, TRANSFERRIN AND SFTR TESTS USING STORED TEST RESULTS

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OBJECTIVES: Reference intervals can vary due to differences in age, gender, or used laboratory technique. The C28-A3 guideline approves the establishment of reference intervals based on stored test results, especially for circumstances where it is challenging to control preanalytical variables, such as in the pediatric population. Our study aimed to establish reference intervals for the pediatric population for ceruloplasmin, transferrin, soluble transferrin receptor (SFTR), and Alfa-1 antitrypsin tests using stored test results.
MATERIALS and METHODS: Tests were performed on a Siemens Bn-Prospect device in Acibadem Labmed laboratories between 2010-2020. The transferrin and SFTR results of patients with iron deficiency and ceruloplasmin and A1AT results of patients with known liver disease were excluded. Outliers were excluded with Tukey's method. Normality was tested with the Kolmogorov-Smirnow test. Box-Cox transformation was performed for data without normal distribution. Subgroups for age and gender were established according to Lahti criteria. Upper and lower limits of reference intervals with 90% confidence interval were calculated using parametric and robust methods according to the C28-A3 guideline for data with or without a normal distribution, respectively.
RESULTS: Reference intervals show a dynamic variation for different age and gender groups. Reference intervals of A1AT and ceruloplasmin tests were significantly lower in patients under one year of age. Transferrin reference intervals were different for male and female genders under one year of age. The upper limit of SFTR reference interval was lower compared to adults.
CONCLUSIONS: Pediatric reference intervals for given tests are different than adults. Age and gender-based reference intervals should be re-established for these tests.
Keywords: Pediatric Reference Interval, Ceruloplasmin, Alpha 1 Antityripsin, Soluble Transferrin Receptor

PP-057
DEVELOPMENT OF A FAST, RELIABLE, ROBUST TANDEM MASS SPECTROMETRIC METHOD FOR DETERMINATION OF QUETIAPINE LEVELS

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OBJECTIVES: Schizophrenia; is a chronic, recurrent, serious mental disorders. Quetiapine is an atypical antipsychotic used orally in the treatment of schizophrenia and bipolar disorders. Quetiapine has both serotonin 5HT2 and dopamine D2 receptor antagonist effects. The recommended serum concentration of quetiapine is 70-170 ng/ml. In schizophrenia, this range can be adjusted as 50-500 ng/ml. Common adverse events are dry mouth, sedation, drowsiness, dizziness and constipation. Less common and serious side effects are low blood pressure, seizures, hyperglycemia, tardive dyskinesia and neuroleptic malignant syndrome. Studies have reported that factors such as CYP3A4 polymorphism, age, gender and concomitant drugs affect the drug blood level. Therefore, monitoring of quetiapine blood level is important. Our aim in our study was to develop an LC-MS / MS method for the measurement of serum quetiapine levels.
MATERIALS and METHODS: After adding 75 µL of internal standard (donepezil), 600 µL of acetonitrile to 200 µL of sample, it was vortexed for 10 seconds, then centrifuged at 13000 rpm for 10 minutes. The supernatants were evaporated with nitrogen gas. The residues were dissolved in 200 µL acetonitrile: water (15: 85;% v: v), then injected into the LC-MS/MS system.
RESULTS: The method was linear for quetiapine in the range 2.5-5000 ng/ml. % CV values for intra-day and between day precision studies were 3.8% and 5.6%, respectively. Total run time was 5 minutes.
CONCLUSIONS: A robust, accurate and reliable measurement method has been developed for quetiapine levels.
Keywords: Adverse Effects, Quetiapine, LC-MS / MS, Therapeutic Range

PP-058
FAST DETECTION OF ENALAPRIL BY TANDEM MASS SPECTROMETRY

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OBJECTIVES: Hypertension and cardiovascular diseases are of the major causes of morbidity in the world. Antihypertensive drugs are a class of drugs that are used for treating hypertension (high blood pressure) and cardiovascular disease. Enalapril has been shown to be effective in the treatment of hypertension and congestive heart failure without causing significant side effects. Our aim was to detect serum enalapril with a liquid chromatography tandem mass spectrometry method.
MATERIALS and METHODS: After adding 100 µL of internal standard (carbamazepine), 750 µL of acetonitrile to 250 µL of sample, it was vortexed for 30 seconds, then centrifuged at 13000 rpm for 10 minutes. The supernatants were taken into clean glass tubes and evaporated with nitrogen gas. Residues in the tube were dissolved with 200 µL acetonitrile: water (15: 85;% v: v) mixture, 100 µL was taken into insert vials and 25 µL was injected into the LC-MS / MS system. A mixture of acetonitrile and water as mobile phase was applied by gradient elution. Phenomenex C18 column was used as column.
RESULTS: The method is linear in the range 1-1000 ng / ml for enalapril. The analysis time is 5 minutes. % CV values for intraday and between day precision studies are 4.2% and 6.8%, respectively.
CONCLUSIONS: The new mass spectrometric method for serum enalapril quantitation might be applicable for routine drug monitoring
Keywords: Drug Monitoring; Enalapril; Tandem Mass.

PP-059
ACCURATE QUANTITATION OF FAVIPIRAVIR: A POTENTIAL OPTION FOR COVID-19 TREATMENT

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OBJECTIVES: Favipiravir is an RNA polymerase inhibitor that has antiviral activity against various RNA viruses. It was first approved in Japan for the treatment of human influenza virus. In addition, favipiravir has been shown to be effective against various viruses such as Ebola, arenavirus, and bunyavirus, and it is thought to be effective against SARS-CoV-2. In our country, favipiravir is administered at a loading dose of 2x1600 mg / day on the first day and 2x600 mg / day for the next 4 days in the treatment of COVID-19. Hyperuricemia and increased transaminase levels are the frequently reported adverse effects. Few measurement methods have been reported for the measurement of favipiravir level, and there is a need for development of new measurement methods. Our aim in this study is to establish a measurement method in LC-MS/MS device for favipiravir.
MATERIALS and METHODS: After adding 100 µL of internal standard (atorvastatin), 600 µL of methanol to 250 µL of sample, it was vortexed for 30 seconds, then centrifuged at 12000 rpm for 5 minutes. 100 µL of the supernatants were injected.
RESULTS: The method was linear in the range 10-10000 ng / ml. Total run time was 5 minutes. CV% values for intraday and between day precision studies were 3.3% and 5.8%, respectively.
CONCLUSIONS: We have developed a fast and economical method for measuring favipiravir levels with high accuracy and reproducibility. The method can be used for determination of drug levels in COVID-19 patients by providing biosecurity measures.
Keywords: COVID-19, Drug Level Monitoring, Favipiravir, LC-MS / MS

PP-060
DEVELOPMENT OF A FAST, RELIABLE AND ACCURATE TANDEM MASS SPECTROMETRIC METHOD FOR DETERMINATION OF BISOPROLOL LEVELS

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OBJECTIVES: Bisoprolol is one of the most widely used beta blockers for heart diseases, especially hypertension, angina pectoris, and congestive heart failure. Bisoprolol is a cardioselective beta-1 adrenergic receptor antagonist. Bisoprolol binds competitively and selectively to the beta-1 adrenergic receptors in the heart and blocks them, resulting in a reduction in cardiac contractility and rate. Common and mild side effects associated with bisoprolol use are nausea, vomiting, abdominal pain, depression, itching, and rash. Rare but more serious side effects are rash, fever, hypersensitivity with eosinophilia, liver enzyme elevations, arrhythmia, bradycardia, feeling of weakness and respiratory problems. Serum bisoprolol concentration should be in the range of 4–77 ng / ml for an effective treatment. Measuring and monitoring the blood level of bisoprolol is necessary and important when side effects are considered. Our aim in our study was to develop an LC-MS / MS method for the measurement of serum bisoprolol levels.
MATERIALS and METHODS: After adding 100 µL of internal standard, 600 µL of acetonitrile to 200 µL of sample, it was vortexed for 10 seconds, then centrifuged at 13000 rpm for 10 minutes. 30 µL of the supernatant was taken and injected into the LC-MS / MS system.
RESULTS: The method was linear for quetiapine in the range 2.5-1000 ng/ml. % CV values for intra-day and between day precision studies were 3.9% and 6.8%, respectively. Total run time was 5 minutes.
CONCLUSIONS: A practical, economical and reliable measurement method has been developed to measure bisoprolol levels.
Keywords: Bisoprolol, LC-MS / MS, Therapeutic Range, Adverse Effects

PP-061
ENZYMATIC ETHANOL TEST KIT VERIFICATION FOR MEASURING SERUM ALCOHOL CONCENTRATION

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OBJECTIVES: We aimed to verify the performance characteristics of the enzymatic ethanol test kit used in alcohol analysis in our laboratory and to compare the analysis method with the reference method. We hope to contribute positively to solving problems caused by alcohol use and analysis by producing more reliable results.
MATERIALS and METHODS: In this study, "Thermo Scientific" brand analysis kit adapted to Beckman AU5800 autoanalyzer was used for enzymatic ethanol analysis. As verification parameters; accuracy, repeatability, linearity, LoD, LoQ, analytical measurement range (reportable range) values were calculated and compared with manufacturer's data. Additionally, the results we obtained with the enzymatic method were compared with the "Headspace Gas Chromatography Analysis Method", which is accepted as a reference method.
RESULTS: Except for the analytical measuring range values (11-562 mg / dL) obtained as a result of the study, all other verification parameters were found to be consistent with the manufacturer's data. According to the Bland-Altman graph evaluation; the difference between the reference and enzymatic methods was interpreted as meaningless, as the mean percentage difference (4.9%) was smaller than the total allowable error percentage (6.25%). According to the Passing-

Bablok linear regression analysis, it was found that the agreement between the methods was very good (y = 0,9662x + 2,0848; r2 = 0.999). Quality control level 1 and 2 samples were studied 4 times a day for 5 days for reproducibility. At the end of the calculations: sr (0.643 mg / dL) <σr (1.35 mg / dL) and sr (0.643 mg / dL) <Vv (1.828 mg / dL). sr (1.059 mg / dL) <σr (1.60 mg / dL) and sr (1.059 mg / dL) <Vv (2.166 mg / dL). Since the calculated sr is smaller than both the manufacturer's standard deviation (σr) and the verification value (Vv); The intraday precision value reported by the manufacturer is verified. CONCLUSIONS:Commercialenzymaticethanolassayperformancecharacteristics have been verified to be consistent with manufacturer's data. In addition, it was found that the tested method complied very well with the reference method.
Keywords: Ethanol, HeadSpace Gas Chromatography, Verification

PP-062
MASS SPECTROMETRIC APPLICATION OF SERUM SERTRALINE

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OBJECTIVES: Depression is one of the most frequent of all major psychiatric illnesses. It is a chronic or recurrent mood disorder that affects economic and social functions of people worldover. Antidepressant medication has been used to treat all forms of major depressive disorders. Sertraline, a potent and latest generation antidepressant drug, selectively inhibits serotonin uptake into presynaptic nerve fibers. Several analytical methods have been developed for the determination of sertraline individually or in combination with other drugs including high-performance liquid chromatography (HPLC). Our aim was to measure serum sertraline levels via liquid chromatography tandem mass spectrometry in this study.
MATERIALS and METHODS: After adding 100 µL of internal standard (valaciclovir), 700 µL of methanol to 250 µL of sample, it was vortexed for 30 seconds, then centrifuged at 12000 rpm for 5 minutes. 20 µL of the supernatant was taken and injected into the LC-MS / MS system.
RESULTS: The method was linear in the range 1.95-2000 ng/ml. Total run time was 5 minutes. CV% values for intraday and between day precision studies were 4.3% and 7.8%, respectively. Bias values for accuracy and matrix effect was calculated 5.1 and 11.3%, respectively.
CONCLUSIONS: A sensitive and rapid high-performance liquid chromatography tandem mass spectrometry (HPLC–MS-MS) method was developed to determine sertraline in human serum. By this method levels may be quantified in terms of therapeutic drug monitoring.
Keywords: Sertraline, Drug, Depression, Tandem Mass

PP-063
SUBSTANCE SCREENING OUTSIDE THE REQUEST PANEL IN CONFIRMATION URINE SAMPLES

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OBJECTIVES: 592 of the 727 samples sent to Hacettepe University Hospitals Forensic Toxicology Laboratory between 01/01/2016 and 31/12/2019 in order to confirm positive substances by AMATEM (Alcohol and Substance Addiction Treatment and Training Center) with immunoassay method were detected as positive. It is known that additional substances and drugs are also abused in people who abuse any substance, which are not included in the routine immunoassay screening panel. In addition to routine screening and subsequent confirmation, urine samples were subjected to a broad screening by GC-MS (gas chromatography-mass spectrometry) in order to investigate the presence of other abused substances.
MATERIALS and METHODS: 98 of the urine samples that came to our laboratory in 2018 with a confirmation request and were stored at -20°C after analysis were randomly selected and re-analyzed using the GC-MS method. Liquid-liquid and SPE extraction was applied to the samples.
RESULTS: Between 01/01/2018 and 31/12/2018, 301 samples were sent to our laboratory for confirmation, 237 of which were found positive. Additional substances such as Pregabalin, Gabapentin, Codeine, Naproxen, Pseudoephedrine, Ephedrine, Ibuprofen, Caffeine, Tributylamine, Theobromine, Cotinine, and JWH-073 were detected in the re-analyzed samples.
CONCLUSIONS: The substances detected in the immunoassay screening method used in AMATEMs are known by those who benefit from the probation facility and these people especially avoid these substances. As shown in our study, people under probation frequently use alternative substances. For this reason, questioning and including such substances in screening beside classical drugs will provide important information in the follow-up of drug addicts.
Keywords: Confirmation, GC-MS, Multiple Substance Abuse, Substance Screening

PP-064
METHANOL EXPOSURE VIA FOOD

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OBJECTIVES: Methanol has toxic effects in the body by metabolizing to formic acid and formaldehyde. Beside acute toxicity chronic methanol exposure may cause renal degenerative changes, non-alcoholic fatty degeneration in the liver, and impairment in biochemistry and hematology parameters. In addition, its effect on the pathogenesis of multiple sclerosis and Alzheimer's disease is also discussed. In this study, the determination of methanol amounts in frequently consumed beverages and foods and its reflection on blood levels were investigated.
MATERIALS and METHODS: The amount of methanol in fruits, juices, jams and marmalades, and tomato products was analyzed using a validated method in headspace gas chromatography.
RESULTS: In apple, pear and 72 h kept apple (under RT) methanol was detected 3.86, 13.61 and 1.95 mg/dL respectively. Methanol was found 5.76 and 2.32 mg/dL in apple juices, 5.17 and 4.96 mg/dL in peach juices, 3.43 and 3.91 mg/dL in apricot juices, 1.79 mg/dL in cherry juice, 1.38 mg/dL in apricot jam, 5.11 mg/dL in cherry jam, 7.72 mg/dL in aged orange jam and 4.4 mg/dL in diabetic cherry jam. It was 22.31 and 16.49 mg/dL in the aged hawthorn and cranberry marmalade respectively, and 26.31 mg/dL, 21.74 mg/dL and 14.1 mg/dL in canned tomatoes, glass and tin tomato paste, respectively. Calculated blood methanol (after consumption of these foods in appropriate amounts) ranges between 0.27 - 18.9 mg/dL.
CONCLUSIONS: Frequent consumption of foods with high methanol content may cause particularly sensitive individuals (e.g. children, elderly, pregnant, chronic patients) to be exposed to chronic toxic effects.
Keywords: Metanol, Food, HS-GC-FID

PP-065
ROLE OF OXIDATIVE AND NITROSATIVE STRESS IN NEPHROTOXICITY

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OBJECTIVES: Nigella sativa, is native to the Mediterranean area and has been used for thousands of years as a health and beauty aid. Nigella sativa oil (NSO) has been reported to possess activities of antioxidant and stimulatory effect on the immune system. The present study investigated the protective effects of NSO on CCl4-induced nitrosative and oxidative stress in rat.
MATERIALS and METHODS: 32 Wistar rats were divided into four groups. Control group (Group I, n=6), Group NSO (Group II, n=6), Group CCl4 (Group III, n=10), Group CCl4+NSO (Group IV, n=10).
Group I and III, 0.4 mL/kg oliveoil (ip) injection was performed daily for 14 days once a day. Group II and IV NSO for 14 days at 0.4 ml/kg (ip) applied. 1 hour after administration 14th day carbon-tetrachloride1 ml/kg (ip) applied at III and IV groups. 24 hours after the end of the experimental period blood samples were taken from the hearts and sacrificed.
Serum and kidney samples were collected.3-Nitrotyrosine(3-NT) levels were measured using HPLC and8-hydroxydeoxyguanosine(8-OHdG) levels were measured ELISA.
RESULTS: The data was assessed by Kruskal-Wallis analysis of variance.Urea and creatinine levels than the control group a statistically significant increase was observed in Group III.About 3-nt levels, there was significant difference between Group I–III and Group II-III p=0.000.8-OHdG levels, there was no significant difference between groups p>0.05.
CONCLUSIONS: CCl4 application has raised creatinine and urea levels produce kidney damage. Effect of CCl4 together with the NS has been shown to prevent kidney damage creation. But levels 3-NT and 8-OHdG weren't showed significant difference. Acut toxicity couldn't identify protectivity against free radical damages. Thus, we can suggest that long-therm application NSO and CCl4 can show out of antioxidant effect.
Keywords: 3-NT, 8-OHdG, Kidney

PP-066
INCREASING THE ACCURACY AND RELIABILITY OF THE NINHYDRIN METHOD OF CYANIDE DETECTION IN HUMAN PLASMA

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OBJECTIVES: The ninhydrin-cyanide complex can be used to measure cyanide human plasma; however, this method requires nitrogen purging as oxygen disrupts the binding between cyanide and ninhydrin. Our aim was to assess whether using an oxygen scavenger could prevent this effect.
MATERIALS and METHODS: The sample buffer was 2% (w/v) sodium carbonate and 1% sodium sulfite (oxygen scavenger). Ninhydrin and potassium cyanide were dissolved in this buffer (5 mg/ml and 1 mg/lt, respectively). The standards were 10, 20, 40, 60 and 80 µg/lt of cyanide. Plasma samples were spiked to obtain 1 mg/lt (toxic threshold) and 2 mg/lt of cyanide and 20µl were added to eppendorf tubes. Then, volume was topped to 800 µl in all samples and 200µl ninhydrin was added. Measurements were done after 5 minutes at 478 nm against blank. The standards were briefly vortexed and measured again (at 10 mins) to check for disruption of color (oxygen interference).
RESULTS: Comparison of 5 and 10 minute standards showed that sodium sulfite prevented oxygen interference, especially at higher concentrations (0.557 to 0.490 at 40 µg/lt; 0.866 to 0.845 at 60 µg/lt and 1.143 to 1.125 at 80 µg/lt). The plasma samples were calculated as 16.55 and 40.14 µg/lt (for 20 and 40 µg/lt original).
CONCLUSIONS: The addition of sodium sulfite as an oxygen scavenger greatly benefitted the accuracy of measurements at high concentrations. Since the linear measurement concentration is in the range of 10 to 80 µg/lt of cyanide, lower dilution (rather than 1:50) may yield better results.
Keywords: Ninhydrin, Cyanide, Sodium Sulfite

PP-067
DEVELOPMENT OF BIOSENSOR SYSTEM FOR FAECAL CALPROTECTIN DETECTION

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OBJECTIVES: Crohn's disease belongs to the inflammatory bowel disease class. One of the most important Crohn's disease markers for the diagnosis and prognosis of the disease is fecal calprotectin. The ability to measure this biomarker is extremely important for the diagnosis and treatment of the disease. Therefore, in our study, we developed an electrochemical biosensor system for rapid diagnosis of fecal calprotectin.
MATERIALS and METHODS: Graphene oxide electrodes (GPHOXE) were used as biosensors in this study. First, GPHOXE was activated and modified with anti-calprotectin and then the measurement was carried out by calprotectin binding. All these procedures were monitored by cyclic voltammetry (CV) and impedance (EIS).
RESULTS: In this study, using the data obtained by EIS, the calprotectin measurement at the microgram level per gram stool was determined in a linear range of 5 to 2000 µg/g and the LOQ was found to be 4.83 µg/g and LOD as 0.34 µg/g. According to the biosensor results compared with ELISA, the regression coefficient was found 0.9642.
CONCLUSIONS: As a result, a biosensor based on electrochemical impedance spectroscopy has been developed for the determination of calprotectin in stool.
Keywords: Calprotectin, İmpedance, Biosensor, Crohn

PP-068
PARKINSON'S DISEASE: DO SUMO GENE VARIANTS PLAY A ROLE IN ETIOPATHOGENESIS?

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OBJECTIVES: The etiopathogenesis of Parkinson's Disease (PD) is not fully known. However, molecular pathology in PD is thought to be in three main axes. The first of these is the ubiquitin / proteasome system, which is responsible for a significant part of protein degradation activity in the cell. The second major axis is mitochondria, which are central to energy metabolism in the cell. The third major axis is oxidative stress. The aim of this study was to investigate the role of ubiquitin-like SUMO genes in the pathogenesis of PD.
MATERIALS and METHODS: In this study, 54 patients and 74 control subjects who were followed up from Istanbul Medical Faculty Movement Disorders Neurology Outpatient Clinic and diagnosed with PD were included. The diagnoses of the cases were made on the basis of clinical PD criteria established by the UK Parkinson's Disease Association Brain Bank. DNA isolation and serum separation, library preparation, bioinformatics analysis, next generation sequencing method and sanger sequencing methods were used.
RESULTS: As a result of genetic analysis, 49 single nucleotide polymorphisms were determined. As a result of the new generation sequencing, 4 SNPs were found in the SUMO4 gene (rs237025 and rs237024) and two in the SUMO3 gene (rs180313 and rs235293) ($p < 0.05$).
CONCLUSIONS: Present study, it is valuable because it is the first genetic analysis made in the SUMO gene in the Turkish population and the SNPs detected for the first time in the literature are shown.
The present work was supported by the Research Fund of Istanbul University. Project No: 34229
Keywords: Parkinson Disease, SUMO, Sequencing

PP-069
EVALUATION OF TOTAL- AND PHOSPHO-TAU PROTEIN LEVELS IN CHILDREN WITH ATTENTION DEFICIT AND HYPERACTIVITY DISORDER

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OBJECTIVES: Attention deficit and hyperactivity disorder (ADHD) is a neurodevelopmental disorder. Recent studies suggest that biochemical factors play a role in the development of neurodegenerative and psychiatric disorders. Tau, one of the microtubule associated proteins, is known to reflect the rate of neuronal degeneration. We evaluated changes in total Tau (T-Tau) and phospho-Tau (P-Tau) levels in ADHD.
MATERIALS and METHODS: The study included 26 male children with ADHD and 26 healthy male children. T-Tau and P-Tau protein levels in serum samples were determined by commercial ELISA kits.
RESULTS: We observed a statistically significant difference in P-Tau levels in ADHD compared to controls ($p = 0.046$). However, there was no significant difference in T-Tau levels between patient and control groups ($p = 0.092$). In addition, there was a statistically significant negative correlation between P-Tau and T-Tau proteins in the control group ($p = 0.026$, $r = -0.435$). However, this correlation was not observed in the patient group ($p = 0.584$).
CONCLUSIONS: P-Tau, an excessively phosphorylated form of Tau, is known to be able to disrupt preformed microtubules. Due to its insoluble nature, P-Tau exhibits unhealthy behaviors and is responsible for the pathogenesis of many neurodegenerative diseases. Therefore, our results clearly show that neurodegeneration exists in ADHD, although the mechanism is unknown. Serum p-Tau may provide a benefit in differentiating between ADHD and healthy individuals and may serve as a predictive or prognostic protein marker for ADHD patients.
Keywords: Attention Deficit And Hyperactivity Disorder, P-Tau, Tau

PP-070
COMPARISON OF IMMUNOASSAY AND LIQUID CHROMATOGRAPHY- TANDEM MASS SPECTROMETRY METHODS FOR MEASURING SALIVARY CORTISOL

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OBJECTIVES: To develop a method for salivary cortisol measurement by LC-MS /MS and to examine its correlation by comparing it with ELISA method
MATERIALS and METHODS: Method development studies were carried out according to CLSI 62-A, calibration graph, linearity, accuracy, LoD and LoQ, intra-day and inter-day repeatability, recovery, transport, matrix effect parameters with LC-MS/MS (Shimadzu LC-20AD-AB Sciex 4000QTRAP). For testing the robustness of the method and method comparison studies; Salivary cortisol samples were collected at 08:00, 16:00 and 24:00 hours from people who came to whose hypercortisolemia status should be ruled out (Ethics committee: 29.03.2018 and 2018 / 08-34). Cortisol levels in the samples measured by LC-MS / MS and ELISA (Biovendor)

RESULTS: The R² value of the calibration graph (0.01-10 µg / L) was 0.9997, and the R² value of the linearity graph (0.5-200 µg / L) was 0.9999. Accuracy were 98.8 %, 102.2 and 106.7% after analyzing 0.1, 5 and 100 µg/L standards, repeatability within and between days calculated as 13.76, 8.27, 6.75 and 16.46, 2.32, 2.38%. LOD value was 0.01 µg/L and LOQ value was 0.1 µg/L. salivary cortisol samples taken at three different hours from patients with Cushing Syndrome (n = 20), Subclinical Cushing Syndrome (n = 52) and Non-functional adenoma (n = 49), significant positive correlations were found between both methods (r = 0.278 0.467, 0.590 p = 0.037, 0.000, 0.000).
CONCLUSIONS: it observed that the LC-MS / MS method was very sensitive and reliable for salivary cortisol measurement, and the findings were consistent with the results of the ELISA method
Keywords: Salivary Cortisol, LC-MS / MS, ELISA, Cushing Syndrome, Subclinical Cushing Syndrome

PP-071
EVALUATION OF THE SERUM BIOCHEMISTRY PARAMETERS AS A POTENTIAL BIOMARKERS FOR PROGNOSIS OF THE ALS

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OBJECTIVES: ALS is the most common fatal neurological disorder and incidence rate is 2 in 100,000. Clinical diagnosis of ALS is usually difficult and takes time since there are no definitive prognostic biomarkers existing, also drugs used to treat ALS are only early effective at the eraly stages. Therefore we aimed to evaluate prognostic biomarkers in the serum biochemistry in this study.
MATERIALS and METHODS: Male SOD1G93A mutated Sprague Dawley albino rats were followed every week by weighing and controlling their movements indicating disease progression. We divided our animals into 5 groups as 0 (40-45 days old), A (70-75 days old), B (90-95 days old), C (110-115 days old) and D (130-135 days old). Group C refers to early onset and group D refers late onset. We have started to observe disease symptoms in groups C and therefore we have indicated group C as early onset and D as late onset. Serum biochemical were investigated via IDEXX Vettest 8008 for each group.
RESULTS: Our data showed that weights of animals in group C and D significantly decreased upon disease progression compared to the other groups and their control groups respectively. Our data have proven weight loose in both early onset and late onset groups. ALKP, ALT, cholesterol, creatinine and phos levels ($p < 0.001$) significantly increased in the C and D groups. Albumin, TBIL, TP and globulin ($p < 0.05$) significantly increased in the
CONCLUSIONS: Consequently, ALS is hypermetabolic disorder and causes impairments in the protein, lipid and carbohydrate metabolisms. Serum biochemical parameters indicating nutrient metabolism and muscle destruction can be used for the rapid prognosis and evaluation of the pre-clinical stages of ALS.
Keywords: ALS, Serum Biochemistry Parameters, Hemogram, SOD1

PP-072
REMOVAL OF FEEDBACK REGULATION OF 3-DEOXY-D-ARABINO-HEPTULOSONATE-7-PHOSPHATE-SYNTHASE OF C.GLUTAMICUM

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OBJECTIVES: Shikimate pathway, the pathway required for the synthesis of aromatic amino acids for microbial survival is very tightly controlled by feedback inhibition. The overproduction of aromatiXc amino acids requires the removal of this regulation. 3-deoxy-D-arabino-heptulosonate-7-phosphate-synthase (DAHPS) is the first enzyme of this pathway that is under feedback regulation. The three type-1 DAHPS enzymes in E. coli undergo feedback inhibition by phenylalanine, tyrosine, and tryptophan, respectively. In Corynebacterium glutamicum, there are two DAHPS enzymes: type-1 and type-2. Although the inhibition mechanism of the type-1 enzyme in C. glutamicum has been elucidated, it has been reported that this enzyme is not necessary for the cells. On the other hand, although phenylalanine and tyrosine were shown to inhibit the type-2 DAHPS enzyme, its mechanism is not clear. In this work, the data obtained from MD simulations of phenylalanine-regulated E.coli DAHPS will be used to predict residues to remove to remove feedback inhibition of type-2 DAHPS in C.glutamicum, is aimed.
MATERIALS and METHODS: In this study, first, the amino acid sequences of E. coli and C. glutamicum DAHPS were compared with double and multiple sequence alignment tools. Using the information of feedback-regulation-resistant variants of E.coli phenylalanine-regulated DAHPS enzyme, molecular dynamics simulations of these variants and wild-type of the enzyme were performed after 50,000 minimization steps performed under NPT conditions at 1 bar pressure and 310 K temperature bu using the GROMACS program and CHARMM27 using the force-field function for 250 ns With the completion of the simulations, Root Mean Square Deviation (RMSD) and Root Mean Square Fluctuation (RMSF), Principal Component Analysis (PCA), Dynamic Cross Correlation Matrices (DCCM), RMSIP and further analysis will be performed.
RESULTS: It was observed that the feedback inibition of DAHPS enzyme found in E.coli and encoded by AroG was removed by S180F, P150L and D146N mutations. For this reason, MD simulations and analyzes were performed on the structure with inhibitor and PDB code of 1KFL. Analysis results shows that S180F, P150L and D146N variants of DAHPS comes to equilibrium after 70ns and they shows significant difference from WT-DAHPS. The S180F variant of DAHPS enzyme is the most distinctive variant according to the RMSIP analysis. After further analyses, the prediction of the residue for C.glutamicum will be proceeded.
CONCLUSIONS: Suggestions for mutations on the inhibitor binding site to make the C. glutamicum type-2 enzyme insensitive to feedback regulation will be proposed.
Keywords: Corynebacterium glutamicum, Escherichia coli, DAHPS, MD

PP-073
TEST REQUESTS COMPARISON OF HOSPITAL CLINICS AND FAMILY MEDICINE ON UNNECESSARY TEST REQUESTS; FINANCIAL BURDEN OF UNNECESSARY TEST REQUEST FOR TUMOUR MARKERS

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OBJECTIVES: Tumor markers are used in the diagnosis of cancer, determining the prognosis, processing the treatment and monitoring the response. Although these tests are not screening tests, they are used as screening tests and cause both unnecessary burden and incorrect test interpretations. In our study, it was aimed to evaluate the results of patients whose tumor markers were requested from various clinics, and to investigate the financial burden of unnecessary testing.
MATERIALS and METHODS: A total of 1078 patients who have requested the tumor marker panel (CEA, CA-19-9, CA125, and CA15-3) from our hospital's clinics (n=811) and family physicians (n=267) between 01.03.2020 and 01.06.2020 were retrospectively screened. Tumor markers in the patient groups were evaluated according to the diagnoses, gender, the clinics requested. the number of unnecessary test requests was determined and financial evaluation was made based on the current HPC (Health Practice Communiqué) prices for the tests.
RESULTS: When the results were examined, the rate of unnecessary test requests was found to be 97.7% for family medicine, and 7.1% of the unnecessary test requests from our hospital's clinics. When the current HPC notification prices are taken as basis, the financial burden arising from the request for unnecessary testing was calculated as 12 086 TL for 3-month period.
CONCLUSIONS: In our results, it was determined that the tumor marker panel requested from family medicine was used as a routine. We believe that this unnecessary test request burden will be reduced by creating restrictions and various algorithms according to the diagnosis of the disease and the clinic.
Keywords: Tumor Markers, Unncessary Test Request, Financial Burden

PP-074
DETERMINING THE OPTIMUM BUFFER ASSEMBLY FOR A NEW UREA BIOSENSOR

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OBJECTIVES: Urea is a harmful substance that is formed as a result of the use and breakdown of protein foods. This substance is excreted in the form of urine by draining by the kidneys. If the kidneys cannot remove this substance sufficiently, they begin to accumulate in the blood. Its elevation has a toxic effect on the body, and when it is too high it is impossible to live. Because of these reasons, urea determination is of great medical importance.
MATERIALS and METHODS: In this study, we aimed to design a new amperometric biosensor for urea determination. Determination of urea, urease enzyme was immobilized on the graphite electrode by using BSA/gelatin and crosslinking by glutaraldehyde. Measurements were carry out at 0.2 V. Optimization studies of the designed biosensor were carried out first for the bioactive layer components and optimum buffer concentration.
RESULTS: From the bioactive layer optimization studies; gelatin, bovine serum albumin amount and optimal percentage glutaraldehyde were determined as 0.45 gr, 0.030 gr and %2.5 for the Graphite/BSA- Gelatin/Urease/Glutaraldehyde modified biosensor.
CONCLUSIONS: The optimum acetate buffer concentration was found to be 100 mM for the designed urea biosensor.
Keywords: Biosensor, Urea, Urease

PP-075
DO CRITICAL VALUES HAVE TO BE RETESTED?

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OBJECTIVES: Repetition of critical values increases test costs with time loss, TAT prolongation, critical value notification delay and reagent loss.In our study, we aimed to evaluate whether repeat processing is required at critical values of glucose (Glu), total bilirubin, creatinine (Crea), magnesium (Mg), calcium (Ca), sodium Na), potassium (K), chloride (Cl), urea, uric acid (UA), AST, ALT and amylase (Amy) tests.
MATERIALS and METHODS: 1161 patients with critical value who were admitted to the emergency department between 1 July and 31 December 2019 were included in the study.Data were taken from the laboratory information management system (LBYS). The difference between the two test runs for each parameter was calculated as absolute and percentage bias.The calculated % bias was compared according to the allowable total error (TEa) limits specified in the Medical Laboratory Regulation by the Ministry of Health, General Directorate of Health Services, Medical Laboratory Department. Values exceeding TEa limits were considered to be significantly different.
RESULTS: Only 41 (3.5%) of the 1161 tests repeated in this study were found to be significantly different from the first test.The difference between repeat test results for all parameters was <10%.The Ministry of Health TEa limits were exceeded in glucose, urea, ALT and AST tests.The repetitions made did not eliminate the critical value feature of these tests.
CONCLUSIONS: Our findings suggest that routine retesting of critical values with advanced laboratory equipment has no effect on improving the accuracy of the results of these tests. By reducing repetition, we can report the result quickly, and also reduce additional testing costs.
Keywords: Critical Value, Emergency Tests, Laboratory Management

PP-076
THE EFFECT OF COVID-19 PANDEMIC ON LABORATORY TEST NUMBERS: A PUBLIC HEALTH LABORATORY EXPERIENCE

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OBJECTIVES: Antalya Public Health Laboratory meets the laboratory needs of 774 family physicians working in 253 family health centers in Antalya. Lifestyle changes and restrictions experienced during the COVID-19 Pandemic have affected medical laboratories as well as in all areas of life. In this study, we aimed to evaluate the effects of COVID-19 Pandemic on our laboratory test numbers and distribution.
MATERIALS and METHODS: The statistics of laboratory test numbers between January-August 2019 and January-August 2020 were taken from LIOS Software, a Laboratory Information Management System software. Test parameters were evaluated in four main groups as Biochemistry, Hormone, Hematological and Serological analyzes. The changes in the number of tests are expressed as percentages.
RESULTS: In January and February 2020 the total number of tests increased by 24,26% and 3,66% respectively. With the first case in our country in March 2020 and the start of restrictions, the total number of tests decreased by 30,69%. In April 2020, the highest decrease was determined with 82,51%. Again in May 2020, a 66,02% decrease continued; In June 2020, when restrictions were lifted gradually, only 5,45% decrease was noticed. In July 2020 3,34%decrease observed but in August 13,32% increased. The least affected test group was serological tests.
CONCLUSIONS: The rapid changes during the pandemic affected our test numbers dynamically and sharp declines occurred. With the start of the normalization process, our test numbers increased. In order to meet this increase, it is necessary to closely monitor administrative parameters such as personnel, consumables and kit procurement.
Keywords: Covid-19 Pandemic, Test Numbers, Clinical Laboratory

PP-077
THE RELATIONSHIP BETWEEN SERUM ALBUMIN AND MAGNESIUM LEVELS IN ANKARA UNIVERSITY CEBECI HOSPITAL PATIENTS

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OBJECTIVES: It has been reported that the deficiency of magnesium may be associated with increased morbidity and mortality in ICU patients. Hypoalbuminemia is frequently observed in intensive care unit and postoperative patients. In this study, the relationship between hypomagnesemia and hypoalbuminemia, which may be associated with increased mortality and morbidity, was investigated.
MATERIALS and METHODS: Data was obtained from Ankara University Faculty of Medicine Cebeci Biochemistry Laboratory automation system between January - March, 2019. A total of 32997 patients, including 16405 men and 16405 women were analyzed.
RESULTS: Among a total of 32977 patient results, the number of those under the age of 18 is 10683, the number of those between the ages of 18-65 is 14797, and the number of those aged 65 and over is 7497. The number of hypoalbuminemic patients was 5934, normoalbuminemic was 26876, and hyperalbuminemic was 167. The number of hypomagnesemic patients is 4355, the number of those with normomagnesemic is 28202, and the number of hypermagnesemic is 420.
CONCLUSIONS: A statistically significant relationship was not found between serum albumin and magnesium levels. Serum total protein and globulin levels were also found to be unrelated. We see the limitation of our study as the fact that the free form of magnesium in serum was not measured. There are studies stating that there is a linear relationship between serum albumin and magnesium levels, as well as studies indicating that there is no significant relationship. New studies on this subject will contribute to a better understanding of magnesium homeostasis in the body.
Keywords: Albumin, Magnesium, Total Protein, Globulin

PP-078
INVESTIGATION OF THE EFFECT OF ANKARA CITY HOSPITAL PNEUMATIC TUBE TRANSPORT SYSTEM ON ROUTINE BIOCHEMISTRY, HEMATOLOGY AND COAGULATION TESTS

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OBJECTIVES: Large and modern hospitals use pneumatic tube systems (PTS) to transport many samples within the hospital. However, there are different opinions about preservation of sample integrity during PTS transport. The aim of our study is to examine the effects of the PTS on the biochemistry, hemogram and coagulation tests.
MATERIALS and METHODS: Blood was collected from 50 volunteer participants into 3 biochemistry, 2 coagulation and 2 hemogram tubes. One of the tubes was transferred with PTS and the other with the porter, third biochemistry tube was transported with PTS after completed coagulation. Analyzed tests in these paired samples were compared with Student's paired t test, correlation and Bland-Altman analysis. The clinical significance of statistically significant differences was evaluated by comparing with the total allowable error.
RESULTS: No significant differences were found in lipemia, hemolysis and icteric serum indices, which are indicators of sample integrity ($p > 0.05$). In LDH and AST, there were a slight increase in PTS transportated ($p = 0.008$ and $p = 0.01$) and PTS transportated after coagulation samples ($p < 0.001$ and $p = 0.03$) compared to porter transportated. Apart from the LDH and AST, statistically significant differences were found in some biochemistry tests between different groups. However, all these differences, including LDH and AST, were not found clinically significant. An analyte with a clinically significant difference was not detected in the hemogram and coagulation tests also.
CONCLUSIONS: PTS used in our hospital can be used safely for these frequently requested analytes. Each hospital should definitely validate its own transport system.
Keywords: Pneumatic Tube System; Sample Integrity; Sample Transportation; Validation Study

PP-079
ASSESSMENT COLORIMETRIC TEST TO DETERMINE POLLEN VIABILITY AND POLLEN NUCLEI IN *PHASEOLUS VULGARIS* L

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OBJECTIVES: The colorimetric test is of higher importance than others because the effects of certain environmental variables, including temperature, moisture, and light, are minimized. The colorimetric test is fast and straightforward. In the anther culture study, the success of haploidization is influenced by the developmental stages of microspore cells and pollen viability. The most suitable stage for culture is the uninucleated stage of microspore cells. In this study, a colorimetric test was used to determine the microspore developmental stage and pollen viability. This study aimed to determine which dyes such as 4′,6-diamidino-2-phenylindole dihydrochloride (DAPI), and acetocarmine used in the colorimetric test are useful in detecting pollen viability and nuclei of pollens removed from the anther of bean genotypes.

MATERIALS and METHODS: Flower buds of 10 bean genotypes of different sizes were collected to determine the stage in which mononuclear microspore cells are cultured and the appropriate flower bud development stage where the anthers will be isolated. The buds were grouped according to their sizes, and the anthers were isolated from the buds of different sizes. Pollen grains have been pinched with a proper forcep. Two slides were prepared from each sample. One of the slides prepared with the same sample was stained with acetocarmine (a red-fluorescent stain), while the other was stained with DAPI (a blue-fluorescent stain) for 7 min. Under a fluorescence microscope, slides were evaluated.
RESULTS: Pollen dyed with red color due to acetocarmine staining and blue due to DAPI staining was accepted as alive. Mononuclear stages were detected in pollen grains in both acetocarmine and DAPI staining. In the mononuclear phase, it has been observed that the nuclei of microspore cells shift from the center of the cell towards the polar parts of the cell. It has been determined that the microspore cells of the anthers taken from the buds with a size of approximately 8-9 mm are in the mononuclear stage.
CONCLUSIONS: Although both DAPI and acetocarmine dyes were useful in staining bean pollens, pollen nuclei were better observed with the DAPI staining.
Acknowledgment: The study described here was carried out within the Project (No. 119O003) funded by the Scientific and Technological Research Council of Turkey (TUBITAK).
Keywords: Acetocarmine, DAPI, {Phaseolus vulgaris} L., pollen

PP-080
COPEPTIN LEVELS IN PATIENTS WITH MIGRAINE

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OBJECTIVES: Copeptin is secreted from the posterior pituitary simultaneously with vasopressin and reflects the level of vasopressin in the circulation. Copeptin is more stable in plasma and serum than vasopressin. Copeptin is a hypothalamic stress hormone that reflects the individual stress level more finely than circulating cortisone. In this study, our aim is to investigate the copeptin levels of patients with migraine.
MATERIALS and METHODS: It is a prospective and controlled study conducted at Haseki Training and Research Hospital between April 2019 and November 2019. 80 patients diagnosed with migraine;was included in the study group. Eighty healthy volunteers of similar age and sex made up the control group. For copeptin levels; Blood samples taken at patient admission and at the 4th hour of follow-up were stored at -80 degrees after centrifugation. Blood samples were studied with the Elabscience Human CPP (Copeptin) brand kit, using the Elisa method. Results were analyzed using SPSS 16.0. $p < 0.05$ was considered significant.
RESULTS: Mean copeptin levels were 2113 pg / ml in the patient group, and 1601 pg / ml in the control group, respectively. There was a highly significant difference between the mean copeptin levels of the patient and control groups ($p = 0.001$).
CONCLUSIONS: Although the diagnostic efficacy of serum copeptin levels for migraine is unsatisfactory, it may be helpful in the treatment of migraine patients.. Copeptin could be a promising new blood biomarker for risk stratification in patients with non-traumatic headache.
Keywords: Copeptin, Migraine

PP-082
ONLINE TRAINING COURSE OF TBD ACADEMY: DISTANCE EDUCATION FROM COURSE DESIGN TO ASSESSMENT & EVALUATION

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OBJECTIVES: Face-to-face education was suspended between April and June 2020 due to the COVID-19 pandemic, and the universities moved on to an 'urgent' distance education(DE). After observing difficulties and needs of this transition, we as the TBD Academy Education Team(TBDA-ET) designed an online training for the educators to help them cope with the knowledge and technological skill requirements of the 'planned' DE academic period (2020-2021). The aim of this training was to improve the knowledge and skills of undergraduate and graduate level educators regarding online course/educational activity preparation, online laboratory applications(OL) and online assessment/evaluation (A/E).
MATERIALS and METHODS: The aim and the learning objectives of the training were determined considering the target audience and the training was designed as 6 modules. Information regarding participants' educational experience, technological skill level, expectations and needs were collected via a pre-course survey, and after the content of the course was finalized, an agreement containing all the relevant information about the educational approach and technological infrastructure of the training as well as the ethical rules was signed by the participants. The training, consisting of effective DE opportunities such as short presentations-panels, interactive training methods, group work and one-on-one technological help sessions, was completed in 15-hours spread over a weekend in September 2020 and carried out entirely in an online environment (Moodle Learning Management System and Zoom Videoconferencing Platform).
RESULTS: The age distribution of the participant($n = 22$) was 30-54 years and half of the participants were women. Pre-training expectations mostly focused on interactive training tools, OL and A/E in DE. 40% of the participants had 1-5 years of experience as educators and 71% had post-pandemic DE experience. An increase was observed in pre-test and post-test average scores (11.57(8-15.33) and 16.24 (11.63-19.67)/20 points, respectively), which was designed in accordance with the course content. Feedback received at the end of the training and after 2 months both confirmed that the agreement, e-mail&whatsapp announcements (using multiple communication tools) as well as the the content of the training were appropriate. Feedbacks revealed that the use of Kahoot, Menti, Edpuzzle, Padlet and Jamboard applications were helpful and that these can be used in their lectures. The participants stated that the content and execution of the traning were very efficient and they would recommend the training to other educators.
CONCLUSIONS: This training was the first to aim improvement of online educator skills in our field (biochemistry and clinical biochemistry). It was also the only activity with such aim considering all the other medical disciplines and societies. Similar activities should be designed by societies and educational institutions for the effective and efficient implementation of DE at undergraduate and graduate levels. TBDA-ET is planning to repeat this training in following months to further its contribution to the higher education
Keywords: Distance Learning, Course Design, Educational Technologies, Electronic Learning