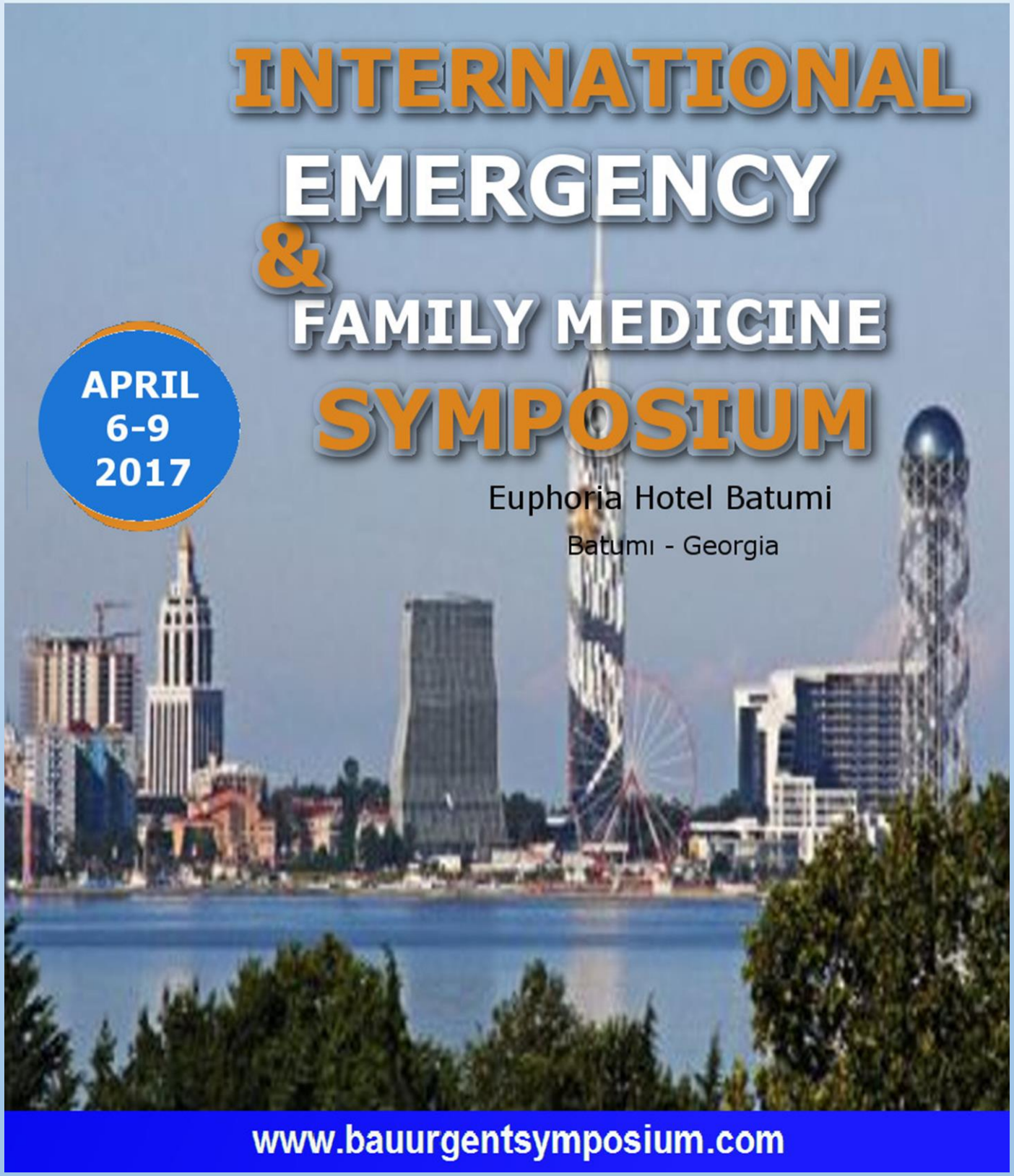
BAU INTERNATIONAL UNIVERSITY BATUMI

EPAT Emergency Physicians Association of Turkey

TRAHED TRABZON AİLE HEKİMLERİ DERNEĞİ

Aile Hekimliği Anabilim Dalı

AHEF AİLE HEKİMLERİ DERNEKLERİ FEDERASYONU 2008



INTERNATIONAL EMERGENCY & FAMILY MEDICINE SYMPOSIUM

APRIL 6-9 2017

Euphoria Hotel Batumi

Batumı - Georgia

www.bauurgentsymposium.com

ABSTRACT BOOK

SCIENTIFIC PROGRAM

06 April 2017 Thursday	
14.00 - 16.00	Check-in at the Hotel
16.00 – 20.00	**Preanalytical Errors, Routin Biochemistry and Hemogram Testing** **Asst. Prof. Oğuzhan ÖZCAN, MD** Mustafa Kemal University Medicine School Medical Biochemistry Department (Will held in BAU International University of Batumi Medical School Room)
20.00 - 24.00	**Opening Dinner**

07 April 2017 Friday – MAIN HALL		
Time	**Moderator**	**Subject and Speakers**
09.00 - 10.30		**Opening and Opening Speakers** **Prof. İsmet DİNDAR** Rector of BAU International University BATUMI **Hakan UZUN, MD** Head of Trabzon Family Physician Association **Prof. Başar CANDER, MD** Head of Emergency Medicine Experts Association **Prof. Leila AKHVLEDİANİ, PhD** Dean of Medicine Faculty of BAU International University BATUMI **Yasin TEMİZKAN** General Consul of T.R in Batumi **Avtandil MIKATSADZE** General Consul of Georgia in Trabzon **Nariman SAFARLI, MD** Chairman of Azerbaijan Medical Association **Prof. Gia LOBZHANIDZE, MD., PhD., ScD** Chairman of Georgian Medical Association **Nugzar SURMANIDZE, MD** Georgian Republic Ajaria Autonomous Republic Head of Social Security Institution **Zaal MİKELADZE, MD** Minister of Health and social care of Autonomous Republic of Adjara of Georgia **Zurab PATARADZE** President of Georgian Republic Ajaria Autonomous Republic **David GABAIDZE** Georgian Republic Ajaria Autonomous Republic Chairman of Parliament

10.30 - 11.00	**Coffee Break**	
11.00 - 12.30	Assoc. Prof. Neriman TSINTSADZE, MD Hakan UZUN, MD	**Turkish-Georgian Family Medicine Symposium** **Ketevan JUGHELİ, MD** Family Physician Trainer, Coordinator at the Training Center Kutaisi D. Nazarishvili Center for Family Practice and Training of Family Physicians **Zaza KHACHIPERADZE, MD., PhD.** General Secretary of Georgian Medical Association **Lika TEVZADZE, MD** Health And Social Care Of Autonomous Republic Of Adjara Of Georgia **Assoc. Prof. Turan SET, MD** KTÜ Medicine School Family Medicine Department Chairman **Gürsel ÖZER, MD** Head of AHEF
12.30 - 13.30	**Lunch**	
13.30 – 15.00	Assoc. Prof. Sophıko TSKVITINIDZE, PhD Specialist Yeliz YILMAZ, MD	**Cardiovascular Risk Assessment in Family Medicine** **Prof. İsmet DİNDAR** Rector of BAU International University BATUMI and Cardiology Department Chairman **Specialist Marita GORGOSHADZE, MD** Cardiologist, Batumi International University Hospital **How can a Family Physician Prevent Stroke?** **Assoc. Prof. Şahin BOZOK, MD** Batumi International University Hospital Cardiovascular Surgery Department Chairman **Specialist Mahir BALAKİSHIEV, MD** Batumi International University Hospital Cardiovascular Surgery Specialist **Cancer Scanning Tests in Georgia** **Specialist Temur GOGITIDZE, MD** Batumi International University Hospital Oncosurgery Specialist
15.00 - 15.15	**Coffee Break**	
15.15 – 16.45	Tsıra KAPANAZDE, PhD Burhan YILMAZ, MD	**Back Ache? Hernia? How to Distinguish?** **Asst. Prof. Baran YILMAZ, MD** Batumi International University Hospital Brain Surgery Specialist **Teona VARSHALOMİDZE, MD** Assistant to Rector of BAU International University Batumi

		How to Perform a Definitive Diagnosis in a Patient Having Stomach Ache? **Assoc. Prof. Can KEÇE, MD** BAU Bahçeşehir University Medicine School Gastroenterology Surgery Specialist **Khatuna JOKILADZE, MD** Batumi International University Hospital General Surgery Department
16.45 – 17.00	**Break**	
17.00 – 17.30	Marına NAGERVADZE, PhD Emre ÖZEL, MD	**Complimentary Feeding with Infants** **Asst. Prof. Elif ATEŞ, MD** KTU Medicine School Family Medicine Department
17.30 – 18.30	Natasha DOROFEEVA, MD Muhsin Ertuğrul ŞEN, MD	**Rational Drug Use** **Assoc. Prof. Turan SET, MD** KTÜ Medicine School Family Medicine Department
18.30 – 19.00	Ali YILMAZ, MD	**Periodical Health Examinations** **Asst. Prof. Cüneyt ARDIÇ, MD** Rize RTE University Head of Family Medicine Department
20.00 - 24.00	**Dinner**	

07 April 2017 Friday – SECOND HALL		
Time	**Moderator**	**Subject and Speakers**
12.30 - 13.30	**Lunch**	
13.30 - 15.00	Prof. Başar CANDER, MD Prof. Zeynep ÇAKIR, MD	**Resuscitation Course** **Basic Life Support** **Prof. Polat DURUKAN, MD** Erciyes University Medicine School Head of Emergency Medicine Department **Advanced Life Support** **Prof. Başar CANDER, MD** Necmettin Erbakan University Meram Medicine School Head of Emergency Medicine Department
15.00 - 15.15	**Coffee Break**	
15.15 – 16.45	Prof. Zeynep ÇAKIR, MD Prof. Mehmet GÜL, MD	**Resuscitation Course** **Differences in Pediatric Life Support** **Assoc. Prof. Atıf BAYRAMOĞLU, MD** Atatürk University Medicine School Head of Emergency Medicine Department

		Cardiovascular Pharmacology **Specialist Aykut UYANIK, MD** Pamukkale University Medicine School Emergency Medicine Department
16.45 – 17.00	**Break**	
17.00 – 17.30	Murat Fazıl SOYAL, MD	**Secrets Of Esthetics And Beauty** **Nihal ADAĞ** Specialist and Make-Up Artist
17.30 – 19.00	Specialist Abdullah Osman KOÇAK, MD Murat Fazıl SOYAL, MD	**Oral Presentations**
20.00 - 24.00	**Dinner**	

08 April 2017 Saturday – MAIN HALL		
Time	**Moderator**	**Subject and Speakers**
09.00 - 10.30	Ali YILMAZ, MD Nino PHILIA, MD	**Turkish-Georgian Emergency Medicine Services Symposium** **Prof. Başar CANDER, MD** Necmettin Erbakan University Meram Medicine School Head of Emergency Medicine Department **Zaza KHACHIPERADZE, MD., PhD.** General Secretary of Georgian Physicians Association **Badri PAKSADZE, MD** Head of Batumi 112 Nerve Centre
10.30 – 11.00	**Coffee Break**	
11.00 - 12.30	Assoc. Prof. Atıf BAYRAMOĞLU, MD Giorgi KONTSELIDZE, MD	**RESPIRATORY SYSTEM SESSION** **COPD** **Asst. Prof. Gökhan ERSUNAN, MD** Recep Tayyip Erdoğan University Medicine School Head of Emergency Medicine Department **Pulmonary Emboli** **Prof. Mehmet GÜL, MD** Necmettin Erbakan University Meram Medicine School Head of Emergency Medicine Department **Blood Gas Evaluation** **Assoc. Prof. Atıf BAYRAMOĞLU, MD** Atatürk University Medicine School Head of Emergency Medicine Department

12.30 - 13.30	**Lunch**	
13.30 – 15.00	Prof. Polat DURUKAN, MD Assoc. Prof. Hakan OĞUZTÜRK, MD Giorgi MIKELADZE, MD	**TRAUMA SESSION** **General Approach to Trauma Patients** **Prof. Behçet AL, MD** Gaziantep University Medicine School Head of Emergency Medicine Department **Central Nervous System Traumas** **Specialist Burak KATİPOĞLU, MD** Ankara Teaching and Research Hospital Emergency Medicine Clinic **Thorax and Abdominal Traumas** **Prof. Gürkan ERSOY, MD** Dokuz Eylül University Medicine School Head of Emergency Medicine Department
15.00 – 15.30	**Coffee Break**	
15.30 – 17.00	Prof. Başar CANDER, MD Assoc. Prof. Yunsur ÇEVİK, MD Miranda BASILADZE, MD	**INTOXICATION SESSION** **General Approach to Intoxicating Patient** **Assoc. Prof. Hakan OĞUZTÜRK, MD** İnönü University Medicine School Head of Emergency Medicine Department **Decontamination in Intoxicating Patients** **Specialist Abdullah Osman KOÇAK, MD** Atatürk University Medicine School Head of Emergency Medicine Department **Specific Treatment Approaches in Intoxication Cases** **Asst. Prof. Gökhan ERSUNAN, MD** Recep Tayyip Erdoğan Medicine School Head of Emergency Medicine Department
17.00 – 17.15	**Break**	
17.15-19.00	Prof. Behçet AL, MD Prof. Mehmet GÜL, MD Merab MIKELADZE, MD	**CARDIOVASCULAR SYSTEM SESSION** **Acute Coroner Syndrome** **Assoc. Prof. Yunsur ÇEVİK, MD** R.T. Ministry of Health Keçiören Teaching and Research Hospital Emergency Medicine Clinic **Approach to Bradicardia-Tachycardia Patient** **Prof. Bülent ERDUR, MD** Pamukkale Medicine School Emergency Medicine Department

		Stroke **Specialist Mehmet KOŞARGELİR, MD** Ministry of Health Haydarpaşa Numune Teaching and Research Hospital Emergency Medicine Clinic **Hypertension Management in Emergency Medicine** **Prof. Sedat YANTURALI, MD** Dokuz Eylül University Medicine School Head of Emergency Medicine Department
20.00-24.00	**Gala Dinner**	

09 April 2017 Sunday	
10.00 - 12.00	**Legal Issues and Solutions in Emergency Medicine and Family Medicine** **Hakan UZUN, MD** Head of Trabzon Family Physician Association

Date of the Symposium

06-09 April 2017

Place of the Symposium

Georgia / Batum

Symposium Language

The language of the congress is English.

Simultaneous translation will be available.

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Emergency Physicians Association of Turkey

Trabzon Family Physician Association

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POSTER ABSTRACTS

Poster Presentation 01

The Appraisal Of Willis Ekbom Disease in Morbid Obese Patients Who Underwent Laparoscopic Sleeve Gastrectomy

Burcu YORMAZ, İlhan ECE, Serdar YORMAZ
Selcuk University, Department of Surgery, Konya, Turkey

Objective: Bariatric surgery is so effective procedure for morbid obese patients to become a healthy situation. The aim of this study is to assess the presence and severity grade of Willis Ekbom Disease (WED) in morbid obese patients who underwent bariatric surgery for weight loss.

Methods: Consecutive morbid obese patients scheduled for bariatric surgery for resolving the morbid obesity between the dates of January 2014 to July 2015 were enrolled in this retrospective study. Participants completed confirmed questionnaires to evaluate the presence and severity of WED (Cambridge-Hopkins Questionnaire 13 and International Restless Legs Syndrome Study Group Rating Scale (IRLS).

Results: We were assessed 152 morbid obese patients who underwent laparoscopic sleeve gastrectomy (LSG), 98 were female (64%) and 54 were male (36%). Average body mass index (BMI) was 47.24± 4.34. Baseline WED was present in 36 (23.6 %) patients with a average IRLS score of 15± 4.0. Six months following the LSG procedure, an extra 26 (17%) patients who existed for follow up had developed WED; In 6 months period an extra 14 (53.8%) patients; also in 12 months period an extra 12(46%) had developed WED. Preoperative complete blood count and biochemical results of patients were evaluated as hemoglobin was below 10.2 g/dL in 22 (14%) patients. In baseline, 40 (26.3%) patients were taken a proton pump inhibitor drug and 34 (22.3%) were used a antidepressant drug. Sleep studies were performed in 76 (50%) of patients and 48(63.1%) were diagnosed with obstructive sleep apnea (OSA). Conclusion: LSG surgery for morbid obese patients may be a significant risk for WED (due to the narrowed stomach volume and a bit contact to acide secretion) than the general society and their disease may be undiagnosed. Long-term follow-up further studies would be excessive, especially given increased risk of iron deficiency for this patient society. Routine screening for WED may be take into account for bariatric surgery patients who underwent LSG.

Poster Presentation 02

The Outcomes of Lung Function Parameters in COPD With Obstructive Sleep Apnea in Morbid Obese Patients Who have Undergone Metabolic Surgery

Burcu YORMAZ, Ilhan ECE, Serdar YORMAZ
Selcuk University, Department of Surgery, Konya, Turkey

Objective: In Chronic obstructive pulmonary disease (COPD) associated with obstructive sleep apnea (OSA) changes in lung function are usually suggested to be related
with morbid obesity. The purpose of the this study was to evaluate the diffusing capacity for carbon monoxide (CO) in morbid obese preoperative and postoperatively period of patients with COPD.

Methods: This study concluded 83 morbid obese patients with COPD (average age 43.5±4.61) with Body-Mass Index (BMI) > 40 were enrolled in the study retrospectively. OSA was evaluated by overnight cardiopulmonary monitoring. All of the patients underwent lung CO diffusing capacity measurement to detect the diffusion parameters (TLCO, KCO).
Results: Of 16 patients who had OSA were distributed to group A. On the other hand group B patients, 57 who had without OSA. Mean BMI was 48.2 ± 4.63. KCO was found to be comparatively increased in COPD with OSA patients. (96 (81;104) vs. 67 (54; 103), p=0.01). Expiratory, and inspiratory respiratory parameters were negatively related with average at night oxygen saturation (r=-0.24, r=-0.51, r=-0.31, respectively, p<0.01). At the same time positive correlations were displayed for TLCO and KCO with AHI (r=0.25 and r=0.21, respectively, p<0.05). However this scores have significantly fixed to positively slope according to tthe unoperated patient population.

Conclusions: Although we were inadequate to show the differences in airway resistance depending on the accompaniment of OSA, we have detected significantly lower rates in CO diffusion in postoperatively OSA group patients.
Furthermore we think that novel researchs which made by surgical procedures could contribute to healing in COPD society who were morbid obese.

Poster Presentation 03

Lactic Acidosis With Broad-Anion Gap

Oğuzhan ÖZCAN[1], Ali KARAKUŞ[2], Güven KUVANDİK[2]
[1] Mustafa Kemal University Faculty of Medicine Medical Biochemistry, Hatay, Turkey
[2] Mustafa Kemal University Faculty of Medicine Emergency Department, Hatay, Turkey

Backround: Lactic acidosis is a life-threating metabolic acidosis with a broad-anion gap. It is generally defined as a serum lactate concentration above 4 mmol/L. It is associated with increased anaerobic metabolism due to several condition such as decreased blood flow, drugs, toxins and septic shock. Impaired tissue oxygenation and decreased lactate clearance primarily by the liver can lead to increased lactate levels (Figure 1). In this study we aimed to present a case of broad-anion gap lactic acidosis and delirium.

Case: A 36-year-old male admitted to emergency room with impaired consciousness and agitations. Blood pressure was 90/60 mmHg, heart rate was 115 beats per minute and sinus tachycardia rhythm was observed in the electrocardiography (ECG) examination. Clinical examination revealed a confused patient who has a moderate clinical condition and Glasgow Coma Scale score of 9 in admission.
Medical history revealed that the patient had 3 epileptic seizures during last three-year period and has been medicated with antiepileptics (levatiracetam 750 mg, 2x1 and carbamazepine 400 mg, 2x1). According to statement of parents there was no past medical history included diabetic mellitus, hypertension and any addiction of alcohol and medication.
He was given intravenous diazepam 10mg, midazolame 5mg, haloperidol 5mg and chlorpromazine 5 mg for sedation but agitations had not been controlled. Therefore, continuous infusion of propofol administered and intubation was performed.

Initial laboratory investigation results included a serum glucose level of 186 mg/dL; pH, 6.9; HCO3, 6.5mEq/L; PCO2, 33.4 mmHg; PO2, 104.6 mmHg; lactate, 24.66 mmol/L; WBC, 21,76 10^3/uL; NEUT, 13,09 10^3 /µ L and serum CRP level of 31.1 mg/L . Calculated anion gap was 32 mmol/L. Other serum chemistry and hematological results were within normal limits and showed Table 1.
Patient was diagnosed with broad-anion gap lactic acidosis. Intravenous fluid (SF, 0.9%) and bicarbonate therapy (5 flacon within 100 cc dextrose, 5%) were started immediately and the patient was transported to the intensive care unit for monitoring. During hospitalization, proper fluid and bicarbonate treatment was continued. Consecutive blood gas analyses results were also shown in Table 1. No significant abnormalities were seen in cranial computerized tomography (CT) but the signs of lobar pneumonia were observed in chest radiography. Patient was considered to be lactic acidosis seconder to pneumonia. The patient was discharged after being treated with proper antibiotherapy for three days.

Conclusion: Lactic acidosis is a life-threatening metabolic acidosis and can be improved by appropriate medical treatment. Arterial blood gas analysis is very important to evaluate a patient's lactate levels and oxygenation. Early diagnosis of these patients would help to prevent morbidity and mortality.

Keywords: Lactic acidosis, anion gap, metabolic acidosis

Table 1. Blood gas analaysis and other laboratory results of the patient

Time	**pH**	**$Pa0_2$ (mmHg)**	**$paCO_2$ (mmHg)**	**HCO_3 (mEq/L)**	**SO_2 (%)**	**Lactate (mmol/L)**
Initial	6,90	104,6	33,4	6,5	93,3	24,66
2nd hour	7,26	98,3	41,5	18,2	96,6	7,34
2nd day	7,38	215,2	33,4,	22,4	98,7	0,97

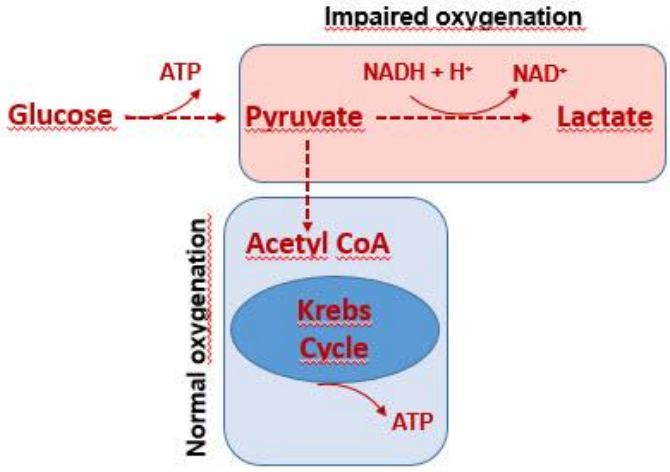

Figure1: Glucose metabolism in different stage of oxygenation.

Poster Presentation 04

Aile Sağlığı Merkezi'nde Bir Yılda Uygulanan Enjektabl İlaçların Değerlendirilmesi

Volkan ATASOY
Kalkınma Aile Sağlığı Merkezi, Trabzon

Amaç: Enjektabl ilaç uygulamaları Aile Sağlığı Merkezleri'nde verilen tıbbi hizmetlerin önemli bir bölümünü oluşturmaktadır. Bu çalışmada Aile Sağlığı Merkezi'nde bir yıl boyunca uygulanan enjektabl ilaçlar değerlendirilmiştir.

Yöntem: 1 Ocak 2016 ile 1 Ocak 2017 tarihleri arasındaki bir yıllık sürede Trabzon Ortahisar Kalkınma Aile Sağlığı Merkezi'nde uygulanan enjektabl ilaç bilgilerine enjeksiyon kayıt defterinden ulaşıldı. İlaçlar jenerik isimlerine bağlı olarak klinik etkilerine göre gruplara ayrılarak değerlendirildi. Toplam enjekte edilen ilaç içindeki payı %1'in altında olan ilaçlar diğer grup başlığı altında toplandı.

Bulgular: Enjeksiyon yapılan toplam hasta sayısı 1499'dur. Bu enjeksiyonlarda 52 farklı jenerik ilaç toplam 1724 kez uygulanmıştır. En fazla enjeksiyon yapılan ilaç grubu %30,22 (521) ile analjeziklerdir. En az enjeksiyon yapılan ilaç grubu %1,04 (18) ile antipsikotiklerdir. Öteki ilaç grupları sırasıyla antibiyotikler %22,79 (393), vitaminler %18,90 (326), miyelorelaksanlar %11,60 (200), kortikosteroidler %9,33 (161), antikoagülanlar %1,68 (29), hormon ve hormon analogları %1,62 (28), antihistaminikler %1,10 (19) ve diğerdir %1,68 (29). Siyanokobalamin 323 (%18,70) uygulama ile toplam enjekte edilen ilaçlar içinde en fazla uygulanan jenerik ilaçtır. Enjeksiyonlar için intramuskuler, intravenöz veya subkutan yollar kullanılmıştır.

Sonuç: Kayıtlarımıza göre en sık enjektabl ilaç uygulaması analjezik, antibiyotik ve vitaminler için yapılmıştır. Çalışma dahilindeki enjeksiyonlara bağlı tespit edilen veya bildirilen bir yan etki olmamıştır.

Poster Presentation 05

A Case of Inflammatory Cardiomyopathy in ED

Mehmet ÜNALDI[1], Hatice ERYİĞİT[2]
[1]Department of Emergency Medicine, Medeniyet University Göztepe Training and Research Hospital, Istanbul
[2]Department of Thorax Sugery, Kartal Training and Research Hospital, Istanbul

Introduction: Myocarditis (inflammatory cardiomyopathy) is a common cause of dilated cardiomyopathy. It is inflammation of the heart muscle and is frequently accompanied by pericarditis. In this study we present a case of myocarditis in a young patient.

Case: 18-year-old male patient admitted to the ED with complaints of chest pain, myalgias. In history he had common cold a week ago and had chest pain typically. Vital signs: tension;140/80 mm-Hg; beat;80/min; fever;36,8. ECG of him showed normal sinus rhytm and negative T wave on D3. Laboratory samples revealed troponin:0,89- 3 ng/ml, CRP:3,7 mg/dl (0-0,5). Echocardiographic evaluation detected efection fraction:55%, global mild hypokinesia, mild mitral insufficiency. He was interned to cardiology clinic as prediagnosed myocarditis.

Conclusion: Myocarditis is discussed seperately to highlight its acute presentation and individual therapy. It is most frequently characterized pathologically by local infiltration of the myocardium by lymphocites, plasma cells and histiocytes. Many epizodes are mild, they do not always come to meical attention. In severe cases, heart failure can develop. Retrosternal or precordial angina-type chest pain may be frequent as in this case and is usually due to pericardial inflammation.

Poster Presentation 06

A Different Chest Pain in The Emergency Service: Kounis Syndrome

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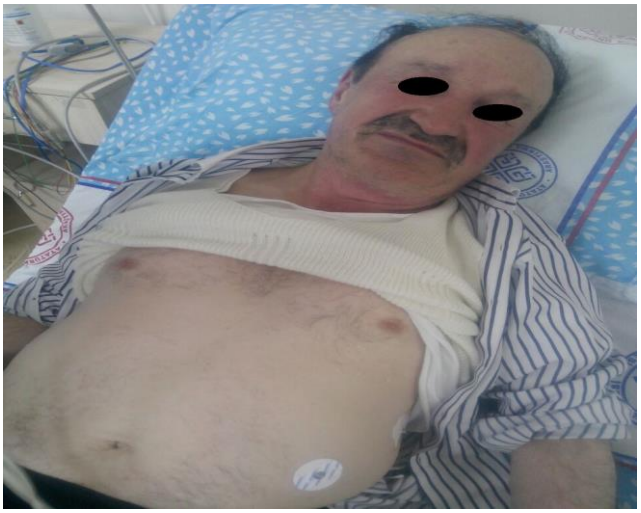
Introduction: Kounis syndrome is defined as the concurrence of acute coronary syndromes with conditions associated situations including allergic or hypersensitivity reactions. It is caused by inflammatory mediators such as histamine, proteases, arachidonic acid products, platelet activating factor and a variety of cytokines and chemokines. This syndrom can progress to myocardial infarction and can be fatal. This can be caused by drugs, foods, environmental factors (insect bite, bee sting, pollen, latex touch) and intracoronary stent placement. The treatment can vary according to the clinical findings.

Case: A 61-year-old male patient applied to the emergency service for rash and redness on his face and neck. There was no known heart disease in his story. The medication for flu started previously. Immediately after drug administration, itching and rash formed in patiens body. At the same time the redness of the face has developed. The rash has healed in a short time; but redness have not healed. There was uvula edema, redness on his neck and face in the phsycal examination (figure).The vitals were stable. ECG was not remarkable. An angioedema treatment was applied to the patient who had not specialty in his routine. For the patient who developed chest pain during follow-up, ECG was in normal sinus rhythm. Troponin was positive in the biochemical study; therefore cardiac consultation requested to the patient. The patient hospitalized with diagnozis of kounis syndrom after consultation. The patient, who was followed up with angiography as "Type 2" kounis syndrome, was discharged with healing.



Discussion: Kounis syndrome is difficult to diagnose. You have to be skeptikal for diagnozis. Patients with chest pain accompanying an allergic reaction should be suspected of kounis syndrome, which may progress to MI and may be fatal. In case of doubt of kounis syndrom, the patient should be kept under observetion until diagnosis or exclusion.

Keywords: Kounis syndrome, Allergic chest pain, Acute coronary syndromes.

Poster Presentation 07

A Rare Complication After Epileptic Seizure: Patella Dislocation

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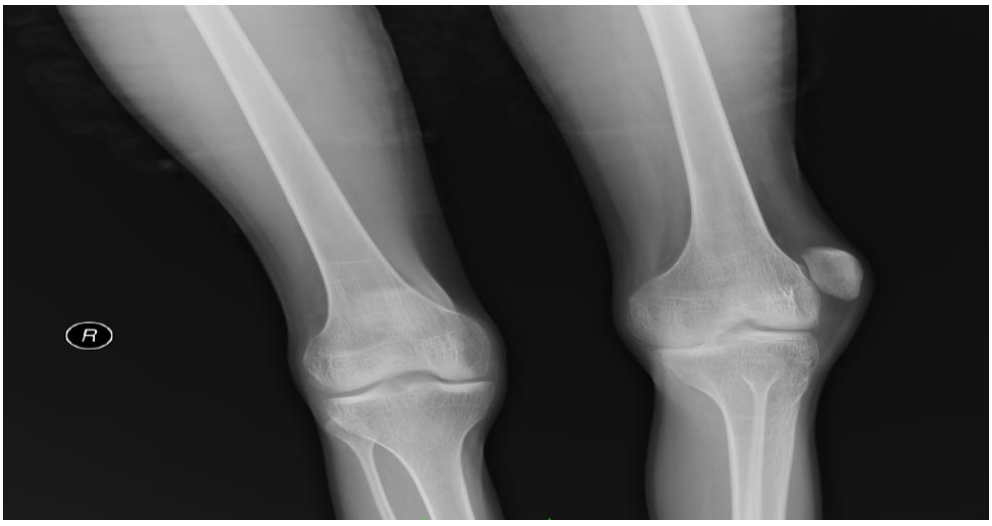
Introduction: Patients with epilepsy do not always come to the emergency room with seizures. They may also apply with indirect complications of epileptic seizure. Various complications can be seen in these patients due to trauma caused by sudden loss of consciousness. In these patients, the risk of bone fractures or joint protrusions is higher than in other patiens with travma. Patella dislocations also are very rare.

Case: A 23-year-old male patient applied to emergency service with complaint about pain in the left knee and disorientation of the knee joint after an epileptic seizure. He has suffered from epilepsy for 6 years. He has used his medications regularly. The patient had a seizure in bed in the morning, then felt severe pain in his left knee. It was observed that the vitals were stabilized. The left patella was higher than right patella in the physical examination. There was a dislocation of the left knee patella on the X-ray (Fig.). There was no additional pathology. The dislocated patella was replaced in the emergency service by emergency staff. The patient was discharged with knee pad, rest, and anti-inflammatory.



Discussion: Trauma is a common complication in epilepsy patients. Especially the patient without travma story should be evaluated carefully in terms of travma. Detailed physical examination should be performed in these patients. All joint movements must be evaluated.

Keywords: Epilepsy, Patella Dislocation, seizure.

Poster Presentation 08

A Reason of Chemical Burn: Grape Vinegar

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Introduction: It has been increasing interest in alternative medicine all over the world in recent years. Although there is a belief among the public as completely harmless alternative methods, using these methods can lead to risky conditions and side effects.

Case Report: 23 year-old male patient was admitted to emercency room with redness and pain in the left leg. 1 days ago, because of pain in his left knee, he had compressed cotton wetted half a glass of water (about 100 mL) and vinegar (grape vinegar, 5% acetic acid) on the advice of his mother, about 3 hours. Burning and redness in the leg had began after removing the cotton. It had not passed the burning feel, it had increased redness and pain for 1 day. He had done these types of applications before, but he said that he had not kept longer in vinegar wetted cotton on his leg before. 12 years ago, he had been operated for cervical and thoracic region of the giant hemangioma, since then he had drop foot on left and had decreased sensation in the left leg. The patient was using walking assist device. Vital signs were normal, except for fever (38,1°C). On his physical examination, he had a circular first degree burn on the left leg which was started 10 cm above the patella and extended 15 cm below the patella. There was an increase in temperature and minimal increase in thickness in the left leg. Peripheral pulses were palpable. There was no abnormal laboratory findings. Before he came to the hospital, he hadn't washed the the burned area. Washing with water, wound care and IV analgesics were administered. He was discharged with recommendation of leg elevation and daily wound care and precribed oral antibiotics,

Conclusion: Vinegar consists of 4-5% acetic acid. Chemical burns is often associated with strong acid (like sulfuric, nitric and hydrochloric acids), but acetic acid is a weak acid may be the cause of such burns. As our patient, tight bandages and long-term use is more likely to occur burns. In patients with chemical burns, physicians should be kept in mind that one of the reasons is alternative treatment.

Keywords: Chemical burn, grape vinegar, acetic acid.

Poster Presentation 09

Late Complication Related to Abdominal Surgery: Intra-abdominal Abscess

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Introduction: Postoperative intra-abdominal abscess is difficult to treat, has high mortality and morbidity. It is a septic complication of abdominal surgery. Because of its poor prognosis; prevention, early diagnosis and treatment is important. The most important factors in the development of intra-abdominal infections in the postoperative period are diabetes, liver and respiratory dysfunction. There are also more at risk of intra-abdominal infections in cancer patients in the postoperative period. USG and CT have an important role for the diagnosis. CT is superior to USG in the diagnosis with 77-98% accuracy

rate. The treatment of postoperative intra-abdominal abscess is drainage. Appropriate antibiotic therapy should be administered with drainage.

Case Report: 68 year-old male patient was admitted to emercency room with nausea and vomiting. 20 days ago he was underwent Whipple procedure because of the distal common bile duct tumor, he was discharged from the hospital 10 days ago. After operation, he hadn't have any complaints for 1 week, abdominal pain had started 3 days ago. Nausea and vomiting had started after then. He had been suffering from COPD for 7 years. Vital signs were normal. On physical examination, , the new operation scar which was starting from the epigastric region and extended until the lower right quadrant of the abdomen "inverted L" shape, was seen. He had diffuse abdominal tenderness and defence at left upper quadrant. Laboratory findings showed a high WBC count (23200). Other laboratory findindgs were within normal limits. In order to explain the etiology of the patient's abdominal pain; abdominal CT was performed. Abdominal CT demonstrated that fluid collection compatible with abscess which started the inferior of spleen and bowel and extended to left iliac wing, 14cm x 5 cm in size.(Figure-1) It also had free air anterior to the liver. Because of that, he was consulted general surgery clinic and hospitalized with the diagnosis of intra-abdominal abscess.

Conclusion: Postoperative intra-abdominal abscess has a high morbidity and mortality rate, if not diagnosed early. Therefore, in patients presenting with abdominal pain if they have recently history of abdominal surgery, clinicians should be kept in mind that postoperative intra-abdominal abscess which is one of late complications.

Keywords: Intra-abdominal abscess, abdominal pain, postoperative

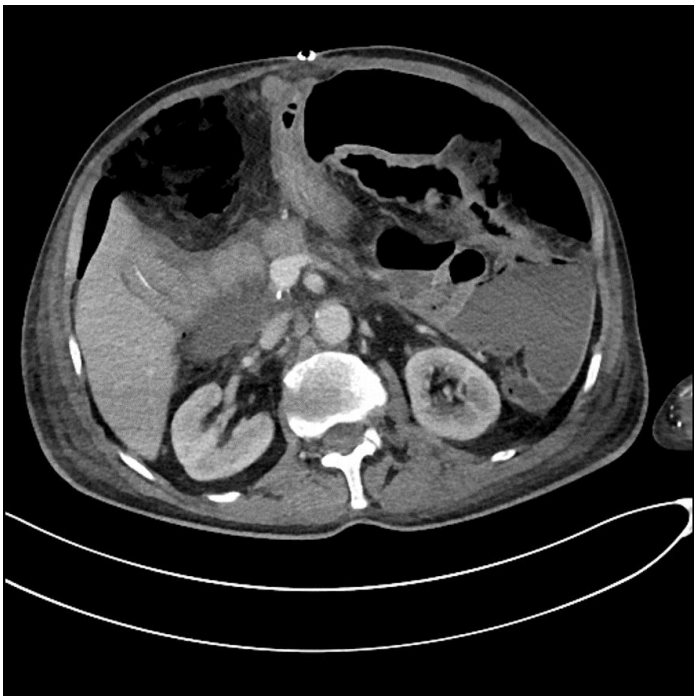

Figure-1- 14cm x 5 cm abscess

Poster Presentation 10

Nonsteroid Anti-İnflamatuar İlaç Kullanımına Bağlı Gelişen Akut Ürtiker: Bir Olgu Sunumu

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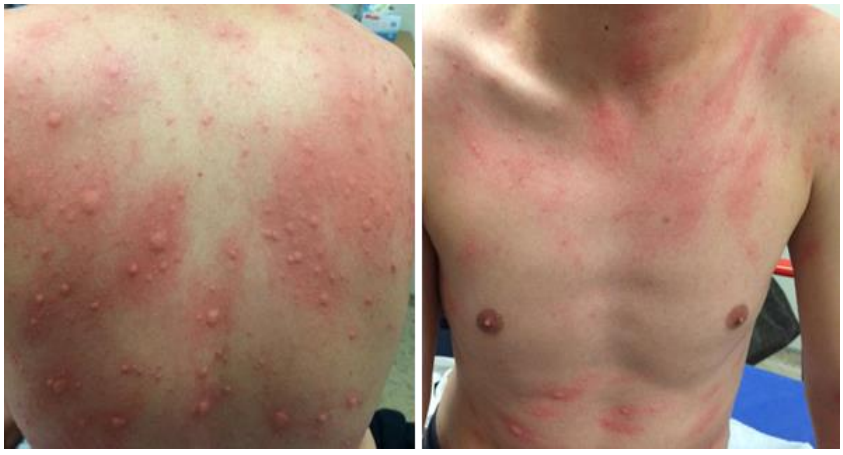
Giriş: Nonsteroid anti-inflamatuar ilaçlar (NSAİİ) toplumda ateş düşürücü ve ağrı kesici özellikleri sebebiyle sık kullanılmaktadır. Sık kullanılmaları sonucunda yan etkileriyle de fazlaca karşılaşılmaktadır. Bu çalışmada baş ağrısı nedeniyle NSAİİ kullanımına bağlı akut ürtiker gelişen bir olgunun tartışılması amaçlanmıştır.

Olgu: 22 yaşında erkek hasta vücudunda yaygın döküntü ve kaşıntı şikayeti ile başvurdu. NSAİİ aldıktan bir saat sonra döküntüleri başlamış. Göğüs bölgesinde, sırt bölgesinde ve en son başında kaşıntılı, kırmızı renkli döküntüleri olmuş. Alerjik hastalık öyküsü yok. Bazı NSAİİ'a karşı alerjisi varmış. Fizik muayenesinde nabız:105/dakika dışında vital bulguları normaldi. Göğsünde, göbek çevresinde, sırtında ve saçlı deride yaygın, üzerine basmakla solan, eritemli yaygın papül ve plaklar mevcuttu (Resim 1). Uvula ödemi mevcuttu. Diğer sistem muayeneleri normaldi.

Tartışma: NSAİİ'ın birçok yan etkisi bulunmaktadır. En sık görülen yan etikileri mide yanması, dispepsi, renal toksisite, kanama süresinde uzama, çarpıntı ve alerjik reaksiyonlardır. Bizim hastamızda NSAİİ kullanımından bir saat sonra kaşıntılı, eritemli, yaygın papül ve plak şeklinde döküntüler mevcuttu. Ayrıca uvula ödemi oluşmuştu. Daha öncesinde de farklı NSAİİ aldıktan sonra bu şekilde döküntüleri olmuş. Hastaya akut ürtiker tanısı koyuldu ve tedavisi düzenlendi.

Sonuç: Günlük pratiğimizde reçetesiz ilaç kullanımı ile sıklıkla karşılaşmaktayız. Özellikle NSAİİ'ın hekim önerisi olmadan kullanımı oldukça fazladır. Bu bağlamda NSAİİ'ler başta olmak üzere gereksiz ilaç kullanımının önlenmesi için toplumun bilinçlendirilmesi önemlidir. Bu açıdan özellikle birinci basamak sağlık çalışanları merkezi bir role sahiptir. Akılcı ilaç kullanımına dikkat edilmesi bu tür yan etkilerin önlenmesi için yararlı olacaktır.

Anahtar Kelimeler: Ürtiker, NSAİİ, aile hekimliği



Resim 1. Ürtiker döküntüleri

ORAL ABSTRACTS

Oral Presentation 01

The Evaluation of Clotting Parameters in Morbid Obese patients Concomitant Obstructive Sleep Apnea Syndrome Who Underwent Bariatric Surgery

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Objective: Morbid obese patients with obstructive sleep apnea (MOSA) have a significant risk of pulmonary diseases. The aim of present study is to evaluate the relationship between MOSA and levels of prothrombotic markers and display possible effects of bariatric surgery.

Methods: We were evaluated 128 patients with arterial hypertension (AH), (range period 1 to 6 months). By the cardiopulmonary monitoring, it was discovered that of 31 patients (24%) had mild OSA and 97 (76%) had moderate to severe OSA. In patients with serious OSA's biochemical samples (clotting factors, viscosity of whole blood) were taken at preoperative 12 hours and after 12 hours after bariatric surgery and taken CPAP therapy (AHI< 5).

Results: Morbid obese patients with moderate and severe OSA have significant levels of D-dimer (768.9± 226.8 g/L vs 1119.4 ± 141.2 g/L, P = 0.04), fibrinogen (5.3±0.6 ng/mL vs 3.4±0.4 ng/mL, P < 0.01), plasmin- antiplasmin complex (234.5±57.2 ng/mL vs. 165.5 ±31.0 ng/ mL, P < 0.01) than patients with mild or without OSA. After the postoperative period at 12 hours of CPAP therapy. We observed a tendency to decrease viscosity of blood at high cutting rate (from 5.6±0.7 and 4.7±0.5 P = 0.07), but not reached a significance proportion.

Conclusion: The clotting stuation of blood is increased in severe and moderate OSA patients. These outcomes may explain the higher prevalence of pulmonary vascular diseases in this patient society. We were found no significant effect of short-term CPAP therapy on these parameters after the surgical process.

Oral Presentation 02

Is Mean Platelet Volume (MPV) Predict The Course of Painful Crisis in Patient With Sickle Cell Anemia?

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Objective: Sickle cell disease is caused by a genetic abnormality in the gene of hemoglobin. It is very important in preventive family medicine because it is most common genetic disorders in Turkey especially in Hatay province. Painful crises are most striking clinical manifestation and related to patient's mortality, morbidity and quality of life. Besides, it is also most common reason for applying to

emergency department. MPV reflects the average size of platelets and higher MPV values mean larger and more active platelets. In this study we aimed to investigate the relationship between MPV values and painful crisis in patients with sickle cell anemia.

Method: This is a retrospective study carried out in patients with sickle cell anemia and control subjects who applied to university hospital between 2014 and 2016. Patients were excluded if they had another type of hemoglobinopathy, vasculitis, bleeding disorders and received transfusion in three months prior to admission. Every application with or without crisis were considered separate cases. Demographic information, hospital stay, application frequencies and MPV values of patients were collected from Hospital Information System (HBS) and Laboratory Information System (LIS). During the study period, venous blood samples were collected in hemogram tubes with dipotassium EDTA and analyzed by an automated blood counter analyzer (Sysmex® XN-series Automated Hematology analyzers). Age and gender matched controls data also recorded.
Subjects were divided into three groups, Sickle cell patients wih crysis, sickle cell patients without crysis and healty controls. Data were analyzed using SPSS® software, version 14.0 (SPSS Inc., Chicago, IL, USA) for Windows. MPV and other hematological parameters of groups were compared with Kruskal Wallis test and correlation between MPV and other parameters including duration of hospital stay were also analyzed. A P-value <0.05 was considered statistically significant.

Result: We studied 857 applications (m, 430; f, 427) and 412 control subjects (m, 201; f, 211). Baseline characteristics and hematological parameters were summarized in Table 1. The MPV values were significantly higher in sickle cell with crisis group (n=350, median=8, min= 4.92, max=17.8) than sickle cell without crisis (n=507, median=7.48, min= 5.42 max=17.3) (Figure 1). Besides there was poor but significant correlation between MPV values and duration of hospital stay (r=2.66, p<0.01). WBC, neutrophil, RBC and lymphocyte counts also different between these two groups.

Conclusion: MPV values is related to painful crisis and duration of hospital stay and can be useful marker for evaluating the course of disease in patients with sickle cell anemia.

Table 1. Comparison of whole blood parameters among groups.

	Grup I (n:507)	Grup II (n:350)	Grup III (n:412)	Group comparisons p value
Gender (f/m)	257/250	170/180	211/201	p>0.05
Age	31 (18-63)	32 (18-63)	33 (18-63)	p>0.05
RBC (x10^6/µL)	2,96 (1,05-6,96)	2,78 (0,99-6,28)	4,85 (3,93-5,8)	1-2(0,008) 1-3(0.000) 2-3(0.000)
Hb (g/dL)	9,04 (4,47-12,4)	9,1 (4,68-15,3)	14,1 (11,9-16,4)	1-2(0,239) 1-3(0,000) 2-3(0,000)
Htc (%)	27 (8,41-49)	26,3 (13-46,6)	42,6 (9,1-49,4)	1-2(0,563) 1-3(0,000) 2-3(0,000)
MCV (fL)	92,2 (59,1-140)	93,2 (60,7-145,5)	87,9 (81,7-96,9)	1-2(0,121) 1-3(0,000) 2-3(0,000)

MCH (pg)	32,2 (19,6-51,1)	32,9 (19,1-52,8)	29,1 (25,7-35)	1-2(0,035) 1-3(0.000) 2-3(0,000)
MCHC (pg/dL)	34,7 (29,2-45,1)	34,9 (29,5-40,4)	33 (30,2-35,4)	1-2(0,352) 1-3(0,000) 2-3(0,000)
RDW (%)	21,3 (12-54)	20 (10,1-45,3)	12,7 (10,7-21)	1-2(0,083) 1-3(0,000) 2-3(0,000)
PLT (x10^3/µL)	461 (50,7-1498)	450 (86,8-1421)	261,5 (159-462)	1-2(0,195) 1-3(0,000) 2-3(0,000)
MPV (fL)	8 (4,92-17,8)	7,48 (5,42-17,3)	10,7 (8,4-16,2)	**1-2(0,000)** 1-3(0,000) 2-3(0,000)
WBC (x10^3/µL)	16,7 (3,65-48,62)	11,1 (2,1-29,3)	7,41 (4,49-11,76)	**1-2(0,000)** 1-3(0,000) 2-3(0,000)
Neu (x10^3/µL)	8,47 (0,96-34,1)	5,67 (0,34-23,9)	4,32 (2,1-8,17)	**1-2(0.000)** 1-3(0,000) 2-3(0,000)
Lym (x10^3/µL)	5,08 (0,33-19,6)	4,13 (0,49-11,7)	2,31 (1-44,3)	**1-2(0,000)** 1-3(0,000) 2-3(0,000)
Eos (x10^3/µL)	0,29 (0-3)	0,215 (0,01-2,3)	0,14 (0-1,33)	1-2(0,027) 1-3(0,000) 2-3(0,000)
Bas (x10^3/µL)	0,25 (0-3,63)	0,21 (0-3,21)	0,04 (0,01-1)	1-2(0,444) 1-3(0,000) 2-3(0,000)
Mon (x10^3/µL)	1,34 (0,12-5,53)	1,01(0,04-4,81)	0,56 (0,27-1,46)	**1-2(0,000)** 1-3(0,000) 2-3(0,000)

Group I, Sickle cell anemia with crisis; Group II, sickle cell aenmia without crisis; Group III, control; Values are given as median (min-max); * P<0.017 is significant (Bonferroni correction)

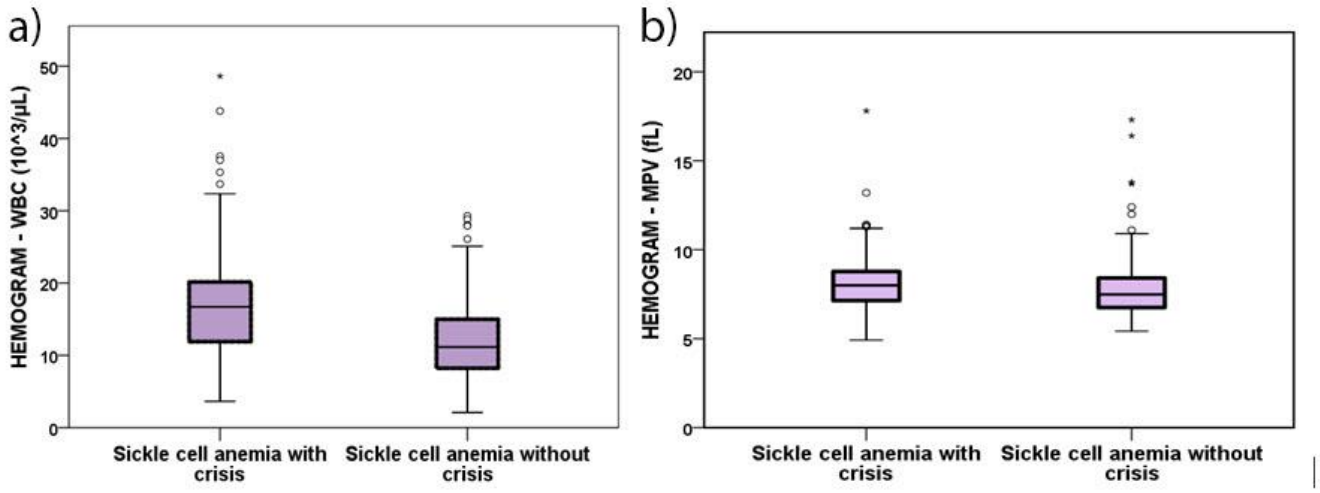

Figure 1. WBC (a) and MPV (b) distribution between sickle cell anemia with crisis and without crisis

Oral Presentation 03

Intoxications in Intensive Care; Cost and Bed Occupancy According to Glaskow Coma Score

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Introduction / Purpose: Intensive care units (ICU) are the units in which critical care and follow-up are conducted. About 5-30% of YBU beds are used for intoxication. In ICU, intoxications may be mortal or can be discharged only by observation without any complication. The necessity of hospitalization of all of these patients to ICU should be discussed in terms of bed occupation and cost. In our study, it was aimed to determine the necessity and cost of hospitalization of ICU patients who were admitted to an intensive care unit from the emergency service with intoxication diagnosis.

Materials / Methods: This study was conducted by reviewing the files of 205 intoxication patients who underwent more than 24 hours of follow-up and treatment at 2nd and 3rd level ICU. Patients were divided into two groups according to Glasgow Coma Score (GCS) 15 (Group= 15) and below 15 (Group <15) admitted to ICU. The patients' age, gender, GCS, poisoning cause, number of days spent in the ICU, and the need for mechanical ventilation (MV) were recorded and the ICU costs of the groups were calculated. In addition, the cost that would be generated if the patients in Group = 15 were followed in the service environment rather than in the ICU.

Findings: Of the 205 patients examined, 145 were GCS: 15, while 60 were below GCS 15. The number of patients with GCS = 15 and the incidence of suicide intoxication were higher in females. The number of intoxications with cardiovascular system drugs and analgesic drugs was greater in group = 15, while the number of intoxications with carbon monoxide and drug substances was greater in group <15. The number of days spent in ICU, MV requirement and ICU costs were higher in Group <15 (Table 1). If the patients in group = 15 had been followed in the service environment, the cost would have been lower than the cost in YBU (Table 2).

Discussion / Conclusion: As GCS is Specific and easy to administer, it can be used to determine the need of intoxication cases for admission to ICU units. It is widely believed that intoxications that are life threatening with organ insufficiency should be followed in 2nd and 3rd level ICUs. The fact that ICU beds in our country are not used according to the criteria is a big problem, which may increase the cost of use and cause an increase in mortality. Adhering to the criteria for accepting patients to high cost units which require specialist and technological equipment such as ICUs, will prevent unnecessary bed occupation and ensure proper use of resources. According to our study, close follow-up of patients with GCS = 15 admission to ICUs at an equipped service would reduce cost and bed occupancy.

Keywords: Intoxication, GCS, cost, bed occupation

Table 1. Demographic data and patient characteristics

	Group =15 (n=145)	**Group <15 (n=60)**	**p**
Age (year)	26.2±9.6	35.9±14.4	<0.0001
Arrival GCS	15	10.8±2.9	<0.0001
Gender (F/M)	93/52	19/41	<0.0001
The cause of poisoning			
Psychiatric medicine	64 (%44.1)	31 (%51.6)	0.325
Neurological medicine	15 (%10.3)	6 (%10)	0.858
Analgesic medicine	37 (%25.5)	1 (%1.6)	0.0001
Carbon monoxide	0	7 (%11.6)	0.0001
Cardiologic medicine	17 (%11.7)	0	0.003
Drugs	10 (%6.8)	15 (%25)	0.0007
Pesticides	2 (%1.3)	0	1
Hospitalization day	1.97±1.1	6.2±22.9	<0.0001
Mechanical ventilation requirement (number of patients)	0	16 (%26.7)	<0.0001
ICU Cost (TL)	412±290	1238±1363	<0.0001

Table 2. YBU and Servicing Costs of Group = 15

Group=15	ICU	At service	p
Cost (TL)	412±290	147±57	<0.0001

Oral Presentation 04

Tetanoz İmmünizasyonu Yeterli Mi?

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Giriş: Tetanoz, günümüzde önlenebilir bir hastalık olmasına rağmen, halen mortaliteye neden olan hastalıklar arasında bir halk sağlığı sorunudur. Tanı çoğunlukla klinik belirti ve bulgularla konulmaktadır. Laboratuvar bulguları tanıda her zaman yol gösterici değildir. Doğru zaman ve uygun şekilde yapılacak olan immünizasyon hayat kurtarıcıdır. Bu nedenle hastaların yaralanma sonrası immünizasyonları doğru zamanda planlanıp tamamlanmalıdır. İmmünizasyonu eksik olan hastalarda risk faktörleri önceden belirlenmeli mortalitenin önüne geçmek için tedavi planlanmalıdır.

Bu çalışmada tetanoz tanılı hastalardaki immünizasyon durumu ve risk faktörlerinin mortalite üzerine etkisinin değerlendirilmesi amaçlanmıştır.

Metod: Bu çalışmada kliniğimizde izlenen 1992-2016 tarihleri arasındaki tetanoz olguları retrospektif olarak irdelendi. Hastalara ait demografik ve klinik özellikleri; hasta dosyaları ve enfeksiyon hastalıkları ve klinik mikrobiyoloji hasta izlem formlarından elde edildi. Tetanoz gelişimindeki risk faktörleri irdelendi. İstatistiksel analizde anlamlılık değeri $p<0.05$ olarak kabul edildi.

Bulgular: Çalışmamızda 55 tetanoz olgusu incelenmiştir. Hastaların %80'i 40 yaş ve üzerinde idi, yaş ortalaması 54,9±15,5 olup, %67,3'ü kadındı. Hastaların %67.3'ünde minör travma olarak kabul edilen ekstremitelere çivi, odun parçası batması, ezilme, kesi gibi yaralanmalar; %41,8'in de toprakla kontamine yaralanma vardı. Hastaların %87,3'ü aşılama öyküsünü bilmezken, %9,1'inin de son 10 yıl içinde aşılaması yoktu. Hastaların %61,8'ine yaralanmadan 3,1±4,1 gün sonra aşı yapılmıştı. İmmünglobulin yapılma oranları beyana dayalı anamnez olduğundan net değerlendirilemedi. Hastaların %80'inde trismus, %76,4'ünde yutma güçlüğü, %58,2'sinde tüm vücut kasılması vardı. Ortalama yatış süresi 13,1±13,4 (1-78) gün olup, 27 (%49,1) hasta mortal seyretti. Ölümlerle hastaların ek hastalıkları (DM, KKY, HT..) arasında ilişki yokken, yaş yüksekliği ile ilişkili idi (P=0.019).

Sonuç: Çalışmamamızda, toplumumuzda erişkin immünizasyon konusunda halen yeterli hassasiyet gösterilmediği hastaların aşılanma durumunu bilmemeleri ile ortaya konulmuştur. Yaralanma öncesi ve/veya sonrası hekime müracaat edenlere tetanoz proflaksisinin tam olarak yapılması mortalite ve morbiditeyi etkilemektedir. Bu nedenle; tetanoz riskii yaralanmalarda uygulanması gereken proflaksi hakkında sağlık personeli ve toplumun gerekli hassasiyeti göstermesi ile bu vakaların mortal seyretmesinin önüne geçilebilecektir.

Oral Presentation 05

İlköğretim Çağındaki Çocuklarda Obezite Sıklığı ve İlişkili Risk Faktörleri

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Amaç: Rize ilinde öğrenim gören 6-11 yaş grubu çocuklar arasındaki obezite ve fazla kilolu olma durumu ve ilişkili faktörleri saptamaktır.

Yöntemler: Polikliniğimize başvuran 2006 ile 2010 doğum tarihli 86 sı kız 94 ü erkek 180 çocuk hasta dahil edilmiştir. Çocukların ve ebeveynlerinin yaş, boy, kilo ve cinsiyetleri, çocukların iştah durumu, hazır yiyecekleri (atıştırma) tüketme sıklıkları, ebeveynlerin eğitim ve gelir durumları ve çocukların televizyon başında geçirdikleri süre değerlendirildi. Katılımcıların beden kitle indeksleri hesaplanarak sosyo-demografik özellikleri ile karşılaştırıldı.

Bulgular: Çalışmaya katılan tüm öğrencilerin %12.2'inde obezite, %15'inde ise kilo fazlalığı tespit edilmiştir. Anne ve baba VKI(vucut kitle indeksi),televizyon başında 2 saaten daha fazla kalma, fast-food tarzı beslenme ve fiziksel aktivite azlığı ile fazla kilolu veya obez olma durumu arasında ilişki saptarken; anne ve babanın eğitim düzeyi, bebeğin ek gıdaya başlama zamanı ile toplam anne sütü alma süresi arasında anlamlı bir ilişki bulamadık.

Sonuç: Çocukluk çağı obezite sıklığındaki artış özellikle obezite ile ilişkili risk faktörlerini tespit edip erken dönemde bunlarla mücadeleyi önemli kılmıştır. Hastaların ilk temas noktası olan aile hekimleri çocukluk çağı obezitesini önlemede sağlık sisteminin en önemli parçasıdır. Literatürdeki diğer çalışmalara oranla çocukluk çağı obezite prevalansının yüksek saptanması obezitenin giderek daha yaygın bir sorun haline geleceğinin göstergesi olabilir.

Anahtar Kelimeler: Obezite, çocuk, VKI (vücut kitle indeksi)

Oral Presentation 06

Beklenmeyen Bir Durum: Lityum İntoksikasyonu

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Giriş: Lityum tuzları 1940 lardan beri bipolar affektive bozukluğu tanısı alan pisikiyatrik hastalıkların tedavisinde ve profilaksisinde kullanılmaktadır. Lityumun etkinliği kanıtlanmış olmakla birlikte, terapötik indeksi çok dardır. İdame Lityum tedavisi alan hastaların çoğunda, tedavi sürecinde bir noktada toksisite oluşur. Lityum intoksikasyonunun şiddeti ile en iyi korelasyonu klinik semptomlar gösterirler. Lityum zehirlenmesinden her zaman artmış alım ya da azalmış atılım sorumludur. Bu sunumda, düşük lityum düzeylerine rağmen, şiddetli semptomlar gösteren bir olgunun klinik tablosu ve tedavisi literatür ışığında

tartışılmaktadır. Olgumuz, lityum intoksikasyonu tedavisinde kararların, serum lityum düzeylerinden çok klinik parametrelere dayalı olması gerektiğini desteklemektedir.

Olgu: 41 yaşında erkek hasta acil servise halsizlik, yorgunluk, ateş, eklem ağrısı, şuur bulanıklığı, bulantı, kusma şikayetiyle acil servise başvuruyor. Yaklaşık altı ay önce psikiyatri polikliniğinde bi-polar affektif bozukluğu teşhisi konularak lityium (Lithuril 300 mg.) 4×1 başlanmış. Benzer şikayetlerle iki gün önce aile hekimine bir gün önce de acil servise başvuruyor. Vital bulguları; TA: 100/70 mmHg, Nabız: 110/dak, Parmak ucu SAT: %80, Ateş 38 oC, Yapılan fizik muayenede ağız içinde oral aftlar ciltte pigmentasyon değişikliği konuşmada zorluk tesbit ediliyor. Laboratuar tetkiklerinde WBC: 12.89, HGB: 13.5mg/dl, PLT: 124, sedimantasyon: 30 mm/h, glukoz 181mm/dl, BUN:11mg/dl, Kreatinin: 1,17 mg/dl, Na:132 mmol/l, K:4,5 mmol/l, CRP: 11,9mg/dl, Lityum: 1,346 mol/l tesbit ediliyor. Görüntüleme tetkiklerinde anormallik arz etmeyen hasta, intoksikasyona bağlı solunum sıkıntısı nedeniyle anestezi yoğun bakım kliniğine yatışı yapılıyor. Yaklaşık 1 hafta sonra hastaya uygulanan uygun tedavi sonrası salah ile taburcu edildi.

Sonuç: Literatürde, lityumun kan değerinin akut yüksekliğinde olgumuza benzeyen, ve daha da yüksek kan Lityum düzeylerinde semptom görülmeyen iki olgu yer almaktadır. ilk olguda, ilk tesbitte 22.500 mg Lityumun aşırı alımı ile akut intoksikasyondan 13 saat sonra, 10.6 mEq/L kan Lityum düzeyi ile komplikasyon saptanmamış ve konservatif tedavi ile tam iyileşme sağlandığı bildirilmiştir. İkinci olguda, 45.000 mg Lityum ile intihar girişiminden 16 saat sonra, 8.64 mEq/L serum Lityum düzeyinde, hafif bulantı dışında semptom görülmemiştir.

Literatürde daha sık olarak, özellikle kronik intoksikasyonlarda ve olgumuza yakın serum Lityum düzeylerinde kardiyak komplikasyonlar ve sekel de bırakabilen şiddetli nörotoksisite olguları yer almaktadır. Olgumuzdakine kıyasla daha düşük serum Li düzeylerinde çeşitli komplikasyonların bildirildiği olgular da mevcuttur. Serum Li düzeyleri için; 1.2 mEq/L'de ortaya çıkan kardiyak komplikasyon, 0.94 mEq/L'de ortaya çıkan ve düzeyin 0.72 mEq/L'ye inmesiyle ortadan kalkan koreiform bozukluk, 1.8 mEq/L düzeyinde nörotoksisite, 2.86 mEq/L ile şiddetli nörolojik semptomlar, status epileptikus ve ölüm bildirilmiştir.

Lityum zehirlenmesi düşük mortalite oranına sahiptir. Lityum zehirlenmesi birçok organı etkiler, ancak asıl etkiyi merkezi sinir sistemi üzerine gösterir. Asemptomatik fazla tedavi gerektirmeyen durumdan konfüzyon, ataksi veya nöbet geçirmeye uzanan çeşitli klinik durumlarla ortaya çıkabilir. Bu durumdan akut veya kronik zehirlenme olup olmamasına bağlıdır.

Oral Presentation 07

Henoch Schonleın Purpura Presenting With Coin Lesion: Case Report

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Introduction: Henoch schonlein purpura (HSP) which involves small vessels is the most common vasculitis in childhood, and its etiology is not precisely known. At first, it manifests itself with palpable

purpuric skin rashes. Also, symptoms associated with joints, renal and gastrointestinal system may be seen. In %50 of the cases, there is a history of upper respiratory tract infection before the disease manifests itself. It is reported that HSP occurs most frequently between 5 and 15 years, with the mean age around 5-6 years. Patients usually present with classic purpuric rash, colicy abdominal pain and signs of arthritis. Despite very rarely, there may be skin rashes which are not purpuric. Cases with HSP who present with coin lesions are rarely seen. Herein, a case who was admitted with coin lesion will be presented.

Case: An eight-year old girl patient was admitted to our clinic with pain, redness and movement restriction in the legs. It was found out from her medical history that she received pharmacological treatment due to the complaints of upper respiratory tract infection which started two days before admission. On the physical examination of the patient who had normal vital signs, the oropharynx was hyperemic. There were round lesions approximately 2-3 cm in diameter which did not raise from the skin, did not blanch with pressure and a few millimetric pinky red purpuric rashes which did not blanch with pressure over the lower extremities (Figure 1). The examinations of other systems were normal. In the laboratory analyses, CRP was 13.5 mg/L (normal range: 0-5 mg / L) and other parameters were normal. The patient was internalized in our pediatric clinic for follow-up. During clinical follow-up, the coin lesions blanched and were replaced by classical purpuric rashes of HSP. The patient was diagnosed with HSP with atypical presentation. The patient whose clinical condition improved during follow-up was discharged.

Conclusion: The rashes of HSP patients are usually small, red, purpuric rashes which are like pinhead, mildly raised from the skin. However, although it is rare, patients with HSP may also present with coin lesion as in our case. In our case, typical HSP lesions also manifested during follow-up. Patients with HSP may not always present with classical symptoms. HSP should definitely be considered in the patients who have coin lesions and accompanying joint signs.

Oral Presentation 08

Multiple Poisoning Caused by Generator

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Introduction: The most common causes of CO poisoning are heaters, automobile exhausts, coal stoves and generators. Because CO poisoning have a wide range of clinical and nonspecific symptoms, diagnosis and so treatment delay. Because of nonspesific symptoms, it can be misdiagnosed. The smokers who has around 5-6% COHb values may be diagnosed incorrectly. Suspicion and medical history are very important for diagnosis. In this case series, we tried to show the importance of a good anamnesis. In addition, as one of the causes CO poisoning, we want to remind the use of generators.

Case Report: 4 male patients who were between the ages of 20-26 and was working in construction, was admitted to emercency room with headache, dizziness, nausea and vomiting. These complaints had started after lunch, 2 hours ago and had worsen. They didn't have a medical history about any systemic disease or drug use. For every patients; vital signs were normal and physical examination was normal. At their laboratory findings; CoHb levels were %9,3, %11,8, %13,2, %13,3, respectively. Other laboratory findings were normal. Because of the high of CoHb levels; patients were asked about smoking habits. They had been smokers for many years, but had not smoked last 2-3 hours. More questions about their medical history and the reasons that might have caused CO poisoning was asked. They said that they had been working in construction and the electrical wiring had not installed yet. Because of that, they had used generator. That day, to dry the new wall, they run the concrete dryer with generator for 3 hours. They were diagnosed with CO poisoning and was administered normobaric oxygen therapy. They were discharged after treatment.

Conclusion: As in all other clinical disciplines, anamnesis is the most important step for emercency medicine. Sometimes, patients doesn't tell some details which seems insignificant for them. So they can be misdiagnosed and wrong or unnecessary treatment can be administered.

Keywords: Carbon monoxide poisoning, generator, anamnesis.

Oral Presentation 09

Post-Traumatic Opaque Hemithorax: Is This Hemothorax?

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Introduction: Opaque hemithorax is a term which is defined as "a hemithorax looks opaque completely at posterior-anterior chest radiography". It is a radiological definition and not specific to any disease. Massive pleural effusion, fibrothorax, pneumonia, atelectasis, diaphragmatic hernia, malignancies, and destroyed lungs are the reasons that cause opaque hemithorax. The most common cause of one-sided opaque hemithorax is massive pleural effusion. Posttraumatic opaque lungs are often suggestive of massive hemothorax. In addition, main bronchus intubation of hemithorax causes opaque hemithorax at other side.

Case Report: Four-year-old female patient was admitted with the loss of consciousness after she had fallen on her head from a height of about 5 meters. Vital signs were normal. On her physical examination, there was a 10 cm x 5 cm subgaleal hematoma at the occipital region of the head. Respiratory sounds and other system examinations were normal. Glasgow Coma Scale score was 7 (E2, M2, V3) and the patient was intubated. After intubation, to perform computed tomography and plain radiography, the patient was

taken to the radiology unit. Pulse oxygen saturation decreased 81% when the patient came back again and tachypnea (32 / min) was developed. The auscultation revealed no respiratory sounds in left hemithorax. In her posterior-anterior chest X-ray, the left lung was seen as opaque.(figure-1) When the patient's intubation tube was controlled, it was found that the tube was further level than it should be. After correction of the level of the tube, the respiratory rate became normal and her pulse oxygen saturation 99% again. On her second chest X-ray; both lungs found to be normal.(figure-2) The patient who had generalized brain edema and skull base fracture was admitted to neurosurgery department and was discharged at 10th day of hospitalization.

Conclusion: Posttraumatic opaque lungs is often suggestive of massive hemothorax. In intubated trauma patients, unilateral main bronchus intubation can mimic hemothorax. In this condition, endotracheal tube placement and depth control should be made, if necessary, endotracheal tube should be placed to the proper position. Especially in the first place, even though during intubation, tube is placed right, patients moved reasons such as radiography and if this condition is improved, control of tube placement should be done first.

Keywords: Opaque hemithorax, trauma, endotracheal intubation

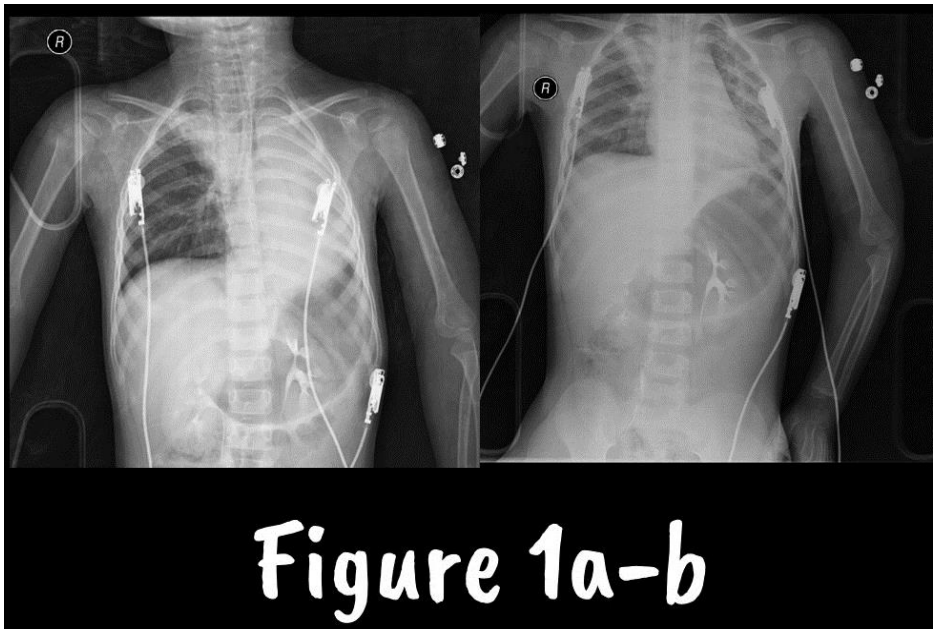

Figure-1a the left lung was seen as opaque.

Figure-1b Normal chest X-ray

Oral Presentation 10

Hereditary Angioedema Associated with Laryngeal Attack

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Objective: Hereditary angioedema (HAE) is an inherited deficiency or dysfunction of the C1 esterase inhibitor (C1-INH) protein manifested by abdominal pain due to visceral swelling of the gastrointestinal tract, cutaneous angioedema and/or oropharyngeal swelling without urticaria. Cutaneous angioedema presents by non-pitting and non-pruritic swelling of the skin which usually affects the face, limbs or genitals. Oropharyngeal swelling is a much less frequent manifestation result in laryngeal swelling for fewer than 1% of acute attacks. Laryngeal edema has been defined as a rare but potentially fatal clinical manifestation of HAE.

We report a case of upper airway swelling and laryngeal edema accompanied by swelling of the the uvula and the tongue related to an inherited deficiency in the protein C1-INH.

Case Report: A 48-year-old woman presented to the emergency department (ED) with a severe edema of the upper lip and swelling of the soft palate, including the uvula and the tongue (Figure 1). The patient had a feeling of tightness in the throat. She did not have shortness of breath or difficulty breathing and suffered only from dysphagia. There was no history of trauma, food allergy, and similar complaints in family and drug intake, such as an angiotensin-converting–enzyme inhibitor or an angiotensin II–receptor antagonist. The patient received immediate intramuscular epinephrine, as well as intravenous (IV) fluids and supplementation with IV antihistamines and steroids. But no clinical response or diminish in the size of the edema were noted. She experienced mild dyspnea approximately 2 hours later in the ED. A dose of 1000 U of human C1-INH protein concentrate (reconstituted in 10 ml) was then given intravenously at a rate of 1 mL per minute over 10 minutes. Clinical manifestations including oropharyngeal swelling rapidly improved and then resolved completely within 60 minutes following treatment with this medicinal product. Laboratory investigations including complement C4 and C1 esterase inhibitor levels demonstrated a level of C4 at 12.7 mg/dl (normal levels: 16–38 mg/dl), and of C1 esterase inhibitör at 14.3 normal levels: 18–32 mg/dl). A final diagnosis of HAE resulting from a deficiency in C1-INH protein was made. The patient was followed up in the ED and no recurrence of the edema was noted.

Conclusion: The administration of 1,000 U C1-INH protein concentrate is an effective and safe medicinal product for the management of HAE related to C1-INH protein deficiency in subjects presented with laryngeal attack in the ED.

Keywords: Hereditary angioedema, C1 esterase inhibitor (C1-INH) protein, oropharyngeal swelling laryngeal edema

Figure 1. Direct visualization of the upper airway showed edema of the upper lip, uvula and the tongue.

Oral Presentation 11

Aile Hekimliği Polikliniğine Başvuran Hastalarda Sigara İçme Oranları ve Nikotin Bağımlılık Düzeyleri

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Amaç: Aile hekimliği polikliniğine herhangi bir nedenle başvuran hastalarda sigara içme oranları ile sigara içenlerde nikotin bağımlılık düzeylerinin tespit edilmesi.

Yöntem: Kesitsel olarak planlanan bu çalışmada 2017 yılı Ocak ayında herhangi bir nedenle aile hekimliği polikliniğine başvuran 15 yaş ve üzeri tüm hastalara sigara içip içmedikleri soruldu. Sigara içtiğini beyan edenlere Fagerstrom Nikotin Bağımlılık Testi (FNBT) uygulandı. Hastaların cinsiyet, yaş, medeni durum, eğitim düzeyi, çalışma durumu ve sigarayı bırakmak isteyip istemediği sorularına verdiği yanıtlar demografik veriler olarak not edildi. Bu veriler ile nikotin bağımlılık düzeyi arasındaki korelasyon Mann-Whitney U testi ile incelendi. FNBT sonuçlarına göre toplam skor 0-2 ise çok az bağımlılık, 3-4 ise az bağımlılık, 5 ise orta derecede bağımlılık, 6-7 ise yüksek bağımlılık, 8-10 ise çok yüksek bağımlılık olarak kabul edildi.

Bulgular: Çalışma süresince polikliniğe başvuran 15 yaş ve üzeri 489 kişiden (307 kadın, 182 erkek) sigara içtiğini beyan edip FNBT uygulanan kişi sayısı 57 idi (19 kadın, 38 erkek, yaş ortancası 34, minimum 17, maksimum 70). Sigara içme oranı %11,6 idi (kadınlarda %6,1, erkeklerde %20,8). Çalışmaya katılanların FNBT toplam skorlarına göre ortanca değeri 4 idi (minimum 2, maksimum 8). Katılımcıların %56,1'inde az bağımlılık (n=32), %24,5'inde orta derecede bağımlılık (n=14), %8,7'sinde yüksek bağımlılık (n=5) tespit edildi. Çok az bağımlılık %7 (n=4), çok yüksek bağımlılık %3,5 (n=2) oranındaydı. Demografik veriler ile nikotin bağımlılık düzeyi arasında korelasyon saptanmadı.

Sonuç: Tespit edilen sigara içme oranları Türkiye ortalamasının altındadır. Sigara içenlerin yarısından fazlasında nikotin bağımlılığı az veya çok az düzeyindedir. Aile hekimlerinin sorumluluk almaları özellikle bu kişilerde sigara bırakma başarısını artıracaktır.

Oral Presentation 12

Weight Loss Suggesting Malignancy Resulted with Thyrotoxicosis

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Objective: In some cases mood, history and relatives of patients can make difficult to think us unbiased. Our aim was to aware physicians for differential diagnosis with a woman admitted with weight loss.

Case: A woman aged 63 admitted to the family physician outpatient clinic with loss of appetite, weakness, nausea and vomiting. Approximately 20 days ago she got some symptoms about upper respiratory tract infections. She has started to have nausea and vomiting. She mentioned that she has fever at that time. She had a weight loss about 7 kilos in 20 days. Her relatives mentioned that she has to look after her mother who is bedridden for a long time and she affected from this situation worse and worse every day. Her muscle and inguinal pain got worsen in the last few days. She admitted for these symptoms at another unit, 5 days Gentamicin IM for and one single dose of fosfomycin was given for urinary tract infection. At physical examination she looks fallen and anxious, her blood pressure was 110/70 mmHg, pulse 120/min, dehydrated. She had severe nausea. Because of her general impairment the patient has consulted to emergency department. After evaluation of the patient, in definitive diagnosis, feeding disorders as a result of depression, malignancies and thyrotoxicosis have been thought. While rehydrating her, laboratory tests resulted which can be seen at Table 1. Hemogram parameters and blood gas analyze were normal. With the diagnosis of thyrotoxicosis and acute renal dysfunction, the patient was admitted to the endocrine service. According to the records this patient has another application to emergency service department with the same symptoms, but after improving general situation, this patient has discharged without definitive diagnosis. Even the patient has warned to apply to outpatient clinic, she could not do this. She neglected her situation and came to emergency department with worsen status.

Conclusion: Differential diagnosis is certain for all situations. Even if you think physiological problems, you should exclude all organic diagnosis for making a healthy decision.

Table 1. Laboratory tests results

	Results	Normal range
Glucose (mg/dL)	106	74 – 106
BUN (mg/dL)	44	6 – 20
Creatinin (mg/dL)	1.35	0.51 – 0.95
GFR (mL/min/1.73 m²)	42	90 - 125
ALT (U/L)	109	0 – 35
AST (U/L)	83	0 – 55
GGT(U/L)	28	0 – 55
Alkaline phosphatase (U/L)	86	30 – 120
Amylase (U/L)	135	28 – 100
Total calcium (mg/dL)	10.7	8.8 – 10.6
Na (mEq/L)	139	136 – 146
K (mEq/L)	4.3	3.5 – 5.1
Mg (mg/dL)	2.25	1.7 – 2.55
TSH	<0.01	0.41 - 6.80
Free T3	23.81	2.97 – 4.46
Free T4	5.42	0.57 – 1.24

Oral Presentation 13

Epileptik Nöbeti Takip Eden Vertebra Kompresyon Fraktürleri: Olgu Serisi

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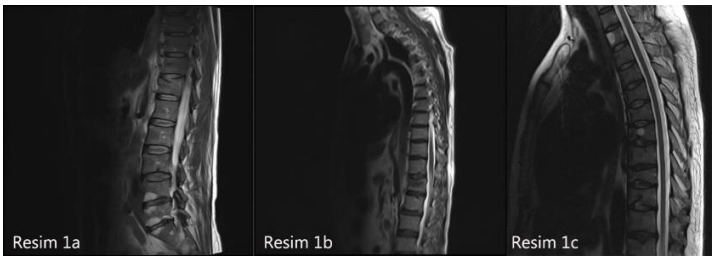
Giriş ve Amaç: Epilepsi hastalarında oluşabilecek iskelet sistemi kırıkları riskinin normal populasyona göre daha fazla olduğu bilinmektedir. Uzun süre antiepileptik ilaç kullanımına ve diğer sebeplere bağlı olarak epileptik hastalarda minör travmalarla bile kemiklerde kırık riski daha fazla olmaktadır. Ancak epilepsiye bağlı vertebral kemik kırıkları literatürde nadir olarak bildirilmiştir. Bu çalışmada epileptik nöbet sonucu gelişen vertebra kompresyon kırığı olan üç hasta sunulmaktadır.

Olgu 1: Çocukluğundan beri antiepileptik tedavi gören ve sekiz yıldır kullandığı karbamazepin adlı antiepileptik ilacı yaklaşık 45 gün önce bıraktığını ifade eden 37 yaşındaki erkek hasta uykusunda nöbet geçirdiği ve ardından çok şiddetli sırt ve bel ağrısı olduğu yakınmasıyla acil servise başvurdu. Fiziki bakıda vertebral kolon üzerinde hassasiyet dışında pozitif bulgusu olmayan, nörolojik bakısı da tamamen normal olan hastaya şüphe üzerine çekilen torakolomber spinal MRG'de, T12 vertebra korpusunda yükseklik kaybı geliştiği tespit edildi (Resim 1a). Hastaya nörolojik muayene bulgularının normal olması kırığın stabil kırık olarak yorumlanması nedeni ile cerrahi girişim planlanmadı. Destekleyici tedavi ile taburcu edildi.

Olgu 2: Adını hatırlamadığı ikili antiepileptik ilaç kullandığı öğrenilen, 54 yaşındaki kadın hasta geçirdiği jenarilize tonik klonik nöbet sonrası postiktal dönemde acil servise getirildi. Yüksekten düşme öyküsü olmayan, postiktal döneme bağlı şuur geriliği olan ve fiziki bakıya tam uyum sağlayamayan hastanın çekilen torakolomber spinal MRG'de L1 vertebrada kompresyon fraktürürü tespit edildi (Resim 1b). Nörodefisiti olmayan hastaya vertebroplasti uygulanarak şifa ile taburcu edildi.

Olgu 3: Nöroşirurji polikliniğine ayaktan başvuran 45 yaşında erkek hasta altı yıldır epilepsi tedavisi için fenitoin kullandığını, bir gün önce uyku esnasında nöbet geçirdiğini, o zamandan beri bel ve sırt ağrıları olduğunu ifade etmekteydi. Fiziki ve nörolojik bakısında özellik olmayan hastanın torakolomber spinal MRG'sinde T 4-6,8,9 ve vertebralarında multipl kompresyon fraktürleri mevcut(Resim1c) olan hastaya T6 ve 8 vertebroplasti uygulanarak taburcu edildi.

Sonuç: Epilepsi hastalarının nöbet sonrası gelişen vertebral kolon ağrılarının nörolojik ve radyolojik olarak iyi değerlendirilmesi ve gerekiyorsa BT ve/veya MRG gibi ileri görüntüleme yöntemlerine başvurulması uygun olacaktır. Ayrıca antiepileptik ilaçlar, osteoporoz ve beraberinde kemik kırıkları riskini artırabildiğinden bu hastaların periyodik olarak tetkik edilmesi ve gerekirse tedavilerinin planlanması önerilebilir.



Resim 1a-1b-1c de çeşitli seviyelerdeki vertebra kırıkları görülmektedir.

Oral Presentation 14

The Associatıon of Menengitis and Spontanean Pneumocephaly

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Introduction: Pneumocephaly is an important radiological finding that can be one of the signs of severe pathologies. The most common cause of pneumocephaly is trauma, and also iatrogenic may be due to tumors or infections. In this study, we present a case admitting the emergency department with the pneumocephaly detected in computerized tomography. The case has no trauma or no history of surgical intervention, and the headache.

Case: A 66-year-old female patient was admitted to the emergency room with a severe headache complaint of 2 days. In addition, the patient with 20 days of cough and postnasal discharge during this period received treatment for upper respiratory tract infection. CRP 15,1 mg / dL and WBC 13.500/mm3 were detected in the laboratory examination of the patient who was found to have frontal tenderness on physical examination, left ear otitis (tympanic membrane hyperemia, buckling), nuchal stiffness and postnasal discharge. The pneumocephaly was present in the tomography of the patient; a decrease in leukocyte and brain spinal fluid glucose was detected in the lumbar puncture examination performed with acute meningitis and encephalitis. The patient was hospitalized in infection intensive care unit with the preliminary diagnosis of acute bacterial meningitis. The patient with streptococcus pneumonia proliferation in blood culture and brain spinal fluid was discharged with recovery after about 1 month of antibiotherapy.

Conclusion: In the presence of nontraumatic (spontaneous) pneumococcal disease, central system infections should be considered in differential diagnosis.

Full Text Poster Presentation

Evaluation of Bone Demineralization in COPD Phenotypes

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Abstract

Objective: Diminished bone mineral density in patients with chronic obstructive pulmonary disease have increased risk for osteoporosis and its associated fractures. Even though the relationship between different phenotypes of chronic obstructive pulmonary disease and bone mineral density was not fully understood. The aim of this study was to evaluate bone mineral density in different phenotypes of chronic obstructive pulmonary disease and compare these outcomes with an age-correlated control group.

Methods: In this retrospective study 100 patients (emphysematous, chronic bronchitis and healthy control group) were participated. Participants underwent DXA absorptiometry to evaluate bone mineral density. Spirometric pulmonary function tests, 6-minute walk test, Bode index, and modified medical research council dyspnea score, body mass index and levels of calcium, vitamin D and parathormone were also evaluated. Comparative assessment of the findings was performed and statistical analysis was applied in present study.

Results: Patients with the emphysematous phenotype had significantly lower femur bone mineral density ($P = 0.05$), body mass index ($P < 0.05$), than chronic bronchitis phenotype. Inverse correlations were revealed between lumbar bone mineral density and modified medical research council dyspnea score. Statistical analysis was performed by the multivariate logistic regression analysis model test and Tukey tests ($p<0.05$). ANOVA analysis, the emphysematous group have two fold higher risk of osteoporosis and lower bone mineral density detected than other groups (OR 1.947, 95%CI (1.009–3.792), P=0.081; OR, 1.863 , 95%CI (1.027–3.274), P =0.037).

Conclusion: The evaluation of bone loss rate among groups, emphysematous phenotype had more risk in developing osteoporosis, low bone mineral density and a little less osteopenia than other groups.

Keywords: Bone Mineral Density; Body Mass index; Osteoporosis; phenotype, COPD

Introduction

Chronic obstructive pulmonary disease is interrelated with many comorbidities, osteoporosis has more importance in this disease group. Decrease in bone mass density (BMD) and the presence of possible fracture risk is a common symptom in patients with chronic obstructive pulmonary disease. Risk factors interrelated with these complications including smoking, calcium deficiency, and treatment with corticosteroids. Also osteoporosis and its related fractures are common and significantly destroy the quality of life and even respiratory function in patients with chronic obstructive pulmonary disease (1,2).

The prevalence of osteoporosis in patients with chronic obstructive pulmonary disease is higher than healthy individuals. This difference has been binded to the use of corticosteroids and lower ability to exercise in this population. The national osteoporosis risk assessment study has confirmed that the risk of fracture increases with decreasing of BMD, some recent studies reported a rate of osteoporotic fracture of 18 % and a small number of osteoporotic fracture cases can be occurred in the osteopenia group with long follow up periods. Also these studies have suggested that decreased bone mineral density (BMD) and destroyed bone quality lead to fractures in patients with chronic obstructive pulmonary disease. The gold standard for measuring bone density is dual energy X-ray absorptiometry (DXA). DXA is a two-dimensional method of measuring BMD; therefore, superimposed tissue can cause artifacts and inaccurate measurements. Osteoporosis is diagnosed when BMD is in standard deviations or more below the young adult mean (T-score ≤ -2.5), according to the evaluation criteries of World Health Organization (WHO) (3,4).

Chronic obstructive pulmonary disease is related to decreased BMD and increased risk of fracture, and also most related studies have been conducted on this disease. Individuals with chronic obstructive pulmonary disease has many risk factors for osteoporosis disease, including sedentary lifestyle, older age, vitamin D and calcium (Ca) deficiency. It is important for pulmonologist to be aware of prevalence in osteoporosis among chronic obstructive pulmonary disease patients and to evaluate these patients for possible fracture risk. Osteoporosis and other comorbidities can be overlooked when chronic obstructive pulmonary disease is evaluated only as a pulmonary disease (5-8).

In present study we evaluated the prevalence of osteoporosis in patients with two different phenotypes of chronic obstructive pulmonary disease (emphysematous versus chronic bronchitis) and compared these groups with an age-matched control group.

Material and Methods

Diagnostic criteria

The diagnosis of osteoporosis was based on WHO-recommended criteria: T-score less than -2.5 for bone density of the lumbar vertebrae on DXA [T = standard deviation of (measured value − peak bone mass)/(normal adult bone density)] (9).

Patient selection

This study was performed on followed COPD patients and healthy volunteers in the department of chest disease. Participants were divided into three groups: emphysematous, chronic bronchitis, and control. We were defined these phenotypes by applying high resolution CT (collimation of 1 to 2 mm) which have greater sensitivity and specifity.

Subjects and sample collection

Serum samples and DXA results were obtained from consecutive patients in the department of chest disease at the tertiary care Hospital from January 2011 through May 2014. All participants provided informed consent (n=100: 30 in the healthy control group, 30 in the emphysematous group, and 40 in the chronic bronchitis group.

Inclusion criteria

Inclusion criteria were determined before review of abstracts and articles. The inclusion criteria for the present study were as follows: female sex, post-menopausal, age over 40 years, and diagnosis of COPD (with the exception of the control group) as per to the criteria of the Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) and DXA examinations. Sixty patients had received inhaled steroids for more than 2 years as part of their therapy and 40 had not received inhaled steroids, all patients were ex-smokers and Turkish.

Exclusion criteria

Patients were excluded from the study based for the following criterias: (i) known comorbidity affecting bone mineral status, such as hemiplegia resulting from stroke, severe diabetes mellitus, and endocrinopathies such as thyroid and parathyroid disease, (ii) known malignancy with long-standing systemic steroid therapy, and (iii) autoimmune disease such as rheumatoid arthritis. Antiosteoporotic treatment was not given to any of the patients.

Ethical review

The present study was approved by the local ethics committee. Patients and volunteers provided by written informed consent for their attendant before enrollment.

DXA examination

DXA examination of the lumbar spine (L1–L3) was performed in a Hologic discovery QDR series densitometer (Hologic Inc, Bedford, MA). Patients were scanned in the supine position, with their knees held high and bent at a right angle and their calves resting on a cushion to reduce normal spinal lordosis, as proposed by the manufacturer. Patients wore light clothing during the examination. The device was calibrated daily, according to the manufacturer's instructions for quality control, and had a coefficient of variation of 1.0% for the spine phantom.

The examinations were reviewed by an experienced radiologist. Zones of sclerosis or wide osteophytes were excluded from the analysis. BMD was expressed in gr/cm2, and patient's *T*-scores were estimated using the national health and nutrition evaluation survey database, provided by the manufacturer. Vertebrae were classified by the WHO classification as normal if the *T*-score was −1.0 or higher, as osteopenic between −1.0 and −2.5, and as osteoporotic −2.5 or lower.

Clinical And Functional Assessment

Pulmonary function tests (spirometry)

Pulmonary function tests (PFTs) were done for all patients in the clinic. FEV1 and FVC were evaluated by a calibrated spirometer, PFTs were evaluated by an experienced technician in pulmonary laboratory with a ZAN500 spirometry device (SpireHealth GmbH, Oberthulba, Germany).All pulmonary function tests were performed with patients seated upright. Patients were directed by trained staff on proper use of the spirometer. Each measurement was repeated three to five times, with at least 1 min between inhalations. The best value from three successive tests was sustained. FEV1, FVC, and FEV1/FVC were measured by ATS criterias. COPD staging was done by GOLD criterias.

All participants with a forced expiratory volume in 1 sec (FEV1)/ forced vital capacity (FVC) ratio < 0.70 at screening spirometry underwent a bronchodilatation reversibility test performed with 0.4 mg of inhaled salbutamol (or equivalent) followed by spirometry 15 minutes later. The spirometry variables

evaluated included FEV1 (%, L), FVC(%, L), and FEV1/FVC(%) after this period.COPD was diagnosed according to internationally recognized guidelines based on clinical history, symptoms, and a FEV1/FVC ratio<0.70. The patient's disease status was classified according to predictive FEV1 values as mild (FEV1≥80%), moderate (50%≤ FEV1< 80%), severe (30%≤ FEV1< 50%), or very severe (FEV1<30%).

Six-Minute Walking Test (6MWT)

All patients applied the 6MWT by current guidelines. Heart rate proportion (HR) and instant oxygen saturation (SpO2) evaluated by pulse oximetry (Nellcor™, N-65™, Covidien AG, USA) were evaluated in baseline and repeated every minute until minute 6. The pulmonary therapist checked that the pulse oximeter device had an inception signal before beginning the tests. Patients already taking oxygen support in rest time after performing the 6MWT. 6MWT was defined as the maximal reached walking distance in room air (10).

Modified Medical Research Council (mMRC) dyspnea score

The mMRC, is a scale that rating a patient, include five stages that describe the total range of respiratory disability from none (Grade 0) to almost complete (Grade 4). Symptom evaluation to determine GOLD groupings (A–D) was carried out in each patients.

Measurements of BODE index for patients with COPD

The multidimensional BODE parameters (body mass index, degree of obstruction, dyspnea, exercise capacity) were calculated. Total score was evaluated, with 0 to 3 points assigned for each parameter.

Biochemical analyses

Venous blood samples were collected and centrifugated for PTH and Ca level testing. PTH levels were evaluated with an immulite 2000 systems device and Ca levels with an advia 1800 chemistry device. The average values were standardized and accepted (10–65 pg/mL for PTH and 8.60–10.00 mg/dL for Ca).

Statistical analysis

ANOVA analysis of variance was used to measure the overall differences between groups and Tukey's test was used to detect which differences were significant. The X2 test was performed to confirm the prevalence rates of osteopenia and osteoporosis in each group. A multiple logistic regression analysis model was used to compare the risk of developing osteopenia and osteoporosis in study groups according to age, BMI, Weight, pulmonary function results, smoking pack years, Ca, PTH, physical activity, Length of hospital stay, Number of hospital visits, Inhaled and systemic corticosteroid. Statistical analyses were performed with SPSS, version 20.0 (statistical package for the social sciences, Apple OS). Data are expressed as mean ± SD unless otherwise stated. All hypothesis tests were two sided. P values less than 0,05 were considered statistically significant.

Results

Subject characteristics

One hundred participants were enrolled in this study, and underwent DXA examination of the lumbar vertebrae (L1–L3). The mean age ± standard deviation of our patients was 63.1 ± 8.4 years (age

range: 42–66 years). Based on FEV1, 5 patients were classified as GOLD stage I, 35 as stage II, 18 as stage III, and 2 as stage IV (Table 1).

Significant differences in, and FEV1(%), FEV1/FVC, were observed among the groups. Although it was not statistically significant, patients in the emphysematous group also had lower Ca and PTH levels, tended to be older, longer smoking history and statistically significantly poorer pulmonary function results than chronic bronchitis and control groups ((p= 0,034, p= 0,027 and p= 0,041, respectively), P<0,05). Differences in other characteristics among the groups are shown in (Table 1).

BMD and T-scores and differences in prevalence rates of osteopenia and osteoporosis in groups

The mean femur, femur neck and lumbar BMD values were lower in the emphysematous phenotype than other groups (Table2), T-scores (femur, lumbar) were used to diagnose osteopenia and osteoporosis. The emphysematous group had lower T-scores in mostly parts (femur, lumbar areas), and tended to have lower T-scores in mostly parts than other groups. The osteopenia prevalence rates in the control, emphysematous and chronic bronchitis groups were respectively 48.7%, 49.1% and 55.3%; the osteoporosis prevalence rates were respectively 14.2%, 26.4% and 21.7% (P <0.05) (Figure).

Odds ratios of osteopenia, osteoporosis and low BMD among the groups

The chronic bronchitis phenotype group had more risk in developing osteopenia than other groups. The odds ratio (OR) for osteoporosis tended to be high in all models. No difference in the risk of developing

osteoporosis was observed between the control and chronic bronchitis groups, However significant difference detected between the emphysematous and chronic bronchitis groups (Table 3). The emphysematous group had a higher risk of low BMD than other groups, even after adjusting for age, smoking pack year history, vitamin D, Ca, PTH and FEV1 (OR 1.863, 95% confidence interval [CI] 1.027–3.274, P = 0.037). There is no difference in risk was detected between the control and chronic bronchitis groups and between the emphysematous and chronic bronchitis groups for low BMD (Table 4).

On a per-patient basis, according to the mean T value of the DXA measurements for lumbar, femoral neck, and femur, the emphysematous phenotype group had significantly higher prevalence of osteoporosis than the other groups. In contrast, the chronic bronchitis phenotype group had the same higher prevalence in osteopenia than the other groups ($p < 0.05$; Table 2).

Our analysis showed a relationship between demographic and clinical measurements in COPD phenotype. There were no significant differences in patient age or blood Ca levels among the groups. However there were statistically significant differences in BMI, FEV1, and FEV1/FVC results among the groups (Table 1).

Discussion

In the present study, we aimed to investigate the prevalence of osteoporosis in patients with two different phenotypes of COPD. We correlated our findings with DXA measurements, which are considered the gold standard for osteoporosis diagnosis (11–13).

Patients with the emphysematous phenotype had a higher proportion of prevalence in osteoporosis than osteopenia. On the other hand the prevalence of osteopenia was higher in chronic bronchitis phenotype. These results are in accordance with a published meta-analysis, which reported an

osteoporosis prevalence of 43.7% and an osteopenia prevalence of 56.3% among patients with COPD. Most of the studies included in that meta-analysis used DXA measurements. A recent publication by Jaramillo et al. confirms our finding that COPD and smoking-pack years are combined risk factors that may influence negatively affect BMD (14–16).

According to our results, there is a high prevalence of low BMD according to DXA measurement among our patients. Our findings showing the clinical difference of emphysematous phenotype from other groups in agreement with previous studies and support the importance of this phenotype.

In the present study, severity of osteoporosis according to femoral neck T-score increased in emphysematous phenotype. In other words, reduction of FEV1 in patients was related with low levels of bone mineral density. The etiology of osteoporosis and osteopenia in COPD is complicated and may subscibe to its physio-pathogenesis. Also systemic inflammation can play an important role in detecting a progressive BMD decreasing. Also systemic inflammation is especially related to the activation of osteoclastogenesis by way of osteoprotegerin/receptor activator of nuclear factor. kB (RANK)/ RANK ligand (RANKL) system (17).

Moreover, some novel in vitro and in vivo experimental researchs have noticed that the noradrenergic activation in beta-2 receptors ready on osteoblasts cause to production of RANKL with increased osteoclastogenesis and diminished bone mineral density (18). Although, two comprehensive studies have excluded an higher risk of decreasing in bone mineral density in patients who were treated with inhaled beta-2 agonists, suggesting that the seriousness of the underlying causes in pulmonary disease, rather than the use of beta-2 agonists, may play a role in the aetiology of fracture (19,20).

Also Watanabe et al. approached to this disease by pulmonary function tests, found that FEV1/FVC was the predictor for existence of bone fracture in COPD, and also lower FVC, higher FEV1 was significantly associated with bone fractures and BMD decrease. Also they trust that these findings point out a potent relationship among COPD and osteoporosis. On the other hand, we were evaluated the osteporosis and osteopenia by the evaluation of phenotypes like a bit diferent angle of the same trigon, our findings are correlate with its results (21).

Graat-Verboom et al. researched and compared the society of COPD patients with osteoporosis to COPD patients without osteoporosis and found that decreasing in BMI and increasing in RV%TLC (residual volume as the rate of total lung capacity) results have increased the risks for osteoporosis, also overweight and obese BMI values were found protective for osteoporosis. According to our results its outcomes correlate with our outcomes partially however we were determined the different pulmonary parameters of FEV1, FVC, FEV1/FVC and approached to this disease by these phenotype outcomes (22).

In present stıudy, a significant relationship was found between BMI and osteoporosis in femoral neck based on T-score, such that a reduction in BMI was shown to be associated with increased severity of osteoporosis. As a result of this relationship BMD is directly associated with BMI and patients with higher BMI have higher BMD. Nuti and his colleagues also found similar results and showed that BMD in COPD patients was low and correlated pulmonary disease severity (23-25). At the same time Bon et al. detected that patients who have diagnosed solo radiographic emphysema with COPD is the strongest predictor and has highly significant relationship with low BMD in smoker society with various grades of airway obstruction and inflammation. This outcomes are compliance with our findings (26).

The mechanism of the relationship between low BMI and osteoporosis is not fully understood in patients with COPD. It is probably due to the increase in inflammatory processes, the decrease in physical activity and using inhaled and oral corticosteroids. Therefore, osteoporosis is considered as a major problem in patients with COPD. This can cause multiple fractures, reduce pulmonary capacity and trigger the adverse effects of COPD in patients. Therefore identifying the commmon risk factors for COPD is essential (27-30).

In a research study applied by Vrieze et al, found that low BMD is oftenly existence in COPD. In addition to sophisticated stage of COPD, low BMI and low FFM (fat free mass) are the most important predictors and risk factors for the presence of low BMD. We were reached to similar decisions by assessing the subtypes of COPD, with a different point of view (31). On the other hand Chubachı et al. approached genetically to this disease by the way of LRP5 A1330V (low-density lipoprotein receptor-related protein 5) polymorphism which was an independent risk factor for low BMD in emphysematous COPD patients, found that the genetic efficacy of LRP5 A1330V polymorphism in COPD patients is related to low BMD. These results are helped us to look by a new perspective (32).

Our results show that emphysematous phenotype had mostly lower T-scores than others; the osteoporosis prevalence rates were two-fold higher in emphysematous phenotype patients than others, even after adjusting for PFT, 6MWT, MMRC, BODE, PTH, and DXA. A different point of view by Silva DR et. al. assessed the prevalence of osteoporosis in COPD patients, found that significant positive relationship between femoral-neck T-score with pulmonary function test results, BMD and BMI, on the other hand found a significant opposite connection between femoral-neck T-score and BODE index. Whereas in our research femur, femur neck, lumbal BMD and T score of this parameters were studied with phenotypes of COPD. We have believe that both of these studies indirectly reached the similar results (33).

The use of corticosteroids in these patients is also considered as another cause of low bone density (34, 35). This was examined in the present study as well, and a significant relationship was observed between the osteoporosis in femoral neck based on T-score. In other words, by increasing the systemic corticosteroid use, resulting as a increased risk in osteoporosis. In the TORCH study carried out by Ferguson et al, is similar with us and detected no significant effect on bone mineral density for inhaled corticosteroids (36).

Moreover Jaramillo et al. found in their cohort study of smoker population with or without COPD that, emphysematous phenotype of COPD is related with lower vBMD (volumetric bone mineral density) and lead to diminished bone density. As a result of this, they decided that smoking increase the risk for decreasing bone mineral density. However we did not approached to this disease by the way of smoking also our statistic outcomes are not significant in smoking (16). In contrast, Nuti et al. showed that both severity of COPD and using inhaled glucocorticoid therapy increase the risk of vertebral fractures (25). In a similar study of Dam et al. found that patients with COPD or asthma using inhaled corticosteroid had the lowest amount of BMD, and the risk of osteoporosis in their bones was two times more compared to those without COPD and asthma (37).

In present study, a significant relationship was found between BMI and osteoporosis in femoral neck based on T-score, such that a reduction in BMI was shown to be associated with increased severity of osteoporosis. However, no association was observed in T- score of femur and lumbal regions.

Cifuentes et al. and Ozalevli et al, were found that lower BMI values were associated with higher osteoporosis rates among patients (38,39), its results are similar with us.

Another study by Yang et al. concluded that proximal femur fracture risk and osteoporosis in postmenopausal women who walked at least 4 hours per week was lower than walked 1 hour per week. When we compared the groups according to osteoporosis prevalence, the emphysematous group had the highest prevalence, consistent with the findings of Yang et al. due to shorter walking distance capacity (40). On the other hand Bolton et al reported that the different anthropometric sizes (BMI, %IBW (ideal body weight)) which show the patients nutritional situation is informative and when it is diminished it leads more risk for osteoporosis in COPD society (41).

Comparison of groups according to DXA measurements accurately predicted osteoporosis and osteopenia risks. The classification of our patients into groups according the GOLD stage showed osteoporosis findings similar to those of the TORCH study (Towards a Revolution in COPD Health), which included 6112 patients with COPD by Heijdra et al (42).

Our findings indicate that COPD phenotype and BMI correlated with the prevalence of osteoporosis, consistent with previous findings in the literature. The TORCH study demonstrated a higher prevalence of osteoporosis and osteopenia at baseline in patients with spirometrically confirmed COPD. As with the DXA measurements, which were related to the COPD phenotypes evaluated in this study, the parameters differed significantly between the two clinically identified COPD phenotypes. A significantly lower BMI and more destroyed pulmonary function were more common in the emphysematous group. The study of Cote et al. found similarly that the BODE index is a sensitive method to evaluate COPD phenotype and progression which evaluates the PFT, 6MWT, mMRC parameters (43).

However present study has some limitations. Firstly, recall bias and incorrect diagnosis cannot be ruled out, but misdiagnosis of COPD was minimized by including only patients who had been diagnosed with COPD before the age of 40 years so the number of participants remained limited. Secondly, the use of inhaled corticosteroids (ICS) and systemic corticosteroids (SCS) as possible cause for decrease in BMD could not be confirmed. ICS remains controversial as a risk factor for osteoporosis, however SCS are clearly a risk factor, as the study was retrospective and individuals were surveyed using a questionnaire, the use of ICS and SCS could not be accurately evaluated. Although this may affect the results, the findings are important, as they confirm that decrease in BMD on emphysematous group more severe than others. And lastly, we could not confirm the clinical outcomes (e.g,fractures or death) of a severe decrease in BMD in emphysematous group patients; however, these patients may be assumed to have similar outcomes with chronic bronchitis group. Follow-up studies are needed to verify our results.

Conclusions

Differences in BMD were found among the phenotypes. Patients with emphysematous phenotype had lower T-scores than those with other phenotype. Osteopenia and osteoporosis prevalence rates were higher in emphysematous group patients than other groups. Especially, emphysematous group patients had approximately two-fold higher risk of developing osteoporosis and low BMD than chronic bronchitis group patients. Further studies need to be performed and these results indicate that clinicians managing COPD patients should actively assess and manage decrease in BMD.

Disclosure

The authors have no potential conflicts of interest to disclose

Statement of informed consent

Informed consent was obtained from all patients for inclusion in the study.

Statement of human and animal rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as second revised in 2013.

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Figure legend:

Table 1: Demographic and clinical data according to COPD phenotype

Table 2: Bone mineral density of COPD patients and controls

Table 3: ORs for osteopenia and osteoporosis among the obstructive lung disease groups

Table 4: ORs for low BMD among the obstructive lung disease groups

Figure: Prevalence rates of osteopenia and osteoporosis in obstructive lung diseases

Table 1. Demographic and clinical data according to COPD phenotype

	Emphysematous n:30	**ChronicBronchitis n:30**	**Control n:40**	**P Value**
Age* (years)	65,3±10,13	63,13±9,62	63,10±7,54	0,836
BMI* (kg/m²)	22,6±4.32	26,7±4,09	27,7±4,39	0,028
Weight,kg	60.4±7.91	61.8±10.47	60.72± 9.34	0,691
FEV1(%)	88,2±16,42	89,8±17,82	98,5±17,77	0,034
FVC (%)	92.2± 8.34	90.7±12.64	82.75±15.99	0,027
FEV1/FVC*(%)	58,6±11,27	58,4±8,63	79,3±6,94	0,041
Smoking pack years (pear year)*	42,06±18,83	35,16±16,50	13,12±10,46	0,758
Ca (mg)	8,96±0,46	9,42±0,63	9,15±0,42	0,592
PTH (pg/ml)	58,66±27,98	62,65±19,15	65,14±20,55	0,707
Vitamin D, ng/ml	18.44± 4.97	20.82± 7.68	24.19± 6.53	0.375
Physical activity (MET-hours/week)*	8.7 (4.4-17.5)	11.2 (6,7- 23.7)	15,3(8,4-28,6)	0,037
Length of hospital stay (days) ± SD	51.4 ± 22.5	41.4 ± 16.2		0,035
Number of hospital visits ± SD	48.2 ± 25.7	35.8 ± 15.4		0,024
Inhaled corticosteroid(ICS)	25 (28.3%)	42 (43.7%)	21 (23,4%)	0.42
Systemic corticosteroid(SCS)	2 (2.4%)	4 (4.2%)	3 (3.5%)	0,69
COPD/Stage 1(mild)	2 / 6,6 %	3 / 30 %		
Stage 2(moderate)	17/ 56,6%	18 / 60 %		
Stage 3 (severe)	10/ 33,3%	8 / 26,6 %		
Stage4(very severe)	1 / 3,3 %	1 / 3,3 %		

$p < 0.05$, statistically significant
BMI: Body mass index; Ca: Calcium; PTH: Parathormone, MET = Metabolic equivalent hours,

Table 2. Bone mineral density of COPD patients and controls				
	Emphysematous n:30 mean ± SD	**Chronic Bronchitis** n:30 mean ± SD	**Control** n:40 mean ± SD	**P value**
Femur BMD	0,86±0,18	0,91±0,12	0,94±0,16	0, 329
Femur neck BMD	0,72±0,15	0,78±0,10	0,75±0,15	0,034
Lumbar BMD	0,84±0,17	0,90±0,14	0,87±0,17	0,294
Femur BMD Tscore	-0,67±0,39	-0,46±0,92	0,41±0,15	0,117
Femur neck BMD T score	-1,37±1,18	-0,98±0,79	-1,31±1,08	0,027
Lumbar BMD T score	-1,24±1,12	-1,22±0,81	-1,04±1,05	0, 324

Table 3 ORs for osteopenia and osteoporosis among the obstructive lung disease groups				
	Osteopenia		**Osteoporosis**	
	OR(95%CI)	**P value**	**OR(95%CI)**	**P value**
Model 1				
Control	1		1	
Chronic bronchitis	0.584 (0.252–1.250)	0,115	0.432 (0.246–1.083)	0,077
Emphysematous	1.561 (0.918–2.861)	0,082	1.267 (0.657–2.766)	0,482
Model 2				
Control	1		1	
Chronic bronchitis	0.689(0.348–1.386)	0.348	0.691 (0.277–1.712)	0.394
Emphysematous	1.931 (1.095–3.344)	0.047	1.677 (0.733–3.574)	0.202
Model 3				
Control	1		1	
Chronic bronchitis	0.728 (0.345–1.384)	0.343	0.797 (0.355–2.023)	0.569
Emphysematous	1.946 (1.112–3.402)	0.038	1.892 (0.854–4.276)	0.148
Model 4				
Control	1		1	
Chronic bronchitis	1.152 (0.326–3.921)	0.837	0.342(0.038–4.497)	0.397
Emphysematous	2.067 (1.047–3.842)	0.046	2.045 (1.076–3.829)	0.041
Model 5				
Control	1		1	
Chronic bronchitis	1.181 (0.327–4.039)	0.784	0.349 (0.024–4.995)	0.349
Emphysematous	2.081 (1.071–3.828)	0.048	1.931 (0.661–5.486)	0.257
Model 6				
Control	1		1	
Chronic bronchitis	1.232 (0.347–4.286)	0.757	0.264 (0.034–3.948)	0.364
Emphysematous	1.947(1.009–3.792)	0.043	2.283 (0.761–7.343)	0.157

Table 4 ORs for low BMD among the obstructive lung disease groups		
	OR (95%CI)	**P value**
Model 1 Control **Chronic bronchitis** **Emphysematous**	1 0.547 (0.286–1.052) 1.561 (0.894–2.481)	 0,142 0,167
Model 2 Control **Chronic bronchitis** **Emphysematous**	1 0.632 (0.341–1.320) 1.892 (1.077–3.281)	 0.271 0.045
Model 3 Control **Chronic bronchitis** **Emphysematous**	1 0.671 (0.317–1.369) 1.928 (1.103–3.422)	 0.324 0.042
Model 4 Control **Chronic bronchitis** **Emphysematous**	1 1.137(0.311–3.486) 1.976 (1.101–3.859)	 0.881 0.041
Model 5 Control **Chronic bronchitis** **Emphysematous**	1 1.117 (0.358–3.813) 2.145 (1.077–3.901)	 0.864 0.048
Model 6 Control **Chronic bronchitis** **Emphysematous**	1 1.203 (0.317–4.131) 1.863(1.027–3.274)	 0.801 0.037
Model 1*Adjusted for PFT Model 2* Adjusted for PFT,6MWT Model 3* Adjusted for PFT,6MWT,mMRC Model 4* Adjusted for PFT,6MWT,mMRC,BODE Model 5* Adjusted for PFT,6MWT,mMRC,BODE, Vitamin D, PTH Model 6* Adjusted for PFT,6MWT,mMRC,BODE, Vitamin D, PTH, DEXA OR=odds ratio; CI=confidence interval; COPD=chronic obstructive pulmonary disease; PTH = parathyroid hormone; PFT=Pulmonary function test, exact p value is = 0.05		

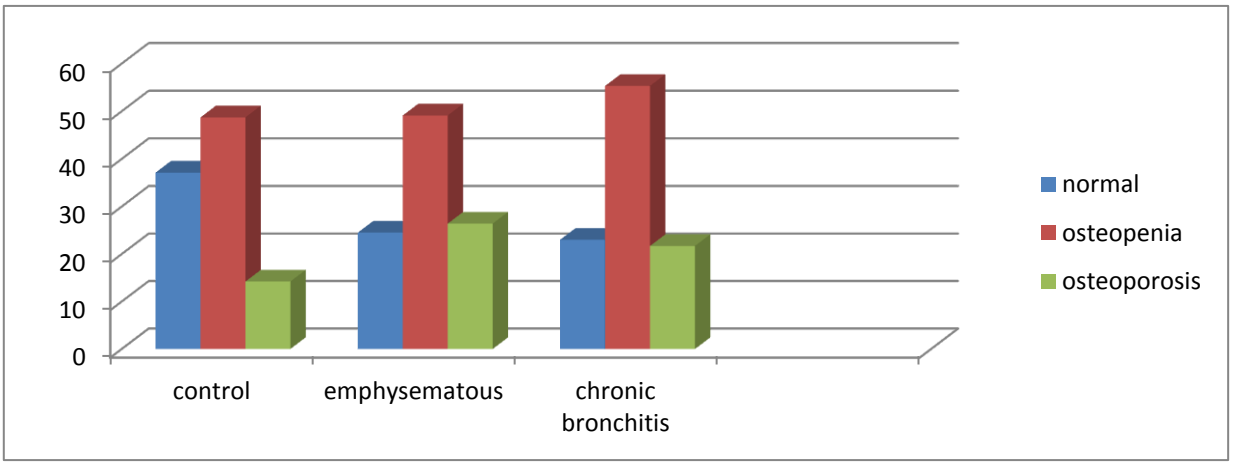

Figure: Prevalence rates of osteopenia and osteoporosis in obstructive lung diseases. COPD=chronic obstructive pulmonary disease.