


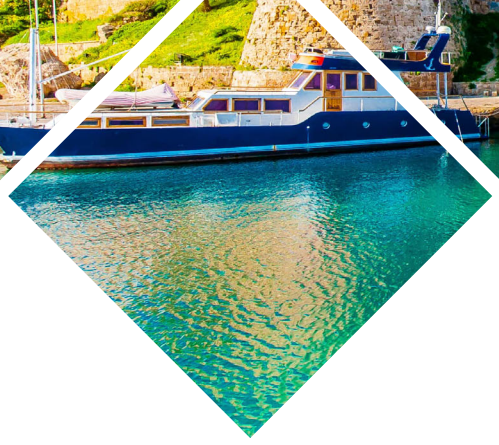


EPAT Emergency Physicians Association of Turkey

SSEP

UKRAINE ASSOCIATION OF CONTINUING PROFESSIONAL EDUCATION OF DOCTORS AND PHARMACISTS

9TH INTERNATIONAL EMERGENCY AND INTERNAL MEDICINE CONGRESS

17 - 20 November 2022

Acapulco Resort Convention SPA Hotel
Turkish Republic Of Northern Cyprus

ETHICON event & congress

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BİLİMSEL PROGRAM

17 November 2022 Thursday

Time	Subject and Speakers
14.00-16.00	CHECK-IN TO HOTEL
16.00-18.00	**Turkish Republic of Northern Cyprus - Republic of Turkey** **Republic of Azerbaijan - Republic of Georgia** **Ukrainian People's Republic and the Republic of Serbia – Republic of Nothern Macedonia Emergency Medicine and Internal Diseases Workshop** Prof. Dr. Başar CANDER Dr. Teona VARSHALOMIDZE Prof. Dr. Yurii VDOVYCHENKO Assoc. Prof. Dr. Özlem BİLİR Dr. Tatjana RAJKOVIC Dr. Vesna KRSTEVSKA Dr. Yonca MORRİS
19.00-22.00	DINNER

18 November 2022 Friday- Hall A

Time	Moderator	Subject and Speakers
09.00-09.45	**OPENING SPEECHES** Prof. Dr. Başar CANDER *President of EPAT* · Dr. Mehmet Gökhan KARA *President of AKORT* · Prof. Dr. Bumin DÜNDAR *President of PUADER* · Prof. Dr. Nevrez KOYLAN *President of SYHD* · Dr. Ömer TAŞARGÖL *President of NCTR TMC*	
09.45-10.30	GENSENTA **Satellite Symposium**	**Red Flags for Backache?** Prof. Dr. Belgin Erhan
10.30-11.00	COFFEE BREAK	
11.00-12.00	Ass. Prof. Fatma TORTUM	**Musculoskeletal Pain Management in Geriatric Patients** Assoc. Prof. Dr. Özlem BİLİR
12.00-12.30	Prof. Dr. Mehmet GÜL	**When and How Should We Intervene in Hyperglycemia in the Emergency Medicine** Ass. Prof. Fatma TORTUM
12.30-13.30	LUNCH	
13.30-14.30	Prof. Dr. Murat AKSOY Dr. Esin ŞENER	**Risk Assessment in Metabolic Diseases and the Obesity Pandemic** Prof. Dr. Kerim GÜLER Prof. Dr. Nevrez KOYLAN
14.30-14.45	COFFEE BREAK	
14.45-15.30	Dr. Mehmet Gökhan KARA	**How Does Modern Medicine Evaluate Herbs and Food Supplements?** Prof. Dr. Yağız Üresin
15.30-16.00	Prof. Dr. Başar CANDER	**Approach to the Patient With Hypertension** Doç. Dr. Mehmet Nuri BOZDEMİR
16.00-16.30	Dr. Ömer TAŞARGÖL	**Septic shock in the Emergency Medicine** Dr. Ziba Yücel
16.30-17.00	Dr. Ömer TAŞARGÖL	**Diagnostic Imaging in Sepsis** Dr. Sinem ŞIĞIT İKİZ

BİLİMSEL PROGRAM

18 November 2022 Friday- Hall B

Time	Moderator	Subject and Speakers
10.30-11.30	Assoc. Prof. Dr. Özlem BİLİR	**ORAL PRESENTATIONS**

19 November 2022 Saturday - Hall A

Time	Moderator	Subject and Speakers
09.00-11.00	Prof. Dr. Mehmet Hakan KARPUZ Prof. Dr. Kubilay ÜKİNÇ	**Current Overview of the Patient with Hypertension and Diyslipidemia** Prof. Dr. Mehmet Hakan KARPUZ Prof. Dr. Kubilay ÜKİNÇ
11.00-11.30	COFFEE BREAK	
11.30-12.00	Prof. Dr. Behçet AL	**Who Needs an MRI and When?** Doç. Dr. Erdal TEKİN
12.00-12.45	Doç. Dr. Mehmet Nuri BOZDEMİR	**Over Active Bladder Treatment** Doç. Dr. Özlem BİLİR
12.45-14.00	LUNCH	
14.00-15.00	Prof. Dr. Mehmet GÜL Prof. Dr. Behçet AL	**Heart Failure Management in Emergency Medicine** Prof. Dr. Behçet AL **Should We Avaluate Displidemia in Emergency Medicine** Prof. Dr. Mehmet GÜL
15.00-15.30	Doç. Dr. Özlem BİLİR	**Management of Pyelonefrit** Doç. Dr. Erdal TEKİN
15.30-16.00	COFFEE BREAK	
16.00-16.30	Doç. Dr. Mehmet Nuri BOZDEMİR	**Iatrogenic Hypoglycemia in the Emergency Medicine** Ass. Prof. Fatma TORTUM
16.30-17.00	Prof. Dr. Behçet AL	**Rational Use of Antibiotics** Doç. Dr. Özlem BİLİR
17.00-17.20	Dr. Vugar ZAMANOV	**Geriatric Patient Management in the Emergency Department** Şeyda AMET

20 November 2022 Sunday - Hall A

Time	Moderator	Subject and Speakers
09.00-11.30	Prof. Dr. Başar CANDER	**What has Changed in the 6th Wave Effect of Covid-19 in Heart Diseases?** Lec. Dr. Mehmet KOŞARGELİR Assoc. Prof. Dr. Özlem BİLİR

SÖZEL 1

KONTRAST NEFROPATİSİNİ BİLGİSAYARLI TOMOGRAFİDE GÖRMEK

İsmail ATAŞ[1], Özlem BİLİR[2]
1 Rize Devlet Hastanesi Acil Kliniği, Rize, Türkiye
2 Recep Tayyip Erdoğan Üniversitesi Tıp Fakültesi Acil Tıp A.D., Rize, Türkiye

GİRİŞ

Kontrast maddeler yapılarına göre iyonik ve non-iyonik veya osmolaritelerine göre iki gruba ayrılır. Kliniklerde tanı ve tedavi amaçlı en çok kullanılan, non-iyonik düşük osmolaliteli kontrast madde olan iohekzolün osmolalitesi 600-700 mOsm olup, plazma osmolalitesinden daha yüksektir. Bu yüzden tüm kontrast maddeler nefropati riski taşımaktadır (2,3).

Kontrast nefropatisinin kesin mekanizması iyi anlaşılamamış olsa da genel kabul gören mekanizma uygulama sonrasında meydana gelen ani vazokonstriksiyon renal kan akımının azalmasına neden olmaktadır. Ayrıca reperfüzyon sonrası açığa çıkan serbest oksijen radikalleri böbrek hasarına yol açabilmektedir. Ayrıca kontrast maddenin direk tübüler hasara neden olması yine bahsedilen başka bir mekanizmadır (4).

Kontrast madde hastane kaynaklı böbrek yetmezliği nedenlerinin renal perfüzyon bozukluğu ve nefrotoksik ilaçlardan sonra üçüncü en sık nedenidir. Buna en fazla neden olan iatrojenik neden koroner anjografi ve perkütan koroner girişimlerdir (5). İkincisi ise kontrastlı BT çekimleridir.

Kontrast nefropatisi için üç temel bileşen şarttır; serum kreatin değerlerinde nıspi veya mutlak artış, kreatin artışı ile kontrast madde arasında herhangi bir ilişki ve böbrek yetmezliğine neden olabilecek diğer nedenlerin dışlanması. Herhangi bir kontrast maddeye maruz kaldıktan 48-72 saat sonra bazal kreatin değerinin %25 artması veya mutlak kreatin değerinin 0,5 mg/dl veya daha fazla artması olarak tanımlanmaktadır. Nefropati gelişimi için ilk 24 saat çok önemlidir. Stevens ve ark.'nın yaptığı randomize PRINCE çalışmasında vakaların %80'inin kreatin artışı kontrast maruziyetinden sonraki 24 saat içerisinde oluşmaktadır (6).

Kontrast maddenin yarı ömrü yaklaşık 2 saat olup, 4. saatte %75'i, 12 saat sonra ise % 98'i vücudu terk eder (7). Bilinen böbrek yetmezliği olan hastalarda ise bu süre uzayabilmektedir.

OLGU

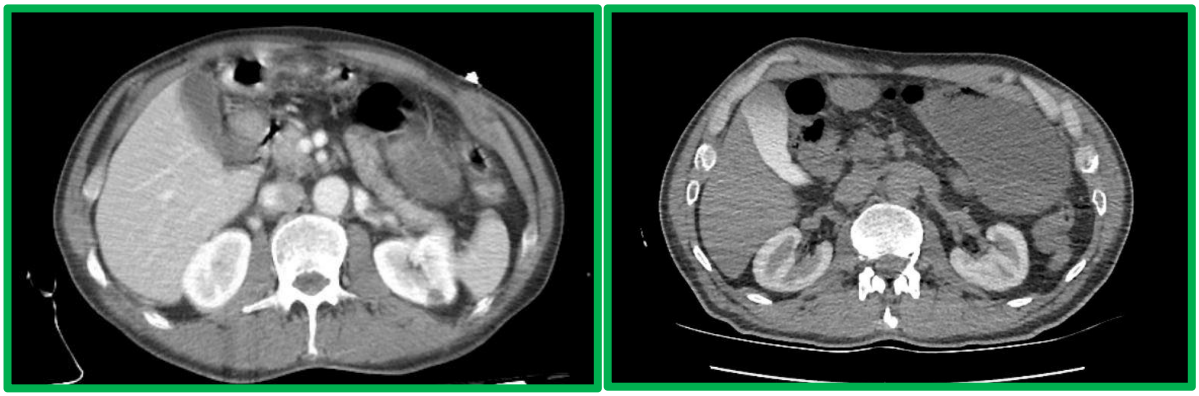
65 yaşında erkek hasta bulantı ve kusma nedeniyle acil servise başvurdu. Bilinen kronik obstrüktif akciğer hastalığı (KOAH) ve koroner arter hastalığı (KAH) var. Asetilsalisilik asit, tiotropium bromür inhaler, salbutamol nebül ve evde uzun süreli oksijen tedavisi kullanıyor. 24 saat önce yüksek enerjili travma öyküsü mevcut. Dış merkezde iohekzol kontrast maddesi kullanılarak toraks ve abdomen BT çekimi yapılmış, takipleri sonrasında akut patoloji saptanmayan hastaya deksketoprofen ve parasetamol reçete edilerek taburcu edilmiş.

Fizik muayenede; vital bulguları stabil. Bilinç açık, oryante-koopere, GKS:15. Sağ orbita etrafında ekimoz ve sol skapulada palpasyon ile hassasiyet saptandı. Diğer sistem muayeneleri olağandı.

Hastanın laboratuvar tetkiklerinde kreatinin:2.47 mg/dl, üre:57 mg/dl, glomerüler filtrasyon hızı (GFR):26 ml/dk/m^2, pH:7.22, potasyum:5.9 mmol/l, bikarbonat:22 mmol/l, laktat:2.6 mmol/l,

troponin I:910 pg/ml, CK-MB:34 ng/ml olarak saptandı. 24 saat önce alınan tetkiklerinde ise kreatinin:0,67 mg/dl olarak saptanmış.

Hastaya foley sonda takılmış idrar çıkışı 0.2 ml/kg/saat olarak belirlenmiş ve anürik olduğu farkedilmiştir. Postrenal patolojilerin ekartasyonu için kontrastsız abdomen BT çekilmiştir. Abdomen BT'de bilateral renal korteks, mesane ve safra kesesinde yoğun kontrast madde görülmüş ve 24 saat önce verilen kontrast maddenin hala vücutta kaldığı anlaşılmıştır. Travmaya bağlı veya postrenal akut patoloji saptanmamıştır.



Şekil 1. 24 saat önce travma nedeniyle alınan kontrastlı abdomen BT görüntüsü (A). 24 saat sonra alınan kontrastsız abdomen BT'de safra kesesinde ve bilateral böbreklerde kontrast görüntüsü (B).

Kontrast nefropati tanısı ile nefroloji servisine interne edilmiştir. Serviste nefrotoksik ajanlar kesilmiş, 6 gün efektif hidrasyon ile kreatin bazal değerine ulaşmış, ağrıları için tramadol reçete edilerek tam iyilik hali ile taburcu edilmiştir.

TARTIŞMA

Kontrast madde tanısal ve girişimsel prosedürlerde son yıllarda daha sık kullanılmaktadır. Özellikle ülkemizde acil servislerde çekilen kontrastlı BT oranı dünya ortalamasının üzerindedir. Ülkemizde acil servislerin yoğun kullanımı nedeniyle hekimlerin tanı atlamaması ve malpraktisten korunmak adına travma hastalarında gereksiz ve fazla sayıda kontrastlı BT istemi yapmasına neden olmaktadır. Bunun sonucu olarak kontrast madde komplikasyonlarından biri olan nefropati sıklığının arttığı düşünülmektedir.

Kontrast nefropatisi, herhangi bir kontrast maddeye maruz kaldıktan 48-72 saat sonra bazal kreatin değerinin %25 oranında artması olarak tanımlansa da, Stevens ve ark.'nın yaptığı randomize PRINCE çalışmasında bu artışın 24 saatte daha sık olduğu bildirilmiş. Bizim vakamızda da PRINCE çalışmasına paralel bir şekilde 24 saat içerisinde bazal kreatin değerinin %400 oranında arttığı görülmüştür.

Kontrast maddenin %98'inin 12 saatte vücuttan atıldığı, bilinen böbrek yetmezliği olan hastalarda ise bu sürenin uzayabilmekte olduğu bilinmektedir. Vakamızın ise özgeçmişinde böbrek yetmezliği olmadığı, buna rağmen 24 saat sonrasında bile kontrast maddenin vücutta böbrek, mesane ve safra kesesinde kaldığı BT'de görülmüştür. Bunun nedeni 24 saat önce geçirilen travmaya bağlı yoğun doku yıkımı sonrası açığa çıkan miyoglobinin glomerüllerde birikmesi ve sonuç olarak kontrast maddenin geçişini engellemesi olabilir.

Nefropatinin iatrojenik en sık nedeni nefrotoksik ilaçlardır (ACE inhibitörleri, diüretikler, nonsteroid antienflamatuar ilaçlar ve bazı antibiyotikler). Ayrıca nefrotoksik ilaç kullanımı, kontrast nefropati riskini de artırmaktadır (8). Vakamıza taburcu edilirken nonsteroid antienflamatuar ilaç

(deksketoprofen) reçete edilmiştir. Kullanılan nefrotoksik ajan kontrast nefropati riskinin artmasına yol açmış olabilir.

SONUÇ

Kontrast nefropatisi, kontrast madde kullanımına bağlı iatrojenik bir bozukluktur. Özellikle travma hastalarında doku yıkımı ile miyoglobin atılımı sonucunda akut böbrek yetmezliği olabileceği düşünülmeli, risk-fayda analizi yapılarak kontrastlı BT istenmelidir. Renal glomerüler filtrasyonun bozulduğu durumlarda kontrast madde vücutta görülebilmektedir. İyotlu kontrast madde tanısal değerinden dolayı kullanılan tek ajan olmaya devam edecektir. Kontrast nefropatisini tedavi etmek için en etkili yöntem sıvı resüsitasyonu olup, kontrast verilen hastalarda nefrotoksik ilaçların kullanımından kaçınılmalıdır.

KAYNAKLAR

1. Sinert R, Brandler E, Subramanian RA, Miller AC. Does the current definition of contrast-induced acute kidney injury reflect a true clinical entity? Acad Emerg Med 2012; 19:1261-7.
2. Sadat U. Radiographic contrast-media-induced acute kidney injury: pathophysiology and prophylactic strategies. ISRN Radiol. 2013 Sep 16;2013:496438.
3. Kataberg RW. Urography into the 21 st century: new contrast m edia, renal handling, imaginf characteristics, and nephrotoxicity. Radilogy 1997; 204(2): 297 -312
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5. K. Nash, A. Hafeez, S. Hou Hospital-acquired renal insufficiency. Am J Kidney Dis, 39 (2002), pp. 930-936
6. M.A. Stevens, P.A. McCullough, K.J. Tobin, *et al.* A prospective randomized trial of prevention measures in patients at high risk for contrast nephropathy: results of the P.R.I.N.C.E. Study: Prevention of Radiocontrast Induced Nephropathy Clinical Evaluation. J Am Coll Cardiol, 33 (1999), pp. 403-411.
7. Thomsen, H. S.; Morcos, S. K. Radiographic contrast media. BJU international, 2000, 86.s1: 1-10.
8. T.S. Ahuja, N. Niaz, M. Agraharkar. Contrast-induced nephrotoxicity in renal allograft recipients.Clin Nephrol, 54 (2000), pp. 11-14.

SÖZEL 2

The Role of Dual Energy Spectral CT Parameters In Distinguishing Incidental Benign and Malignant Breast Lesions

Yavuz Metin[1], Filiz Taşçı[2], Sinan Balcı[3], Eda Beykoz Çetin[4], Nurgül Orhan Metin[5], Özlem Bilir[6]

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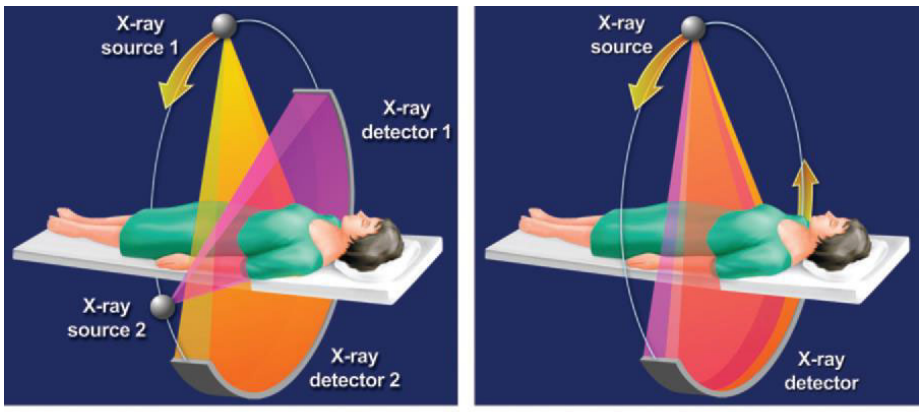
3- Hacettepe University Faculty of Medicine Hospitals , Deparment of Radiology, Ankara, Türkiye.
4- Rize State Hospital Radiology, Rize, Türkiye.

5- Beytepe Murat Erdi Eker State Hospital Radiology, Ankara, Türkiye.
6- Recep Tayyip Erdoğan University Faculty of Medicine, Training and Research Hospital, Department of Emergency Medicine, Rize, Türkiye.

Introduction:

Breast lesions may be detected incidentally on cross-sectional imagings (CT, MRI, PET-CT). CT specifically can be helpful in characterizing incidentally detected breast lesions and predict benign or malignant nature of breast pathology based on appearance.İt is important for the radiologist to routinely survey the chest wall on chest CT for incidental breast lesions, because this may be the first modality to demonstrate a new breast cancer.

In DESCT two images are acquired per location at two different energies: a low-energy image at 80 kVp (with a higher tube current–time product) and a high-energy image at 140 kVp (with a lower tube current– time product).



a. b.

- a: dual source dual CT
- b : single source dual CT

Iodine enhancement and iodine content and material decomposition images can be derived from this method .Discrimination between benign and malignant lesions and staging of cancer in oncology patients can be done .

Purpose:

To examine whether quantitative parameters obtained by contrast-enhanced dual energy spectral CT (DESCT) are helpful while differentiating incidentally detected benign and malignant breast lesions.

Materials and methods:

The retrospective study was approved by the ethics committee of our hospital and written informed consent was obtained in all patients. 86 breast lesions in 86 female patients that were detected incidentally in thorax DESCT images performed for other indications between May 2015 and May 2018 (age range 22-78 (median: 42). They patient are 30 benign and 56 malignant lesions .A high definition CT scanner (Discovery CT750HD, GE Healthcare, Wisconsin, USA) done.

Patients were injected with 80-100 ml (1.35 ml/kg of body weight) non-ionic iodinated contrast material (Iopromide*, Ultravist,* 300 mg I/mL*, Bayer Schering Pharma*, Berlin, *Germany*) via antecubital venous at a rate of 3-4.0 mL/s.Enhanced scans were obtained about 40 seconds after the injection of contrast agent.

The scanning parameters for GSI mode were as follows: tube voltage, dynamic switching between 80 and 140 kVp within 0.5ms; tube current between 275 and 640 mA (based on a prespecified BMI protocol); detector collimation, 0.625x64 mm, rotation speed, 0.6-0.8 s,helical pitch, 1.375:1.

The Gemstone Spectral Imaging Viewer software (Advantage Workstation 2.0; GE Healthcare) virtual monochromatic images (VMI) were used with at photon energies ranging from 40 to 140 keV, iodine mapping images , iodine enhancement (HU) ,iodine content (mg/ml), lesion size, normalized HU (lesion 40 keV VMI HU / aorta HU),normalized iodine content(lesion iodine/ aorta iodine), in 40 keV virtual monochromatic images(VMI) and iodine mapping images, cut-off values for differentiating benign and malignant lesions were calculated .

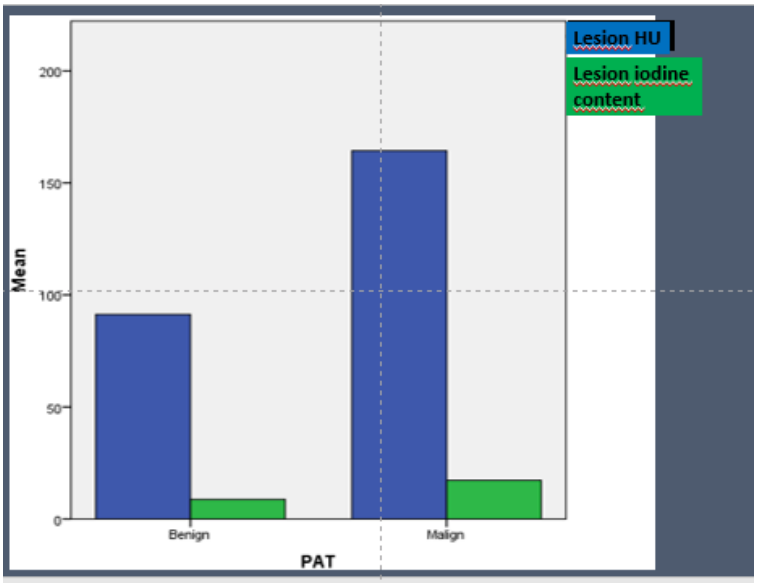
Results:

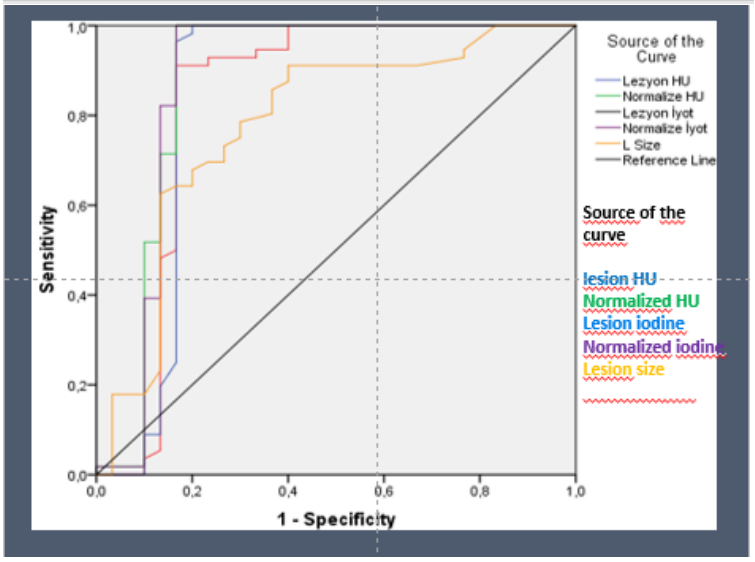
Measurements were significantly different between benign and malignant lesions for all quantitative parameters ($P < 0.001$). Proposed cut-off values for differentiating between benign and malignant lesions were 125 HU at 40keV VMI HU, 0.417 HU at normalized HU, 13.05 mg/ml for lesion iodine content , 0.396 mg/ml for lesion normalized iodine content (sensitivity was 83.9 % and spesificity was 83.3 % for all parameters) (p=0.001). 13.05 mg/ml for lesion iodine content , 0.396 mg/ml for lesion normalized iodine content (sensitivity was 83.9 % and spesificity was 83.3 % for all parameters) (p=0.001).

Statistical Analysis:

Statistical analyses were performed using commercially available statistical software (IBM SPSS Statistics, version22.0 [IBM SPSS, Armonk, NY].Continuous variables were described as mean±standard deviation (range). $p< 0.05$ was considered to be statistically significant. The normality of data distribution was defined using the Kolmogorov-Smirnov test.

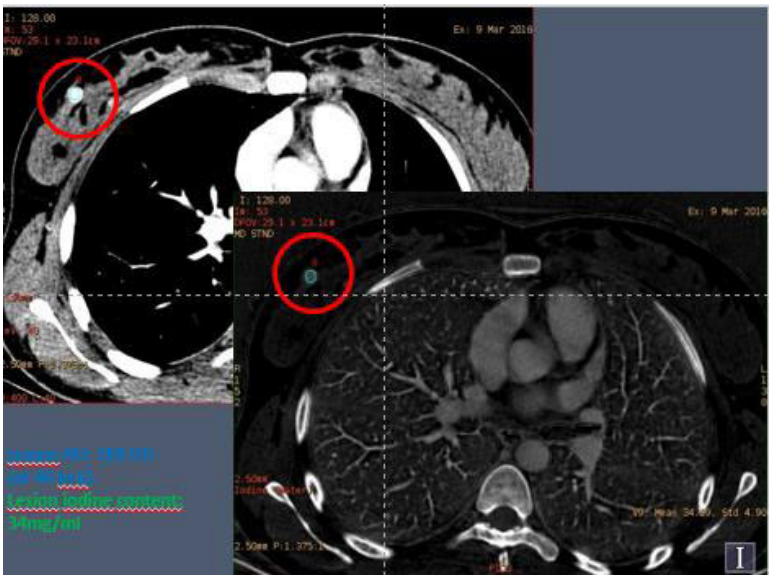
		N	Median	Mean	Std. Dev.	Min.	Max.	*p.
Normalized HU	Benign	30	,1051	,1930	,2292	,0147	,7850	<,001
	Malign	56	,5400	,5422	,1095	,3313	,8077	
Normalized iodine content	Benign	30	,08027	16200	,23069	,00328	,78341	<,001
	Malign	56	,51599	51392	,12494	,24375	,87879	
Lesion HU	Benign	30	62,4	91,3	81,2	12,4	303,0	<,001
	Malign	56	164,5	164,3	37,9	94,0	277,0	
Aorta HU	Benign	30	658,5	629,4	255,0	203,0	1203,0	<,001
	Malign	56	303,0	305,6	52,5	213,0	437,0	
Lesion iodine content	Benign	30	5,25	8,74	9,60	,20	34,00	<,001
	Malign	56	17,45	17,29	4,76	7,40	30,00	
Aorta iodine	Benign	30	78,0	73,4	28,1	29,7	135,0	<,001
	Malign	56	33,0	33,9	6,2	22,6	47,0	
Lesion Size	Benign	30	11,5	15,1	9,7	6,0	53,0	<,001
	Malign	56	21,3	22,9	9,3	9,0	50,6	

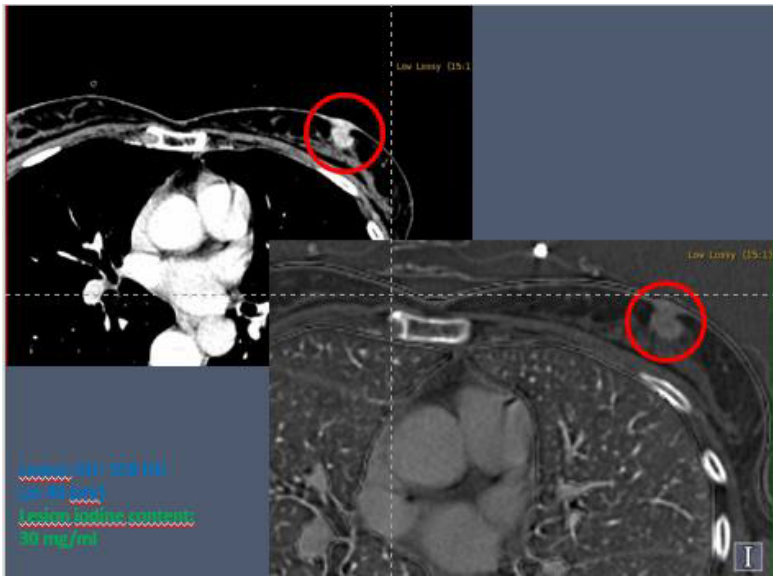




Area Under the Curve

Test Result Variables	Area (AUC)	Std. Error	p.	Cut-Off	Sensitivity	Specificity
Lesion HU	,843	,064	,001	125	0,839	0,833
Normalized HU	,876	,056	,001	0,417	0,839	0,833
Lesion iodine content	,835	,062	,001	13,05	0,839	0,833
Normalized iodine content	,876	,056	,001	0,396	0,839	0,833
Lesion size	,780	,057	,001	16,4	0,732	0,733





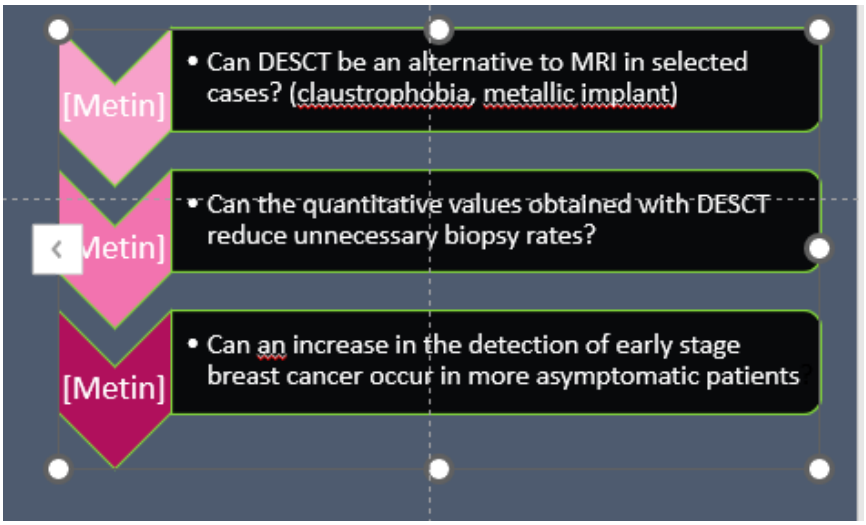
Discussion:

Contrast-enhanced CT could reveal sufficient details for the detection and characterization of unsuspected breast lesions.Irregular margins of incidental enhancing breast lesions can be considered suggestive of malignancy. The analysis of enhancement effects on CT may lead to a more appropriate differentiation of benign and malignant lesions

Limitations:

This small sample size no washout or plateau patterns were evaluated (dynamic CT phases were not performed). All histological types did not occur in our study, such as mucinous carcinomas, metaplastic carcinomas .Morphologic features of the lesions were not evaluated

In the future:



Conclusion:

Quantitative parameters obtained by dual energy spectral CT are useful for differentiating incidental benign breast lesions from malignant ones. Iodine content can serve as an additional and specific accurate feature of DESCT in the differential diagnosis of breast tumors

Resources:

1- Lin WC, Hsu HH, Li CS, et al. Incidentally detected enhancing breast lesions on chest computed tomography. Korean J Radiol. 2011; 12: 44-51.
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SÖZEL 3

Can peripheral blood parameters be used to differentiate COVID-19 and influenza infections?

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Backround and objectives

Upper respiratory tract infections are among the most common causes of admission to the emergency department. Most of the diseases are viral in nature and making decision based on patient symptoms and signs is often misleading. While most patients can be followed up with symptomatic treatment, more specific infectious agents such as Covid-19 and influenza require early and accurate treatment. Although PCR is recommended as the gold standard diagnostic method for the diagnosis of these diseases, the sensitivity of PCR is not sufficient and its diagnosis takes some time (1,2). In the literature, there are studies showing that neutrophil/lymphocyte ratio is useful in the differential diagnosis of Covid-19 patients and lymphocyte/monocyte ratio is useful for influenza patients(3,4), but studies on its use in the differentiation of these two infections are limited. In our study, we investigated whether patients with Covid-19 and influenza infections could be differentiated according to peripheral blood parameters.

Methods

The study was designed as a retrospective case control study. From May 2022, 50 consecutive Covid-19, influenza patients who addmitted to the emergency department and were diagnosed with PCR test, and 50 healthy patients as the control group were included in the study. The patient's demographics and, peripheral blood parameters such as WBC, RBC, hemoglobin, platelet, neutrophil, lymphocyte, monocyte counts, neutrophil/lymphocyte and lymphocyte/monocyte ratios and C-reactive protein(CRP) levels were recorded. The values of Covid-19, influenza and control groups were compared with each other.

Results

A total of 150 patients, 50 patients in each group, were included to the study. Of the patients, 75 (50%) were male and 75 (50%) were female. The mean age of the groups was 41±10 (med:42, min-max:22-59), 39±11 (med:37, min – max:18-63) and, 38±12(med:38, min-max:19-59) in Covid-19, influenza and, control groups respectively. There was no significant difference in age between the groups. Platelets, lymphocytes, monocytes, N/L, L/M and CRP values of patients with Covid-19 and influenza were significantly different from the control group (Table 1). WBC, RBC, hemoglobin values did not differ significantly for all 3 groups. When Covid-19 and influenza patients were compared, no significant difference was observed in any parameter (Table 2).

Discussion

In our study, it was seen that it was not possible to distinguish Covid-19 and influenza patients based on peripheral blood parameters and the ratio of subgroups to each other. In the literature, there are studies claiming that N/L and L/M ratios can help in the differential diagnosis of Covid-19 and

influenza and in evaluation of the prognosis(3,4). However, in the light of our findings, we believe that the clinical use of this approach is not sufficient to differentiate these two infections.

Key words: Covid-19, influenza, monocyte-to-lymphocyte ratio, neutrophil-to-lymphocyte ratio.

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5. Table 1 Comparison of laboratory values between groups

	Influenza	**Covid**	**Control**	
	Mean±SD	**Mean±SD**	**Mean±SD**	**P value**
WBC	6570±3396	6864±2779	6545±1416	0,471
HG	13,6±1,7	251,3±1681	13,9±1,5	0,448
PLT	191±56	203±51	232±47	**<0,001**
NTR	4692±2964	4899±2659	3585±1175	0,087
LYMPH	1082±533	1221±589	2148±519	**<0,001***
MONO	728±421	648±300	512±153	**0,013**
N/L	5,51±3,88	6,03±6,59	1,79±0,65	**<0,001**
L/M	1,88±1,13	2,18±1,41	4,46±1,42	**<0,001**
CRP	3,95±6,08	3,64±6,01	0,33±0,43	**<0,001**

WBC: white blood cell, HG: hemoglobin, PLT: platelet, NTR: neutrophil, LYMPH: lymphocyte, MONO: monocyte, N/L: neutrophil/monocyte ratio, L/M: lymphocyte/monocyte ratio, CRP: C-reactive prtotein

Table 2 Post-Hoc pairwise comparisons

	Influenza vs. Covid	Influenza vs. Control	Covid vs. Control
PLT	0,148	<0,001	0,009
LYMPH*	0,416	<0,001	<0,001
MONO	0,607	0,011	0,011
N/L	0,780	<0,001	<0,001
L/M	0,336	<0,001	<0,001
CRP	0,366	<0,001	<0,001

PLT: platelet, NTR: neutrophil, LYMPH: lymphocyte, MONO: monocyte, N/L: neutrophil/monocyte ratio, L/M: lymphocyte/monocyte ratio, CRP: C-reactive prtotein *Mann-Whitney U test, *Tukey*

SÖZEL 4

112 ACİL ÇAĞRI MERKEZİNİN SENKOP VE BAYILMA ÖN TANISI İLE NAKLETTİĞİ VAKALARIN TANISAL SONUÇLARI

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Amaç

Akut global serebral hipoperfüzyona bağlı ani, geçici şuur kaybıyla karakterize olan senkop, acil servis başvurularının %1-3'ünden sorumludur. Senkobun ayırıcı tanısında birçok hastalık bulunmaktadır. Çalışmamızda Temmuz-Haziran 2022 tarihlerinde Erzincan İli 112 Acil Çağrı Merkezince Senkop ve bayılma ön tanısı konulan hastaların klinik ve tanısal sonuçlarını araştırmayı amaçladık.

Yöntem

Retrospektif tipte planlanan çalışmaya Haziran-Temmuz 2022 tarihleri arasında 112 Acil Çağrı Merkezi tarafından Senkop ve bayılma ön tanısı ile nakledilen tüm yaş ve cinsiyetteki hastalar dahil edildi. Hastalar yaş, cinsiyet, hastanede konulan tanı, yattığı klinik ve son durumları açısından incelendi. Hastalardan elde edilen verileri değerlendirmek için IBM SPSS Statistics for Windows, Version 22.0 yazılım paketi kullanıldı. Sürekli değişkenler için ortalama ± standart sapmalar, kategorik değişkenler için yüzdeler kullanıldı.

Bulgular

Haziran-Temmuz 2022 tarihleri arasında 112 Acil Çağrı Merkezi tarafından Senkop ve bayılma ön tanısı ile Mengücek Gazi Eğitim Araştırma Hastanesine (MGEAH) 97 hasta dahil edilmiştir.

Hastaların 43'ü (%44,3) erkek, 54'ü (%55,7) kadın, yaş ortalaması 46,99 ± 22,32 (min 0, max 89) dır. MGEAH'de 36 (%37.1) hasta senkop ve bayılma tanısı ile tedavi edilmiş olup, bunların 33'ü (%34,02) ayaktan tedavi sonrası taburcu edilirken, 2'si (%2,1) koroner yoğun bakım ünitesine yatırıldıktan sonra takip hastası olarak kontrolleri yapılmıştır, 1 (%1) hasta ise tedaviyi red etmiştir. Pulmoner emboli tanısı alan bir hasta (% 1) göğüs yoğun bakım ünitesinde takip edilirken ex olmuştur. Bir hasta (%1) kronik renal yetmezlik tanısı ile acil gözlemde takip edilmiş, birer hasta (%1) anemi, gastrointestinal hemoraji tanıları ile dahiliye servisinde takip edilerek taburcu olmuştur. Vertigo tanısı alan 5 (% 5,2) hastadan 1'i de dahiliye servisinde takip edilmiş, 4 'ü taburcu edilmiştir. Bir hasta (% 1) aterosklerotik kardiyovasküler hastalık tanısı ile kardiyoloji servisine yatırılarak anjio sonrası koroner yoğun bakımda takip edilmiştir. 1 (%1) hasta ise merkezi sinir sisteminin demiyelinizan hastalıkları tanıları ile nöroloji servisinden takip edilmiştir. 1 (%1) hasta senkop sırasında düşmeye bağlı gelişen sebeplerden Kalp damar cerrahi servisinde tedavi görmüştür. Göğüs ağrısı tanısı alan 9 (%9.3), Myalji tanısı alan 5(% 5,2) hasta, kırgınlık ve yorgunluk tanısı alan 4 (% 4,1), karın ağrısı tanısı alan 4 (% 4,1), yumuşak doku bozukluğu tanısı alan 2 (%2,1), baş ağrısı tanısı alan 4 (% 4,1), anksiyete bozukluğu tanısı alan 1 (%1), esansiyel hipertansiyon tanılı 1 (%1), üst solunum yolu enfeksiyonu tanılı 2 (%2,1), ateş tanılı 1 (%1), diyare- gastroenterit tanılı 3 (%3,1), epilepsi tanılı 2 (%2,1), dispne tanılı 2 (%2,1) ve çarpıntı tanısı konulan 1 (%1), hasta olmak üzere toplamda 97 hastanın 86 tanesi herhangi bir servise yatırılmadan ayaktan tedavi aile taburcu olurken, 11 hasta servise yatırılarak takip edilmiştir.

Sonuç

Bu çalışmada görüldüğü gibi, senkop ve bayılma düşündüren şikayetlerle 112 acil çağrı merkezini arayan ve acil serviste bu ön tanı ile takip edilen hastalarda, etyolojide çeşitli hastalıklar olabileceği akılda tutulmalıdır.

Anahtar kelimeler: Acil çağrı merkezi, senkop, acil servis

SÖZEL 5

Role of Amifostine in Preventing Liver Injury Caused By Paracetamol Intoxication

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Abstract

Aim: Investigating the role of amifostine on treatment of paracetamol intoxication which may cause liver injury.

Materials and Methods: 7 groups (sham, paracetamol, amifostine, NAC, paracetamol+NAC, paracetamol+amifostine and paracetamol+amifostine+NAC) which each were consisted of 8 rats were created in our study used 56 male adult Wistar rat weighted 180-200 gr. Effects of NAC,

amifostine and their combination on liver enzymes and cells in paracetamol intoxication were measured by GSH and NO levels and histopathological scoring.
Results: All of rats with severe liver (L) hepatocyte injury were in paracetamol+NAC group whereas second lowest percentage of hepatocyte injury (following control group) was in paracetamol+NAC+amifostine group. Liver regeneration was only observed in paracetamol+amifostine and paracetamol+NAC groups. Liver fibrosis, iron accumulation in the liver and hepatic steatosis were not observed in any groups. Lowest L NO level was detected in paracetamol+NAC+amifostine group and it was statistically significant among all groups.
Conclusion: Combined treatment of amifostine and N-acetylcysteine in paracetamol intoxication was found to be superior to standard treatment of N-Acetylcysteine.
Keywords: paracetamol, amifostine, toxicology, emergency service, antidote, N-acetylcysteine

INTRODUCTION

Paracetamol which has been widely used and makes toxidrome in analgesic/anti-inflammatory drugs group which may be considered as a subgroup of clinical toxicology is the leading cause of acute liver failure in United States of America (1). Hepatotoxic effect of high-dose acetaminophen (paracetamol, N-acetyl-p-aminophenol) intake was first reported by Davidson and Eastham (2). Since then, toxicology study on paracetamol had been started.

There are cases undergone liver transplantation, cases monitored and treated in intensive care unit for a long time and cases undergone hemodialysis due to acute kidney failure due to paracetamol intoxication although standard treatment was administered. Rarely, complications like myocardial necrosis, pancreatitis and central nervous system depression may also be seen (3).

In a study, it was reported that an annual cost of approximately 87 million dollar has been caused by paracetamol intoxication in USA (4). Therefore, we aimed to evaluate and compare the N-acetylcysteine (NAC) (5) which has been widely accepted and is an effective treatment method, amifostine (WR-2721) as an organic phosphorylated thiol compound which has been demonstrated as an effective cell preservative against hepatic and renal toxicities caused by chemotherapeutic drugs (6) and their combined treatment in an experimental study.

MATERIALS AND METHODS

A total of 56 male adult Wistar rat weighted 180-200 gr was used in the study conducted with the approval no “B.30.2.ADÜ.0.00.00.00/050.04/2012/030” of Local Ethics Committee for Animal Experiments. Rats raised under conventional conditions were randomly grouped into equal 7 groups at 2 weeks before experiment and they were kept in Makrolon Type 4 cages at experiment room with 12:12 hours day:night cycle, 24±1 ºC enviromental temperature and 50-70% humidity. Procedures mentioned below were performed on these groups after a two-week period of adaptation. Subjects which had been fasted for approximately 16 hours before initiating study were weighted before creating liver toxicity.

Experiment Groups and Their Design

1.Sham (n=8): Paracetamol intoxication was not created in this rat group and only 8 ml SF was administered.

2.Paracetamol (n=8): 1 gr/kg paracetamol was solved in 8 ml serum physiologic (SF) and then it was administered to rats in this group through orogastric way.

3.Amifostine (n=8): Paracetamol intoxication was not created in this rat group. Amifostine at the dose of 100 mg/kg was intraperitoneally administered.

4.NAC (n=8): Bolus dose of N-acetylcysteine as 140 mg/kg for clinical use at paracetamol intoxication was intraperitoneally administered to this rat group.

5.Paracetamol+NAC (n=8): 1 gr/kg paracetamol (1 gr paracetamol solved in 8 cc serum physiologic) was administered through orogastric gavage in this rat group and then bolus dose of 140

mg/kg n-acetylcysteine in clinical use at paracetamol intoxication was intraperitoneally administered at 30 minutes later.

6.Paracetamol+Amifostine (n=8): 1 gr/kg paracetamol (1 gr paracetamol solved in 8 cc serum physiologic) was administered through orogastric gavage in this rat group and then 100 mg/kg amifostine was intraperitoneally administered at 30 minutes later.

7.Paracetamol+Amifostine+NAC (n=8): 1 gr/kg paracetamol (1 gr paracetamol solved in 8 cc serum physiologic) was administered through orogastric gavage in this rat group and then 140 mg/kg NAC and 100 mg/kg amifostine were intraperitoneally administered at 30 minutes later.

50 mg/kg ketamine hydrochloride (Ketalar, Eczacıbaşı) was applied in all rats at the right leg, general anesthesia and spontaneous breathing were obtained in rats. Abdominal region of rats was shaved and skin was cleaned with 10% Povidone Iodine. An approximately 4-cm incision laparotomy was performed at the midline after sterile dressing of the area which only left incision site open. Approximately 4 cc blood was taken from vena cava for evaluating biochemical parameters in sterile condition and it was placed in heparinized and normal tubes. Then, sacrification was performed.

Tablet form of paracetamol (Atabay İlaç Fab.A.Ş Parol 500 mg tablet, Turkey) was commercialy obtained. N-acetylcysteine ampoule (Hüsnü Arsan İlaç Sanayi, Asist ampul 300 mg/3mL (10%) IV/IM, Turkey) was commercially obtained. Amifostine ampoule (Er-Kim İlaç Sanayi ve Tic.A.Ş, Ethyol 500 mg vial 10 ml, imported product) was commercially obtained.

Rats in all group was monitored for 24 hours. At the end of 24 hours, approximately 4 cc blood was drawn from vena cava for evaluating biochemical parameters and they were placed into heparinized and normal tubes. Other obtained blood samples were centrifuged for 10 minutes at 4000 g and supernatant plasma was removed. Remaining erythrocyte package was washed 3 times with cold SF and erythrocytes were solved with equal amount of water after last wash; then they were placed in deep freeze for their disruption. Same parameters were also evaluated in blood samples and results of blood samples were provided with comparing with Hb level. NO was measured at the serum samples after blood samples were centrifuged.

Liver injury was evaluated by measuring serum activity of AST (aspartate aminotransferase) and ALT (alanine aminotransferase), comercially obtained measurement kit was used for this purpose.

Preparation of Tissue Samples and Pathological Samples

Tissue samples was homogenized at 4 C'in a 50 mM phosphate buffer (pH 7.4) (1/10 g/ml) including 0.2 M phenyl methane sulphonyl fluoride (PMSF) which is a protease inhibitor, 1 m methylene diamine tetra acetic acid (EDTA) and 1 µM Leupeptin. Homogenates were centrifuged at 10.000 rpm for 5 minutes; supernatant was equally divided into eppendorf tubes and they were frozen at –80 C for evaluating other parameters.

Organ parts of liver which were fixed in 10% neutrally buffered formaline for 24 hours were prepared as paraffine blocks through routine tissue steps.

4 µm thick sections were obtained with microtome. Hematoxylin and eosin stain was applied and preparations were sealed with Entellan. Sections were examined under light microscope.

Liver sections of all groups underwent pathologic evaluation in terms of liver hepatocyte injury, liver regeneration, reticular framework status, spotty necrosis of liver, liver fibrosis (dyed with Trichrome-Masson dye), iron accumulation of liver, hepatic steatosis; then they were scored as no finding, mild findings (+), moderate findings (++) and severe findings (+++).

GSH Measurement Method

Tissue GSH was measured according to method of Beutler et al., and precipitating solution was prepared by using metaphosporic acid, disodium EDTA and sodium chloride (NaCI). Disodium

phosphate solution was prepared with disodium hydogene phosphate (Na_2HPO_4). DTNB solution was prepared by using 5,5'-Dithio-bis (2-nitrobenzoic acid) and sodium citrate.

Reduced glutathione was used as a GSH standard and it was prepared as 1-60 mg/dl standards. Standards and samples were examined under UV-160 Shimadzu spectrophotometer at 412 nm against blind sample. Results were given as mg/g wet tissue (7).

NO (nitrous oxide) Measurement Method

Tissue NO levels were detected according to Navarro-Gonzalves et al. Tissue supernatant was first cleared from its proteins. Glycine-sodium hydroxide (NaOH) tampone was prepared by using glycine and sodium hydroxide. Copper sulphate ($CuSO_4$) solution in the Glycine-NaOH buffer was prepared by using glycine, NaOH and copper sulphate. This solution was used for activating Cd granules. Sulfanilamide solution was prepared by using 37% hydrochloride acid and sulfanilamid. NED solution was prepared by using N-(1-Naphtyl) ethylene diamine dihydro chloride . Standards were prepared as 2-80 g concentrations by using sodium nitrite ($NaNO_2$).

Nitrous oxide (NO) concentrations in the samples was measured as the result of Griess reaction, and samples and standards were examined under ELISA microplate at 540 nm. Concentration calculations were automatically performed by device and results were given as µM/g wet tissue (8).

Statistical Methods

Statistical Package for the Social Sciences (SPSS) 21 programme was used for data analysis. Compliance of univariate data to normal distribution was evaluated with Kolmogorov-Smirnov test, Shapiro-Wilk test; and Mardia Doornik&Omnibus test for compliance to multivariate normal distribution with coefficients of variation; then parametric methods were used for analysis of normally distributed variables whereas non-parametric methods were used for analysis of variables without normal distribution. One-Way Anova (Brown-Forsythe) and One Variate ANCOVA among parametric methods were used for comparing independent multiple groups; LSD and Games-Howell tests were used for post-hoc analysis, Kruskal-Wallis H Test among non-parametric tests was used for results of Monte Carlo simulation technique whereas non-parametric post-hoc test (Miller-1966) was used for post-hoc analysis.

Pearson Chi-Square and Fisher Exact tests were tested with Monte Carlo Simulation technique for comparing categorical variable. Quantitative data was presented as mean±SD (standard deviation) and median±IQR (Interquartile Range) values in tables. Categorical data was presented as n (number) and percentage (%). Data was examined at the 95% confidence interval and p values below 0.05 were considered as significant.

RESULTS

Liver Hepatocyte Injury:

Liver hepatocyte injury was not detected in control group in examination. Mild liver hepatocyte injury was observed in liver tissues of 2 experiment animal in paracetamol group; however, no severe and moderate liver hepatocyte injury were observed. Liver hepatocyte injury was not detected in amifostine group. Mild liver hepatocyte injury was detected in liver tissue of 1 experiment animal in NAC group. Moderate liver hepatocyte injury was detected in liver tissue of 2 rats in paracetamol+amifostine group.

Mild, moderate and severe liver hepatocyte injury were observed in three rats (one rat for each injury severity) in paracetamol+NAC group; respectively. Mild liver hepatocyte injury was detected in liver tissue of 1 experiment animal in paracetamol+amifostine+NAC group.

100% of subjects with severe liver hepatocyte injury were in the paracetamol+NAC group. After control group, second lowest percentage of liver hepatocyte damage was in paracetamol+NAC+amifostine group.

Liver Regeneration:

Moderate liver regeneration was detected in 2 rats in paracetamol+amifostine group whereas mild and moderate liver regeneration were detected in 1 and 3 rats in paracetamol+NAC group; respectively. Liver regeneration was not detected in other groups.

Spotty Necrosis in Liver:

Milder spotty necrosis was detected in 2 rats in paracetamol group whereas mild and moderate spotty necrosis were detected in 1 rat in NAC group and 2 rats in paracetamol+amifostine group; respectively. Mild and moderate spotty necrosis were detected in 2 rats and 1 rat in paracetamol+NAC group; respectively. Mild spotty necrosis in the liver tissue of 2 experiment animal in paracetamol+amifostine+NAC group (Table 1).

Table 1. Table demonstrating comparison between groups in terms of hepatocyte injury, regeneration and spotty necrosis

		Sham n(%)	Paracetamol n(%)	Amifostine n(%)	NAC n(%)	Paracetamol+ amifostine n(%)	Paracetamol+ nac n(%)	Paracetamol+ nac+amifostine n(%)
Hepatocyte Injury	Mild (+)	-	2 (25%)	-	1(12,5%)	-	1(12,5%)	1(12,5%)
	Moderate (++)	-	-	-	-	2(25%)	1(12,5%)	-
	Severe (+++)	-	-	-	-	-	1(12,5%)	-
Regeneration	Mild(+)	-	-	-	-	2(25%)	3(37,5%)	-
	Moderate(++)	-	-	-	-	-	-	-
	Severe (+++)	-	-	-	-	-	-	-
Spotty Necrosis	Mild(+)	-	2(25%)	-	1(12,5%)	-	2(25%)	2(25%)
	Moderate (++)	-	-	-	-	2(25%)	1(12,5%)	-
	Severe (+++)	-	-	-	-	-	-	-

In the light of the results, lower L tissue NO in paracetamol+NAC+amifostine group may be considered as an indicator of protective effect of amifostine (Table 2).

Table 2. Statistical analysis of cell injury indicators in blood and tissues.

	Control	Paracetamol	Amifostine	Nac	Paracetamol+amifostine	Paracetamol+nac	Paracetamol+nac+amifostine	
Liver NO(µM/g)*	0,5±0,1[a]	0,4±0,1	0,4±0,1	0,7±0,2	0,4±0,1	0,5±0,1[b]	0,3±0,1[c]	avs b > 0.005 avs c <0,001
Liver GSH(mg/g)*	7,1±0,7[a]	8,5±2,8	2,4±0,4	0,7±0,0	5,6±2,8	4,8±1,0[b]	2,4±0,5[c]	a vs b =0,002 , avs c p<0,001

DISCUSSION

No study comparing amifostine with NAC in paracetamol intoxication has been identified in the literature. However; there are studies experimentally created paracetamol intoxication and compared with NAC and studies evaluating effects of NAC and some alternative molecules to NAC in kidney and liver injuries created with different mechanisms in literature (9,10,11).

Alteration of natural immunity and sterile inflammation in liver plays an important role in progression of hepatic failure after acetaminophen overdose. Early cell death due to mitochondrial injury causes releasing of multiple molecular structures related with injury including DNA parts, heat shock proteins and later high mobility group box 1 protein which activates some receptors on Kupffer cells. Activated Kupffer cells releases cytokines and chemokines which cause accumulation of neutrophils and monocytes and cause cellular injury. It has been thought that direct effect of cytokines and chemokines instead of inflammatory cells causes cellular injury by altering intracellular events in hepatocytes. These intracellular activities include nitrous oxide (NO) synthase induction and expression of acute phase proteins such as HSPs and hem-oxygenase-1. Current evidences have supported the hypothesis on beneficial role of sterile inflammation of liver by clearing deposits and promoting hepatocyte proliferation and regeneration (12). Higher blood NO level and lower L tissue NO in paracetamol+NAC+amifostine group than other group in our study may be considered as an indicator of protective effect of amifostine. In addition, presence of lower hepatocyte injury than both paracetamol group and paracetamol+NAC group supports this issue.

Only clinically approved antidote against liver injury caused by APAP is N-acetylcysteine (NAC) which is most effective when administered in first 8 hours after intoxication (13). Although NAC is still beneficial even after 24 hours, its effectiveness greatly decreases (14). NAC is a precursor for GSH synthesis and it facilitates removal of reactive metabolite NAPQI during metabolism phase (15). In later time points, GSH assists the clearence of reactive oxygen in mitochondria and extensive NAC supports mitochondrial energy metabolism by being converted to intermediate items of Krebs cycle (16). In our study, higher blood GSH levels and lower tissue GSH levels in paracetamol, NAC and amifostine group than paracetamol group and paracetamol and NAC group indicates effect of amifostine which induces more GSH levels or supports its induction more than paracetamol.

In the light of all results, it was found that paracetamol+amifostine+NAC group was statistically superior to paracetamol+NAC and paracetamol+amifostine groups. Therefore, it was observed that amifostine treatment along with NAC treatment with administration of single bolus dose like our experimental model was superior to standard treatment with administration of single bolus dose in paracetamol intoxication.

Better prevention of combined amifostine and NAC treatment against liver and kidney injury than standard treatment in paracetamol intoxication promotes investigating efficacy of amifostine in conditions with possible liver and kidney injury such as contrast nephropathy, mushroom intoxications, nephrotoxicity caused by non-steroid anti-inflammatory agents.

In conclusion, amifostin and NAC combination is considered as a better treatment option in paracetamol intoxication. However, studies with larger extent as administrating maintenance doses of amifostine and NAC may provide more comprehensive investigation of this thesis.

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KONUŞMA ÖZETİ 1

OVERACTIVE BLADDER

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International Consultation on Incontinence Research Society (ICI-RS) proposed that the terminology is slightly rephrased as: "overactive bladder syndrome (OAB) is characterized by urinary urgency, with or without urgency urinary incontinence (1) usually with increased daytime frequency and nocturia, if there is no proven infection or other obvious pathology. Based on data from international reports, The prevalence of OAB is 12-16% in both men and women over 40 years old. Urinating frequency up to seven times during waking hours is considered normal.

However, this number varies depending on fluid intake during sleep hours and accompanying medical conditions.Nocturia is defined as one or more interruptions in sleep due to the need to urinate, but produces major discomfort (2). Nocturnal polyuria during the sleep period of the total 24-hour urine output producing more than 20% in the young and 33% in the elderly.Carers or relatives of the patient are disturbing the current symptoms and OAB can have a significant effect on quality of life so must that people need treatment .

OAB is associated with a complex of symptoms including urgency to urinate, frequent urination, urge incontinence, and nocturia, which seriously affect quality of life.Urinary frequency and urgency symptoms, both day and night, are troubling. It can only manifest itself with nocturne that appears at night.And is defined as wet with urge urinary incontinence or dry without urge urinary incontinence.

The aim of diagnosis is primarily to rule out serious risk factors that may cause excessive detrusor activity.Therefore, history, physical examination, and urinalysis should be performed to rule out underlying infection or other diagnoses (3). History, duration of complaints, total daily fluid intake, bladder irritant intake (such as sodas, artificial sweeteners, caffeine, and alcohol) ,and the use of drugs such as diuretics, urinary incontinence and type (wet, dry), urinary system infection, frequency of urination day and night, presence of complaints suggesting a neurological pathology, presence of family or history of diabetes mellitus, previous surgery, presence of stone-hematuria, dysuria, constipation, presence of obstructive complaints especially at advanced age in men, pregnancy, type and number of births in women, relationship between symptom onset and birth or menopause, whether hormone replacement therapy is applied or not ,voiding disorders in children are topics that must be questioned.Severity of symptoms, number of pads used that impact on quality of life and/or the use of validated questionnaires, and if there of pelvic floor symptoms (eg, bowel dysfunction, pelvic organ prolapse or dyspareunia) should also be questioned.

The bladder diary is more reliable and cheap than other examinations, but it is an objective test. It includes fluid intake, pad usage, incontinence episodes and the degree of incontinence. Episodes of urgency and sensation might also be recorded, as might be the activities performed during or immediately preceding the involuntary loss of urine.it usually maintained over a 24-hour period, as a way of helping to evaluate urinary frequency, urgency or incontinence.In addition, inquiry forms are used for diagnosis and treatment during evaluation. For this purpose, 31 different forms are used and 20 of them have been proven to be valid.

In physical examination, abdominal, neurological and genitourinary system examination should be performed.and a focused physical examination, including abdominal, pelvic and perineal

examination and a brief neurologic examination; a cough test to demonstrate stress incontinence, if appropriate; and assessment of voluntary pelvic floor muscle contraction.Findings on genitourinary examination should include evaluation of pelvic floor muscle strength or tenderness, degree of vaginal mucosal estrogenization, periurethral masses, pelvic organ prolapse, and accompanying stress urinary incontinence.In addition, a general assessment of cognitive function, neurologic system including sacral neural pathways (perineal sensation, bulbocavernosus reflex, anal sphincter tone), and lower extremity edema should be evaluated, voiding disorder in children. Globe vesicale, benign prostatic hypertrophy in male patients. In female patientsvaginal prolapse, imperforate hymen, labia minora adhesion, vaginal and urethral atrophy should be evaluated absolutely.

Of the other tests, urine evaluation is of primary priority. Urine culture should be performed in the presence of nitrites or leukocyte esterase or if urinary tract infection is clinically suspected.Presence of hematuria in urinalysis requires additional testing, including cystoscopy and upper urinary tract imaging.Renal function should be evaluated by creatinine.Ultrasonography can be used effectively in the evaluation of both the upper and lower urinary tracts as a simple, noninvasive and cheap examination (5). If abnormal urine flow and significant residual are detected, pathology in the upper urinary system, frequently recurring urinary infection, hematuria, bladder deformity, significant neurological disorder, behavioral and medical treatment is not responding, further investigation should be performed.

In the differential diagnosis, polydipsia, cystitis, bladder pain syndrome, atrophic vaginitis and neurological disorders in menopausal women should be considered.

It is important to establish reasonable therapeutic goals for symptom control before initiating treatment.Patients should understand that acceptable symptom control can involve trial and error of various treatment modalities and is often a long-term process that requires adjustments to treatment plans and ongoing reassessment of treatments.Initial management includes behavioral change, avoidance of bladder irritants, treatment of constipation, weight loss, timed voiding by paying attention to total daily fluid intake.Options for oral medications include antimuscarinic agents and β-adrenergic agents and may be used following or in conjunction with behavioral therapy.In patients resistant to behavioral therapy and oral medications,Referral to a specialist (eg, a urologist or urogynecologist) should be considered for discussion of further treatments such as sacral neuromodulation, percutaneous tibial nerve stimulation, and intradetrusor injection of botulinum toxin A.

Behavioral therapy is considered first-line therapy, While the primary approach is to regulate bladder functions and voiding habits such as bladder training and delaying voiding, the secondary approach is to improve bladder outlet control and suppression of urgency.In addition to education about normal bladder function, it includes behavior modification, if polydipsia (target: 1.5-2 L), avoidance of bladder irritants, management of constipation, weight loss, gradual reduction of total daily fluid intake,With timed voiding, you may be referred to a pelvic floor muscle physiotherapist who specializes in bladder training and female pelvic health. Kegel and pelvic floor exercises will be beneficial (6).

Oral medications are considered second-line therapy and there are two classes of drugs: antimuscarinic agents and β-adrenergic agents.Acetylcholine released from parasympathetic nerves during normal micturition stimulates muscarinic receptors and creates detrusor contraction.These agents, which are used for therapeutic purposes, are effective in eliminating involuntary contractions by inhibiting the receptor level (7). Oral agent selection is determined by the side-effect profile, patient tolerance, and contraindications for use.antimuscarinic drugs are including oxybutynin, darifenacin, solifenacin, tolterodine, fesoterodine, and trospium.The side-effect profile generally limits continued use and includes dry mouth, dry eyes, constipation, blurred vision, indigestion, urinary retention, and impaired cognitive function.Cognitive decline ,dementia and Alzheimer's disease in continuous use (>3 years),Absolute contraindications include narrow-angle glaucoma, impaired gastric emptying, and patients taking solid oral forms of potassium chloride. Among the relative contraindications is high PVR and impaired or decreased cognitive function.The general principle of antimuscarinic drug use is

to start at a low dose and increase the dose slowly to achieve acceptable symptom control while balancing the side-effect profile.Dry mouth can be reduce by oral lubricants or mouthwashes (avoid alcohol-based mouthwashes), sips of water, sugar-free candy, or gum.Dietary changes, fiber supplements, stool softeners, and regular exercise may be recommended if constipation occurs.

β-Adrenergic agents, β3-adrenergic agonists such as mirabegron. The benefit of this class is less anticholinergic side effects such as dry mouth and constipation.Therefore, they can be used in patients who cannot tolerate antimuscarinic drugs or who need to avoid antimuscarinic use.Side effects of β3 adrenergic agonists include increased blood pressure, nasopharyngitis, urinary tract infections, and urinary retention. severe uncontrolled hypertension,It is a contraindication to the use of β-adrenergic agonists. It is important to evaluate symptom control, compliance, side effects, achievement of treatment goals, and to discuss alternative treatment options or referral to a specialist.While waiting for side effects that limit the duration of drug use, 4 to 8 weeks of behavioral change or oral medical treatment should be allowed to produce a response (8).

Advanced therapies include intradetrusor injection of botulinum toxin A, sacral neuromodulation, and percutaneous tibial nerve stimulation.These treatment has its own risk/benefit profile, and appropriate patient selection and counseling is important before continuing with these treatments (9).

Intradetrusor botulinum toxin A Injection may be preferred in adults who cannot tolerate or do not respond adequately to anticholinergic drugs.The treatment is carried out by cystoscopic injection, which can be performed in the office environment under local anesthesia or sedation in the operating room environment.(The drug (typically 100 units) is injected across the bladder in roughly 20 aliquots.).The action of the drug is thought to be secondary to inhibition of the presynaptic release of acetylcholine and therefore muscarinic receptors in the bladder cannot be activated.Risks of the procedure include hematuria, urinary tract infection, and urinary retention.The urinary retention rate is between 4% and 10% and usually lasts for 8 weeks.

Sacral Neuromodulation is performed by a minimally invasive procedure that uses percutaneous insertion of a lead with electrodes through the S3 foramen to stimulate S3 nerve roots.The lead itself is excited by a pulse generator. The leads are thought to modulate the sacral afferent nerves and in turn help balance neural reflexes between the bladder, sphincter, and pelvic floor muscles.

Percutaneous Tibial Nerve Stimulation is performed by inserting a peripheral needle that stimulates the posterior tibial nerve.(Treatment is performed in an office setting and involves the use of a small percutaneous needle electrode (34 Gauge) being placed near the posterior tibial nerve at the level of the medial malleolus.).The needle is then stimulated via an external pulse generator. Electrical impulses are transmitted along the tibial nerve to the S3 segment of the pelvic sacral plexus, allowing it to affect voiding reflexes. At the end of the 30-minute treatment session, the needle is removed.Treatments are then performed weekly for 12 weeks, and those with adequate improvement are switched to maintenance therapy (roughly every 3 weeks).Contraindications to this treatment include patients with bleeding tendencies, peripheral neuropathy, pacemakers, and patients who are pregnant or considering becoming pregnant during treatment.Indwelling catheter use is not recommended and should be considered as a last resort in selected patients because of the risks of urinary tract infection, urethral erosion of the Foley catheter, bladder neck injury, and urolithiasis .Management with absorbent pads/clothing is preferable to indwelling foley catheter placement. An exception to this may be when urinary incontinence results in progressive decubitus. In such a situation, it is preferable to use a suprapubic catheter instead of a transurethral catheter because of the risk of urethral erosion. Augmentation cystoplasty and urinary diversion are rarely considered.

In summary; It is quite common in women.After a complete history and physical examination, a normal urinalysis should be performed. Depending on the clinical scenario and patient preference, this may include behavioral changes, pelvic floor physical therapy and/or medications. If the complaint

persists , specialist referral should be considered to discuss further treatments; such as PTNS, SNM, or intradetrusor injection of botulinum toxin A.

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KONUŞMA ÖZETİ 2

Idiopathic Hypoglycemia in The Emergency Department

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Introduction:

Studies have predicted that the prevalence of diabetes in Turkey is 13.7% - 17.0% and will be around 12 million in 2035. Intensive glucose-lowering treatments, especially insulin use, reduce the common vascular complications related to diabetes, shorten the length of hospital stay, and reduce the number of hospital admissions. The most common cause of hypoglycemia is insulin therapy. For this reason, intense glycemic control efforts may end with hypoglycemia. Higher mortality was observed in patients with Type II Diabetes Mellitus (DM) and in patients with hyperglycemia in intensive care units in aggressive glucose-controlled studies.

Diabetic patients constitute 54% of hypoglycemia patients admitted to the emergency department. Alcohol intake, malnutrition, sepsis, intoxication-suicidal intervention, congenital enzyme defects, autoimmune hypoglycemia, beta cell damage, insulinoma, islet cell hyperplasia or renal, cardiac, hepatic diseases may cause hypoglycemia. Iatrogenic hypoglycemia occurred at least once in the last 4 weeks in 4/5 of the patients with type 1 DM and in half of the patients with type 2 DM. Insulin, sulfonylureas, meglitinides are the most common antidiabetics. In addition, malnutrition, increased exercise, and increased metabolic status may be the cause of hypoglycemia.

Idiopathic hypoglycemia can have many causes. Intensive glycemic control, hypoglycemic agents, non-hypoglycemic agents (quinolones, pentamidine, quinine, B-bl, ACEI, ARB and IGF-1), polypharmacy can be counted among these reasons. Old age, increased duration of diabetes, previous history of severe hypoglycemia, number of previous hypoglycemia, recent or frequent hospitalizations can be counted as patient-related causes. Renal failure, congestive heart failure, liver failure, sepsis, need for mechanical ventilation, malignancy, hypoalbuminemia may increase the frequency and severity of hypoglycemia. The most common causes of idiopathic hypoglycemia in the emergency department are eliminating the acute complications of diabetes, hyperkalemia treatment, aggressive blood sugar regulation, disruption of the diet of the patients, and not questioning their diets.

Clinical Findings:

Clinical manifestations of hypoglycemia are divided into two groups as adrenergic (neurogenic) and neuroglycopenic symptoms. Adrenergic findings consist of symptoms such as anxiety, tachycardia, sweating, tremor, nausea, pallor, feeling ill, chest pain, abdominal pain, weakness, irritability. Findings such as confusion, dizziness, ataxia, headache, impaired consciousness, stupor, coma, blurred vision, focal neurological deficits, seizures and paralysis, and paresthesia are defined as neuroglycopenic findings. Usually, adrenergic symptoms precede neuroglycopenic findings. Neuroglycopenic findings may be a priority in long-term hypoglycemia.

On physical examination, hypotension, hypothermia, tachycardia, bradycardia, arrhythmias, and neurological findings that regress when hypoglycemia is eliminated may be seen. In patients presenting to the emergency department with unexplained changes in consciousness or unexplained adrenergic symptoms, blood glucose should be checked immediately.

Diagnosis:

Hypoglycemia was defined by the Whipple triad, which included the presence of symptoms suggesting a diagnosis with a serum glucose level of <50 mg/dl and the improvement of symptoms with glucose therapy. However, since hypoglycemia was observed in blood sugar at higher values than stated, the American Diabetes Association made changes in the diagnosis and changed the

classification. Hypoglycemia was defined as a decrease in blood glucose level to the extent that it activates the sympathetic nervous system/impairs CNS functions. Severe hypoglycemia was defined as the patient's inability to help himself due to his symptoms, requiring help. A blood glucose level of <70 mg/dl in the patient with symptoms of hypoglycemia was defined as documented symptomatic hypoglycemia. Patients with no symptoms of hypoglycemia but with blood glucose <70 mg/dl were defined asymptomatic hypoglycemia. Symptoms of hypoglycemia but absence of a measured hypoglycemia were probably defined as symptomatic hypoglycemia. Conditions with symptoms of hypoglycemia and blood glucose ≥70 mg/dl were called pseudohypoglycemia.

Bedside blood glucose for diagnosis, a venous blood sample should be sent to confirm this. In addition, patients should definitely have an EKG. Plasma insulin level, proinsulin level, C-peptide level, alcohol level, liver function tests, renal function tests, lactate levels, drug and substance levels will be valuable in explaining the etiology.

Treatment:

If the patient is conscious and able to swallow, 15-20 g glucose (preferably 3-4 glucose tablets/gel, 4-5 sugar cubes or 150-200 ml fruit juice or lemonade) is given orally. Fat-containing products such as chocolate and wafers should not be used. After a hypoglycemic attack, if the patient does not have a meal plan within 1 hour, an additional 15-20 g of complex carbohydrates should be taken.

If the patient is unconscious and chewing-swallowing functions are impaired parenteral therapy should be administered. 10-25 g glucose (50% dextrose 20-50 ml in 1-3 minutes or 20% dextrose 50-150 ml in 5-10 minutes) should be administered intravenously. In severe hypoglycemia due to sulfonylurea and not controlled by glucose infusion, administration of diazoxide or octreotide, which inhibits insulin secretion, together with dextrose infusion may be beneficial.

Glucagon injection: Especially in case of severe hypoglycemia in type 1 DM patients, 1 mg of glucagon (IV/IM/SC) may be life saving by the relatives of the patient. However, glucagon injection is not appropriate in the treatment of sulfonylurea-induced hypoglycemia, as it will increase insulin secretion.

Hospitalization: It should be considered in cases of severe hypoglycemia and neuroglycopenia, blood glucose <50 mg/dl, loss of consciousness despite hypoglycemia treatment, coma, convulsions, behavioral disorders (disorientation, ataxia, unstable motor coordination, dysphagia, etc.) due to defined or suspected hypoglycemia.

Mortality may be due to brain death, cardiac arrhythmias (sympathoadrenal activation and possible hypokalemia), ST wave changes, QT prolongation, cardiac repolarization, torsade de pointes, atrial fibrillation.

Protection: After each hypoglycemic attack is treated, its causes should be reviewed and training should be repeated if necessary. In particular, elderly patients with type 2 diabetes who have hypoglycemia due to the use of long-acting classical sulfonylureas should be monitored in the hospital for 24-48 hours.

Summary: The most important handicap to tight glycemic control in the treatment of diabetes is the risk of hypoglycemia. A patient using insulin is likely to experience severe hypoglycemia several times a year during treatment. Every patient treated with insulin and his family should be educated about the symptoms of hypoglycemia, ways to prevent it and how to treat it.

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KONUŞMA ÖZETİ 3

When and How Should We Intervene in Hyperglycemia in the Emergency Medicine

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Hyperglycemia occurs as a result of a decrease in insulin secretion or a decrease in insulin action in peripheral tissues. Two major considerations should be considered in the evaluation of hyperglycemia in the emergency department. The presence of a condition requiring emergency treatment (cerebrovascular accident, infection, acute myocardial infarction, drug intoxication etc.) that will cause hyperglycemia in patients and the emergency complications of hyperglycemia (ketoacidosis and hyperglycemic hyperosmolar state) are important in the evaluation of the emergency department.

Hyperglycemic patients are more likely to apply to the hospital (The higher the HgA_1c, the higher the frequency).

Treatment goals in the emergency department:

1. Avoiding hypoglycemia
2. Avoiding severe hyperglycemia,
3. Avoiding volume reduction and electrolyte losses,
4. Providing adequate nutrition,
5. Assess patient education needs and address knowledge gaps.
6. Ensuring appropriate glucose management after discharge until seen by the clinician who manages the patient's diabetes on an outpatient basis.

Polyuria, polydipsia, recent significant weight loss, newly developed changes in consciousness, loss of sensation in the distal extremities, persistent wounds (especially the feet), decreased skin turgor, presence of dry mucosa are clinical findings of hyperglycemia.

Emergency management of non-critical hyperglycemic patients:

Glucose values <180 mg/dL (10 mmol/L) and fasting blood glucose target <140 mg/dL (7.8 mmol/L) are recommended. However, these goals are often not achieved in the emergency.

The mortality of severely hyperglycemic patients with blood glucose >300mg/dL in the emergency department has increased compared to other patients. Therefore, it would be reasonable to manage blood glucose <300 mg/dL. In these cases, intravenous (IV) hydration and use of short-acting insulin have been shown to be both safe and effective in 4-week glycemic control. Of course, rapid-acting insulin, when administered without any other treatment, can lower blood sugar for a few hours, causing the patient to return to baseline. Therefore, if the blood glucose level is > 200 mg/dL in the emergency room and there is no contraindication for symptomatic patients, it may be appropriate to start 500 mg metformin tablets 1x1.

Emergency management of acute complications of diabetes:

Acute complications of diabetes, can be counted as diabetic ketoacidosis (DKA), hyperglycemic hyperosmolar state (HHS) and hypoglycemia. The main pathophysiology for ketoacidosis and hyperglycemic hyperosmolar state is cellular starvation due to insulin deficiency or inability of peripheral tissues to use insulin. Depending on cellular starvation, lipolysis, proteolysis, and glycogenolysis occur.

Trigger conditions are usually underlying hyperglycemic complications. The most common events:

1. Infection (often pneumonia or urinary tract infection),

2. Severe dehydration, especially in elderly patients,
3. Myocardial infarction, cerebrovascular diseases, acute pulmonary embolism,
4. Sepsis or pancreatitis, intestinal/mesenteric thrombosis, intestinal obstruction,

5. Severe trauma, burn, renal failure

6. New onset type 1 diabetes

7. Glucocorticoids, high-dose thiazide diuretics, sympathomimetic agents (eg, dobutamine and terbutaline),

8. Drugs that affect carbohydrate metabolism, such as second-generation "atypical" antipsychotics

9. Sodium-glucose co-transporter 2 (SGLT2) inhibitors,

10.Cocaine use,

11. Inadequate adherence to the treatment regimen

Clinic:

The ketoacidosis state usually develops rapidly over a 24-hour period. The HHS tends to develop over a longer period of time. Nausea, vomiting, polyuria, polydipsia, weakness, abdominal pain, visual disturbances can be observed in both clinical conditions.

HHS is generally seen in people over 50 years of age. 25-35% of the cases are patients with type 2 diabetes who have not been diagnosed before. There is marked dehydration. Hypotension, tachycardia, tachypnea, dehydration, shock can be observed in HHS. Gastrointestinal symptoms are rare in contrast to DKA. Renal dysfunction, neurological signs may be present (reversible), blood glucose is above 600mg/dl, serum osmolality is above 330mOsm/kg.

DKA is a more acute clinical condition than HHS. It is more common in type 1 DM patients. Decreased skin turgor, dryness of the mucosa, hypotension, tachycardia are common clinical findings. Altered states of consciousness (coma is mostly related to osmolality in HHS, if below 320 seek other causes), malaise, abdominal pain correlate with acidosis (periumbilical, mimics acute abdomen, pancreatitis?). Ileus symptoms and volume loss findings, kussmaul respiration, acetone odor in respiration are clinical findings that can be seen in DKA.

laboratory:

Patients' blood sugar, blood pH values, bicarbonate levels, anion gap values, plasma osmolality, BUN, creatinine values, sodium-potassium values should be evaluated in the diagnosis. In addition, a urine test should be performed to clarify the underlying cause such as the presence of ketones in the urine and urinary tract infection. In addition, tests to evaluate the etiology leading to the hyperglycemic state (infection markers, tests to distinguish other acute conditions such as amylase- lipase) should be a part of the patient evaluation.

Treatment:

Purpose: To replace the fluid and electrolyte deficiency. In order to correct the hyperosmolarity-hypovolemia-metabolic acidosis, IV hydration and physiologic insulin replacement should be performed. Potassium levels should be closely monitored at the start of treatment and during treatment, and caution should be exercised against hypokalemia.

In ketoacidosis: Average 6 L, HHS: Average 9 L IV hydration and fluid deficit should be filled. The aim is to increase intra/extra vascular volume and to provide renal perfusion. In patients without cardiac problems and prone to shock, 0.9% NaCl 1000-1500 ml (or 15-20 ml/kg/hr) can be given during the first hour of treatment. In general, the rate of fluid administration should not be less than 500 ml/hr on average in the first 4 hours. It is aimed to replace half of the estimated water and sodium deficit in 12-24 hours.

Insulin replacement: It should be started when the serum potassium value is >3.3mEq/L. After a 0.1 IU/kg IV bolus, an IV infusion dose of 0.1 IU/kg/hour is recommended. If the desired glucose reduction is not achieved in the first hour, an additional bolus of insulin at 0.1 IU/kg may be given. When plasma glucose reaches 200-250 mg/dL in ketoacidosis or 300 in HHS, the insulin rate should be reduced to 0.05 IU/kg/hr, followed by 5-10% dextrose infusion. Dextrose and insulin doses should be adjusted so that the blood glucose level is kept around 150-200 mg/dl, and the infusion should be continued until the patient's acidosis condition improves.

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KONUŞMA ÖZETİ 4

Pyelonephritis Management

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Introduction

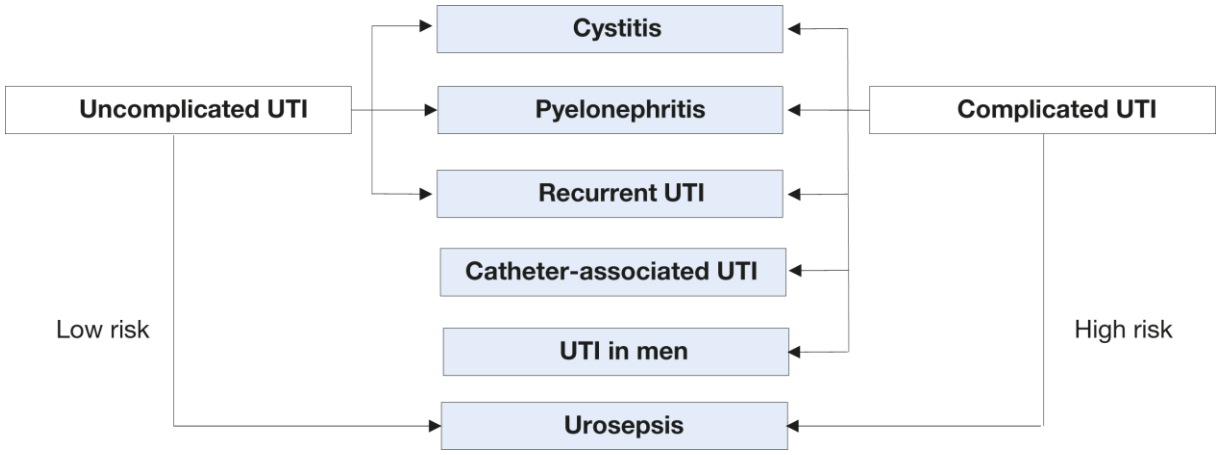
Urinary tract infections (UTIs) are the inflammatory response of the urothelium to bacterial attack, usually accompanied by bacteriuria and pyuria. UTI includes cystitis (bladder/lower urinary tract infection) and pyelonephritis (kidney/upper urinary tract infection). According to the data of the United States, urinary tract infection (UTI) develops in more than 7 million patients every year. 21% of UTI patients present to the emergency department. In addition, over 100,000 hospitalizations occur due to acute pyelonephritis (1).

It is more common in women because the urethra is short and close to the anus, and it peaks in sexually active women between the ages of 18-24. In 10% of patients, UTI recurs at least once a year. In men, it is less common due to the long urethra and the bactericidal nature of the prostate fluid. The incidence of UTI in men between the ages of 1-50 is less than 1% (2).

UTI risk factors include; female gender, advanced age, previous UTI, menopause, pregnancy, diabetes mellitus, immobilization, non-circumcision, drugs, residual urine (BPH, urethral stenosis, foreign body, neurogenic bladder, dehydration), colonization facilitating factors (sexual activity, estrogen deficiency, diaphragm/spermicide use, antibiotic therapy) and factors facilitating transmission (catheterization, urinary/fecal incontinence).

When we look at the UTI agents, more than 95% of them are caused by a single bacterium, and E.coli (70-90%) is the most common factor. While S. Saprophyticus is the causative agent most often in sexually active young women, Candida is often the cause in the use of urinary catheters/antibiotics. More than one bacteria is involved in the presence of complicated UTI. While the ascending route plays the most common role in the pathogenesis of UTI, it can be seen in hematogenous and lymphogenous transmission (3).

UTI Classification



Şekil 1. UTI Classification (1, 4)

Acute Pyelonephritis

It is an infection condition involving the kidney parenchyma and collecting system with fever, vomiting, chills, weakness, flank and back pain. It usually originates from the lower urinary tract by the ascending route. Gram (-) bacteria play a role and E.coli is responsible for about 80%. Acute pyelonephritis should be considered if there is obstruction (stone, tumor), urinary interventions, diverticulum, fistulas, other urinary problems, neurogenic bladder, vesicoureteral reflux, pregnancy, DM, renal failure and intermittent catheter.

Chronic Pyelonephritis

Scar tissue, atrophy and chronic kidney failure develop as a result of recurrent infections in the kidney. Predisposing factors such as DM, urolithiasis, obstruction and VUR play a role. It is generally asymptomatic and detected incidentally. The first choice in diagnosis is USG, but the most valuable differential diagnosis method is CT.

Uncomplicated pyelonephritis.

Acute, sporadic or recurrent lower (uncomplicated cystitis) and/or upper (uncomplicated pyelonephritis) UTI, limited to non-pregnant women with no known relevant anatomical and functional abnormalities within the urinary tract or comorbidities (5). Symptoms include fever, chills, lower back pain, nausea, vomiting, burning in urination, bleeding and frequent urination. On physical examination, there is fever (> 38°C) and costovertebral angle tenderness. Laboratory findings include leukocytosis, sedimentation, high CRP, and >105 cfu/ml growth in urine culture.

Complicated pyelonephritis

All UTIs which are not defined as uncomplicated. Meaning in a narrower sense UTIs in a patient with an increased chance of a complicated course: i.e. all men, pregnant women, patients with relevant anatomical or functional abnormalities of the urinary tract, indwelling urinary catheters, renal diseases, and/or with other concomitant immunocompromising diseases for example, diabetes (4). UTIs in men are considered complicated pyelonephritis unless proven otherwise. Symptoms are more acute. It is accompanied by a structural or functional complicating factor. In elderly patients, general condition deterioration may be the only symptom of UTI (Subclinical Pyelonephritis).

Pyelonephritis Management

Although the benefits of antibiotic use to patients are clear, overuse and misuse cause increased resistance among uropathogenic bacteria. 20-50% of antibiotics prescribed in emergencies are either unnecessary or inappropriate. It is vital to distinguish between uncomplicated and complicated (mostly obstructive) pyelonephritis as soon as possible. Urinalysis, urine culture, and antimicrobial susceptibility testing should be performed in all cases of pyelonephritis. In patients with urolithiasis, renal dysfunction, or high urine pH, the upper urinary tract is evaluated to rule out urinary tract obstruction or kidney stone disease. For the diagnosis of complicating factors in pregnant women, preferably US or magnetic resonance imaging (MRI) should be used to protect the fetus from radiation risk.

Empirical treatment should be started in uncomplicated pyelonephritis and antibiotherapy should be arranged according to the culture results. Imaging is rarely necessary unless the patient is diabetic or a stone is suspected to complicate the infection. If fever persists for 3-4 days of treatment, imaging should be performed for complications and CT is the first option. Fluoroquinolones and cephalosporins are the only antimicrobial agents that can be recommended for the oral empirical treatment of uncomplicated pyelonephritis. However, oral cephalosporins achieve significantly lower blood and urine concentrations than intravenous cephalosporins. It should be avoided because there is insufficient data on the efficacy of other agents such as nitrofurantoin, oral fosfomycin and pivmecillinam (4-6).

Patients with a UTI with systemic symptoms requiring hospitalisation should be initially treated with an intravenous antimicrobial regimen, such as an aminoglycoside with or without amoxicillin, or a second or third generation cephalosporin, or an extended-spectrum penicillin with or without an aminoglycoside (7) . The choice between these agents should be based on local resistance data, and the regimen should be tailored on the basis of susceptibility results (6). These recommendations are

not only suitable for pyelonephritis, but for all other cUTIs. In view of the high degree of resistance, particularly among patients admitted to the department of urology, fluoroquinolones are not automatically suitable as empirical antimicrobial therapy, especially when the patient has used ciprofloxacin in the last six months (8).

In summary, the severity of the disease and accompanying diseases should be evaluated in the emergency department. Pyelonephritis with a good general condition on admission can be treated on an outpatient basis. Sensitivity should be shown in sending and monitoring cultures from patients in AS. Urinary obstruction should be excluded, especially in septic patients, and bedside USG should be performed.

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KONUŞMA ÖZETİ 5

Who and When Needs an MRI

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Introduction

Magnetic resonance imaging (MRI) is a non-invasive imaging technique with functional applications with superior soft tissue contrast. MRI does not expose the body to radiation and has been used as a diagnostic radiology modality since the 1980s. In MRI, a very strong magnetic field, rapidly changing magnetic fields, radio waves and a computer are used to obtain detailed images (1).

Since it does not use ionizing radiation, it has no carcinogenic effect, unlike CT and other X-ray imaging. Contrast resolution and tissue discrimination are better. We can take cross-sections of varying thickness, analyze images from different angles, and optimally evaluate the relations of anatomical structures with each other (2,3).

MRI is very good at imaging. However, it does not have the same success in diagnosing because the signal properties of many pathological tissues are similar. In unstable patients, it is difficult to monitor the patient. The disadvantages of MRI are that it is expensive and not always available. Patients with claustrophobia, patient intolerance, weight >140kg, pacemaker, metallic implant, neurostimulator and aneurysm clips do not have MRI imaging (2,3).

Known side effects of MRI are related to the use of gadolinium-based contrast agents. Allergy and contrast nephropathy may be seen. It is recommended not to be used in pregnant women and is pregnancy category C. When it is used in breastfeeding mothers, it should not breastfeed the baby for 6-24 hours. MRI is contraindicated in the presence of implants and foreign bodies, in clinically unstable patients, and in patient intolerance (4).

MRI Sequences

T1= "anatomical" imaging; the fluid is very black, solid organs and muscles are gray, adipose tissue is shiny (A). T2= “pathological” imaging; liquid is very shiny, other textures are gray and black (B).

Abnormal tissue is made more visible with contrast T2 sequence. Diffusion-weighted imaging; Microscopic random movements of water molecules are displayed. Perfusion-weighted imaging; shows the distribution of the contrast agent in the brain tissue. Gradient –echo display; It is superior in showing early hemorrhage. It keeps the Hb pigments in the bleeding area.

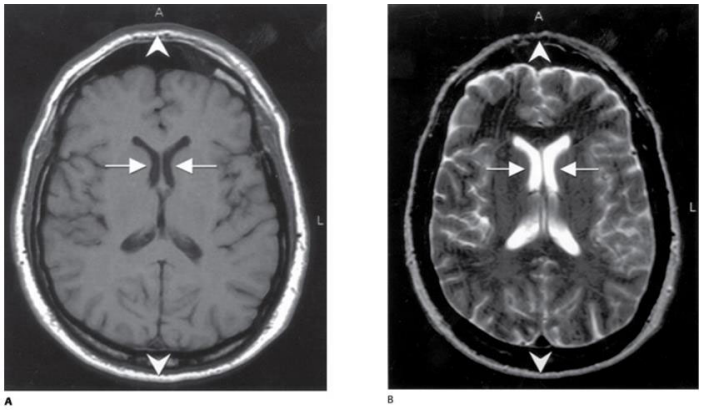

Figure 1A and 1B: MRI T1 and T2 Sequences

Emergency Indications for MRI

Spinal cord compression, occult hip fractures, cerebral sinus vein thrombosis, carotid and vertebral artery dissection, acute cerebrovascular diseases, appendicitis in pregnancy, aortic dissection and pulmonary embolism and other apps. MRI is most commonly used for neuroimaging in the emergency department (5).

Spinal cord compression: Because of its superior contrast resolution, MRI is superior to CT in diagnosing spinal cord compression due to trauma or malignancy. In CT myelography, there is a risk of increased compression due to secondary infection, bleeding, contrast reaction and CSF aspiration. Fractures can be detected on CXR and CT. Direct characterization of MRI spinal cord attitude is detected. It is seen in edema and hematoma in this area. Osteomyelitis, discitis, epidural abscess or hematoma in the spinal cord can be easily detected in MRI.

Occult hip fractures: MRI can detect some fractures, such as early stage, small fractures, nondisplaced fractures, and osteopenic bone, which are not seen in direct radiography and CT. While the displaced hip fracture can be visualized easily by plain radiography, the non-displaced fracture may be radiographically occult and require different imaging modalities, e.g., MRI for proper visualization.

Cerebral sinus vein thrombosis: MRI, in combination with magnetic resonance venography, is an excellent test for suspected cerebral sinus vein thrombosis. Because the duration of the CVT impacts MRI test characteristics, venous phase imaging is necessary. Similar to CT venography, magnetic resonance venography (MRV) displays high sensitivity and specificity for diagnosis. While CT venography and MRV likely perform similarly, MRV may be more effective for diagnosis in those with evidence of deep vein involvement (i.e., altered mental status).

Carotid and vertebral artery dissection: MRI/MRA has been accepted as a noninvasive alternative to traditional contrast angiography. It does not carry the risk of embolism, bleeding and ionizing contrast allergy. It directly displays the intramural thrombus, if any. It shows the associated ischemic injury of the brain and simultaneously the dissection width/extension. CT/CTA is used as an alternative in supraaortic dissections.

Acute cerebrovascular diseases: MRI was found to be equivalent to CT in detecting acute hemorrhagic stroke. MRI provides better efficiency in posterior fossa visualization and increased sensitivity for acute ischemic stroke detection. Especially with diffusion-weighted imaging protocols, it can detect abnormalities in the brain parenchyma due to ischemic injuries within minutes.

Appendicitis in pregnancy: The use of MR in pregnant women is considered safe. It can be used to evaluate the abdomen of the mother and the fetus. It can be considered as the second stage after USG or as the first choice if there is no USG. The use of gadalonium, an MR contrast agent, is not recommended. Does not require IV contrast. MR sensitivity and specificity are high in the diagnosis of acute appendicitis.

Aortic dissection and pulmonary embolism: MRI is an extremely accurate technique for detecting aortic dissection. It indicates the presence of thrombus in the false lumen, extension to other branches, and aortic regurgitation.

Posterıor reversıble encephalopathy syndrome: PRES is a disease with clinical symptoms such as headache, lethargy, visual disturbance and nausea as a result of vasogenic edema in the cerebrum, especially in the posterior areas. Although it is a disease with a good prognosis that can be cured without sequelae with antiedema treatment in the early period, if the diagnosis is missed and appropriate treatment is not given, it can cause permanent damage such as vision damage and even death.

Other apps: The increasing demand for a definitive diagnosis will further increase the indications that were previously thought to be of no urgency, with the correct use of MRI in the emergency department. Soft tissue injuries such as muscle tears, tendon or ligament disruption, nerve damage, bleeding, inflammation, and edema are best diagnosed with MRI. MRI is also the best imaging choice in patients with suspected disc herniation and disabling radicular symptoms and require surgical intervention.

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KONUŞMA ÖZETİ 6

Acil Tıpta Dislipidemiyi Değerlendirmeli miyiz?

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9. International Emergency and Internal Medicine Congress

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Lipidlerin biyolojik rolü ve lipoproteinler

- Plazmadaki lipoproteinler, enerji kullanımı, lipid depolama, steroid hormon üretimi ve safra asidi oluşumu için lipitleri dokulara taşır
- Lipoproteinler, esterlenmiş ve esterlenmemiş kolesterol, trigliseritler, fosfolipidler ve apolipoproteinlerden oluşur.

Kanda 6 ana lipoprotein vardır:

- Şilomikronlar,
- Çok düşük yoğunluklu lipoprotein (VLDL),
- Orta yoğunluklu lipoprotein (IDL),
- Düşük yoğunluklu lipoprotein (LDL)
- Lipoprotein-a (Lp(a) ve
- Yüksek yoğunluklu lipoprotein (HDL)
- Arter duvarında tutulan ApoB içeren lipoproteinler lipid birikimine ve bir ateromun başlamasına yol açan karmaşık bir süreci tetikler
- ApoB içeren lipoproteinlere sürekli maruz kalma, arter duvarında zamanla tutulan ek partiküller ve aterosklerotik plakların büyümesi ve ilerlemesine yol açar.
- Plazma ApoB içeren lipoproteinlerin daha yüksek konsantrasyonları olan kişiler daha fazla partikül tutacak ve lipitleri daha hızlı biriktirecek, sonuçta plaklarda büyüme ve aterosklerotik hastalığın ilerlemesi de daha hızlı olacak
- ApoB içeren lipoprotein partikülleri, dolaşımdaki LDL-C konsantrasyonu, diğer ApoB içeren lipoproteinler ve bu lipoproteinlere toplam maruz kalma süresi belirlenebildiği için toplam aterosklerotik plak yükü, aterosklerotik plak büyümesi saptanabilir

- Sonunda, aterosklerotik plak yükünün artması plak bileşimindeki değişikliklerle kritik bir noktaya ulaşır
- Üstteki trombüs oluşumu ile bir plak bozulması, kan akışının akut bir şekilde engellenmesiyle anstabil angina, miyokard enfarktüsü (MI) veya ölüme neden olabilecektir

LDL-kolesterol (C) ve Ateroskleroz riski

- Plazma LDL-C, LDL partikülleri tarafından taşınan kolesterol kütlesinin bir ölçüsüdür.
- ApoB içeren lipoproteinlerin açık ara en çok sayıda olanı ve dolaşımdaki LDL konsantrasyonunun bir tahminidir
- Çok sayıda epidemiyolojik ve randomize kontrollü çalışma, plazma LDL-C'deki mutlak değişiklikler ile arerosklerotik kardiyovasküler hastalık riski arasında doğrusal bir ilişkiyi göstermiştir.
- Bu çalışmalar LDL-C'yi düşürmenin arerosklerotik kardiyovasküler hastalık riskini orantılı olarak azalttığını göstermiştir

Trigliseritten zengin lipoproteinler ve ateroskleroz riski

- TG açısından zengin VLDL partikülleri ve bunların kalıntıları dolaşımdaki TG partiküllerinin çoğunu taşır.
- Bu nedenle, plazma TG konsantrasyonu, dolaşımdaki ApoB içeren TG açısından zengin lipoproteinlerin konsantrasyonunu yansıtır.
- Yükselmiş plazma TG seviyeleri, artan arerosklerotik kardiyovasküler hastalık riski ile ilişkilidir.

HDL-C ve Ateroskleroz riski

- RKÇ de HDL-C'yi yükseltme ile arerosklerotik kardiyovasküler hastalık riskin azalması arasında nedensel ilişkiyi gösteren net kanıtlar yoktur
- In the Effects of Dalcetrapib in Patients with a Recent Acute Coronary Syndrome **(dal-OUTCOMES)** trial: treatment with the cholesteryl ester transfer protein (CETP) inhibitor dalcetrapib increased HDL-C without any effect on LDL-C or ApoB, but did not reduce the risk of major CV events
- Assessment of Clinical Effects of Cholesteryl Ester Transfer Protein Inhibition with Evacetrapib in Patients at a High-Risk for Vascular Outcomes **(ACCELERATE)** and Randomized Evaluation of the Effects of Anacetrapib Through Lipid Modification

(REVEAL) trials, treatment with CETP inhibitors more than doubled HDL-C levels, but did not appear to reduce the risk of ASCVD events

Hipertrigliseridemi ve Akut Pankreatit

- Hipertrigliseridemi, akut pankreatitin nadir fakat iyi bilinen bir nedenidir.
- 1000 ila 2000 mg / dl'den fazla serum trigliserit seviyesi tanımlanabilir risk faktörüdür.
- Tipik olarak akut pankreatit veya tekrarlayan akut pankreatit atağı olarak ortaya çıkar.
- Hipertrigliseridemiye bağlı pankreatitin klinik seyri ve rutin yönetimi diğer nedenlere benzerdir.
- Tipik olarak hipertrigliseridemi ile indüklenen pankreatit, önceden var olan bir lipid anormalliği ile birlikte sekonder presipitan bir faktörün (örn., kötü kontrol edilen diyabet, alkol veya ilaç) mevcudiyeti olan bir hastada ortaya çıkar.
- Tip I, III, IV ve V hiperlipoproteinemili hastalarda (Friedrickson sınıflandırması) 1000 ila 2000 mg/dl'den fazla trigliserit düzeyleri tanımlanabilir risk faktörüdür.
- Pankreatitin akut fazları sırasında trigliseritleri azaltmak için genel ve spesifik tedaviler mevcuttur.
- Beslenme, farmakolojik tedavi ve ağırlaştırıcı faktörlerden kaçınmak, daha sonraki atakları önlemek için esastır.

Fibratlar

- Tedavinin temelidir,
- Plazma trigliserit düzeylerini %50'ye kadar düşürürler
- HDL kolesterolü %20 oranında yükseltirler*

FİBRATLAR

- Mekanizma: VLDL'nin hepatik sekresyonunun azalması ve plazma trigliseritinin lipolizinin artması ile karaciğerde peroksizom proliferatörle aktive olan reseptörleri-α (PPAR-α) modüle ederler. .*
- Ayrıca küçük yoğun LDL partiküllerini azaltır ve HDL'yi arttırırlar**
- Statinler, hidroksilmetilglutaril CoA redüktazını inhibe ederek kolesterolü düşürür, böylece tip 2 diyabette koroner kalp hastalığı son noktalarını azaltır*
- Omega-3-yağ asitleri (eikosapentanoik ve dokosahekzanoik asit), diğer trigliserit düşürücü tedavilerle birlikte kullanıldığında plazma trigliseritlerini %20 azaltır*

- Antioksidan tedaviler (Selenyum, β karoten, C vitamini, α-tokoferol), serbest radikallerin neden olduğu asiner hasardan korumaları sayesinde medikal tedaviden sonra belirgin şekilde hipertrigliseridemik kalan tekrarlayan pankreatit ataklarının azaltılmasında kullanılmıştır*

Yeni tedavi modaliteleri

- Plazmaferez*
- İnsülin ve heparin**
- lipoprotein lipaz gen tedavisinin*** kullanımını içerir

Plazmaferez

- Kan plazmasının veya bileşenlerinin ekstrakorporeal uzaklaştırılmasını, geri verilmesini veya değiştirilmesini içeren terapötik bir yaklaşımdır
- Bu prosedürün altında yatan mekanizma, yarı geçirgen membranlar kullanılarak ya santrifüjleme ya da süzme ile gerçekleştirilir.
- Santrifüjleme, çeşitli kan bileşenlerinin farklı özgül ağırlıkları kullanılarak ayırma ilkesine dayanırken, membran plazma ayırma kan bileşenlerini partikül boyutlarına göre filtreler.
- Bu girişim, birçok hastalığın tedavisi için kullanılabilecek filtrelenmiş bir plazma ürünü ile sonuçlanır.

Plazmaferez

- Plazmaferez, en iyi klinik sonuçlar için uygun kararlar, özel beceri temelli eğitim, yakın izleme ve takip gerektiren bir yoğun bakım prosedürüdür.