

Diyabetik Ayak İnfeksiyonunda Gram Pozitif Zor Patojenli Olgu Yönetimi

Dr. Ercan YENİLMEZ

**Sultan Abdülhamid Han E.A.H.
Enfeksiyon Hastalıkları ve Kl. Mik. Servisi**

Diyabetik Ayak İnfeksiyonunda
Gram Pozitif Zor Patojenli Olgu Yönetimi



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Gram Pozitif Patojenli Zor Olgu Yönetimi

Sunum Planı

- Giriş – Genel bilgiler

- Olgu sunumu

- Kılavuzlar / literatür eşliğinde tartışılması

- Çıkarılacak sonuçlar

DM'nin Majör Komplikasyonları

Mikrovasküler

Göz

Retinopati, katalakt, glokom

Böbrek

Nefropati, böbrek yetmezliği

Nöropati

Ağrı, uyuşma ve hissizlik

Makrovasküler

Beyin

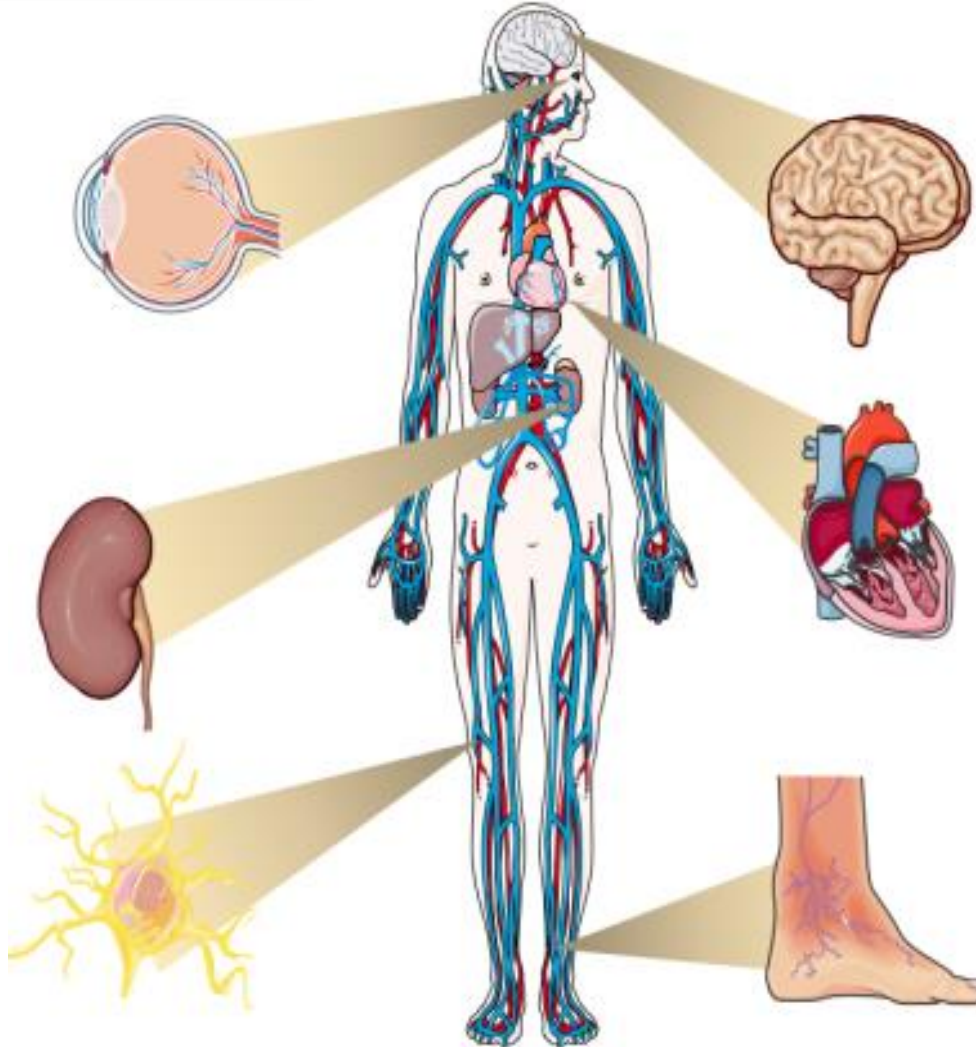
Kognitif fonksiyonlarda bozulma, transient iskemik atak vb serebrovasküler hastalık risk artışı

KVS

Koroner kalp hastalık risk artışı, periferik damar harabiyeti

Ekstremiteler

Diyabetik yara
Gangren





2012 Infectious Diseases Society of America Clinical Practice Guideline for the Diagnosis and Treatment of Diabetic Foot Infections^a

**Benjamin A. Lipsky,¹ Anthony R. Berendt,² Paul B. Cornia,³ James C. Pile,⁴ Edgar J. G. Peters,⁵ David G. Armstrong,⁶
H. Gunner Deery,⁷ John M. Embil,⁸ Warren S. Joseph,⁹ Adolf W. Karchmer,¹⁰ Michael S. Pinzur,¹¹ and Eric Senneville¹²**

¹Department of Medicine, University of Washington, Veterans Affairs Puget Sound Health Care System, Seattle; ²Bone Infection Unit, Nuffield Orthopaedic Centre, Oxford University Hospitals NHS Trust, Oxford; ³Department of Medicine, University of Washington, Veteran Affairs Puget Sound Health Care System, Seattle; ⁴Divisions of Hospital Medicine and Infectious Diseases, MetroHealth Medical Center, Cleveland, Ohio; ⁵Department of Internal Medicine, VU University Medical Center, Amsterdam, The Netherlands; ⁶Southern Arizona Limb Salvage Alliance, Department of Surgery, University of Arizona, Tucson; ⁷Northern Michigan Infectious Diseases, Petoskey; ⁸Department of Medicine, University of Manitoba, Winnipeg, Canada; ⁹Division of Podiatric Surgery, Department of Surgery, Roxborough Memorial Hospital, Philadelphia, Pennsylvania; ¹⁰Department of Medicine, Division of Infectious Diseases, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts; ¹¹Department of Orthopaedic Surgery and Rehabilitation, Loyola University Medical Center, Maywood, Illinois; and ¹²Department of Infectious Diseases, Dron Hospital, Tourcoing, France

IWGDF Guidance on the diagnosis and management of foot infections in persons with diabetes

Prepared by the IWGDF Working Group on Foot Infections

Recommendations

Introduction

Pathophysiology

Diagnosis and Classification

Soft tissue infection

Osteomyelitis

Assessing severity

Microbiological considerations

Treatment

Key Controversies

References

Systematic review

Authors

B. A. Lipsky¹, J. Aragón-Sánchez², M. Diggle³, J. Embil⁴, S. Kono⁵, L. Lavery⁶, É. Senneville⁷, V. Urbancic-Rovan⁸, S. Van Asten^{6,9}, E. J. G. Peters⁹; on behalf of the International Working Group on the Diabetic Foot (IWGDF)

Institutions

¹ Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland, and University of Oxford, Oxford, UK

² La Paloma Hospital, Las Palmas de Gran Canaria, Spain

³ Nottingham University Hospitals Trust, Nottingham, UK

⁴ University of Manitoba, Winnipeg, MB, Canada

⁵ WHO-collaborating Centre for Diabetes, National Hospital Organization, Kyoto Medical Center, Kyoto, Japan

⁶ University of Texas Southwestern Medical Center and Parkland Hospital, Dallas, Texas

⁷ Gustave Dron Hospital, Tourcoing, France

⁸ University Medical Centre, Ljubljana, Slovenia

⁹ VU University Medical Centre, Amsterdam, The Netherlands

Address of correspondence

Benjamin A. Lipsky. 79 Stone Meadow, Oxford, UK OX2 6TD
balipsky@hotmail.com.

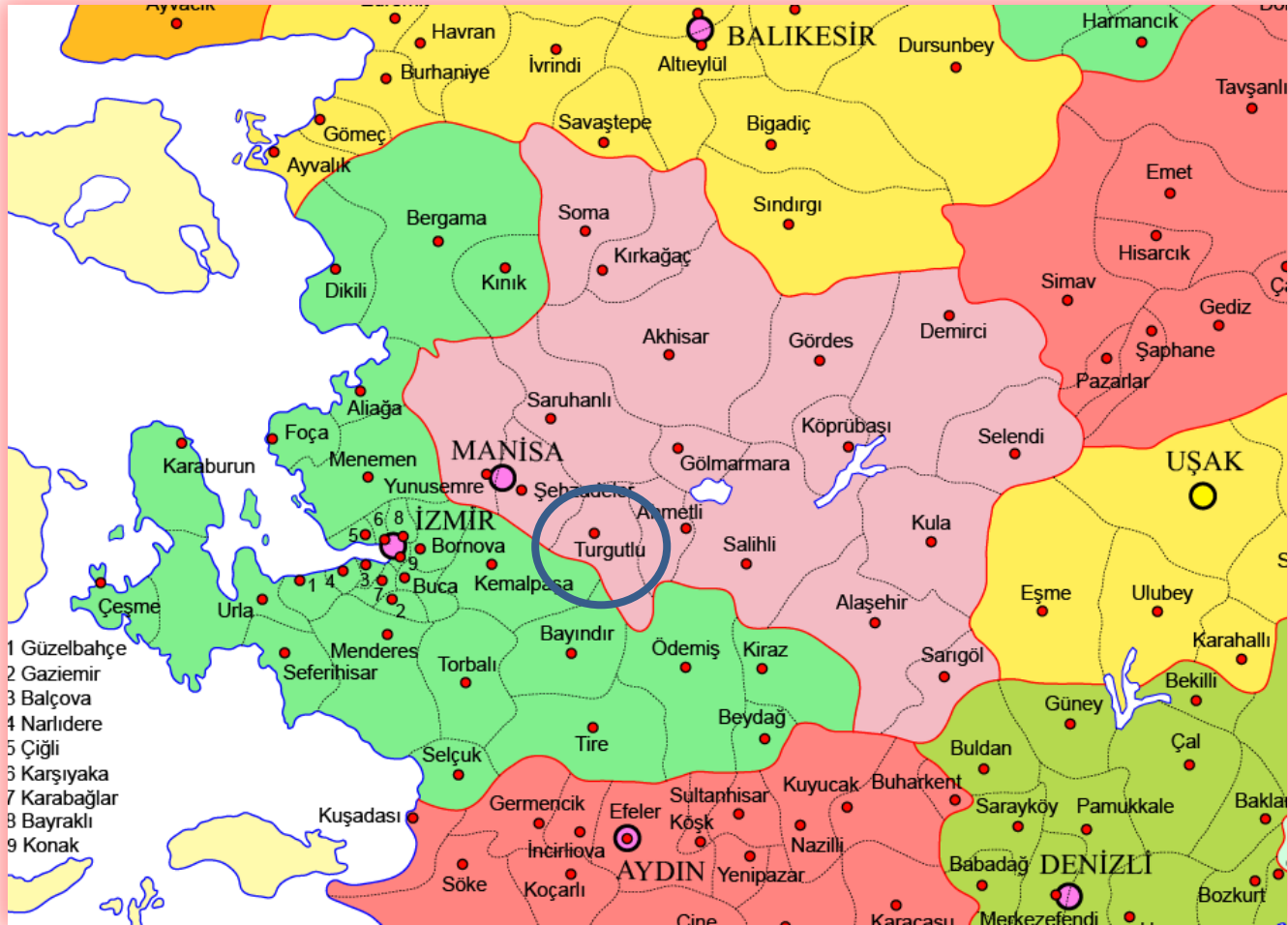
IWGDF Guidance on the diagnosis and management of foot infections in persons with diabetes



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Olgu

- 60 yaşında, erkek
- 20 yıldır DM
- Son 10 yıldır insülin tedavisi altında (kontROLSÜZ)
- HT, KOAH, hiperkolestrolemi ve KBY
- Kronik alkol kullanımı
- Sigara (>40 yıl, 1.5 pk/gün)
- Uyumsuz; düzenli takip ve ilaç kullanımı yok

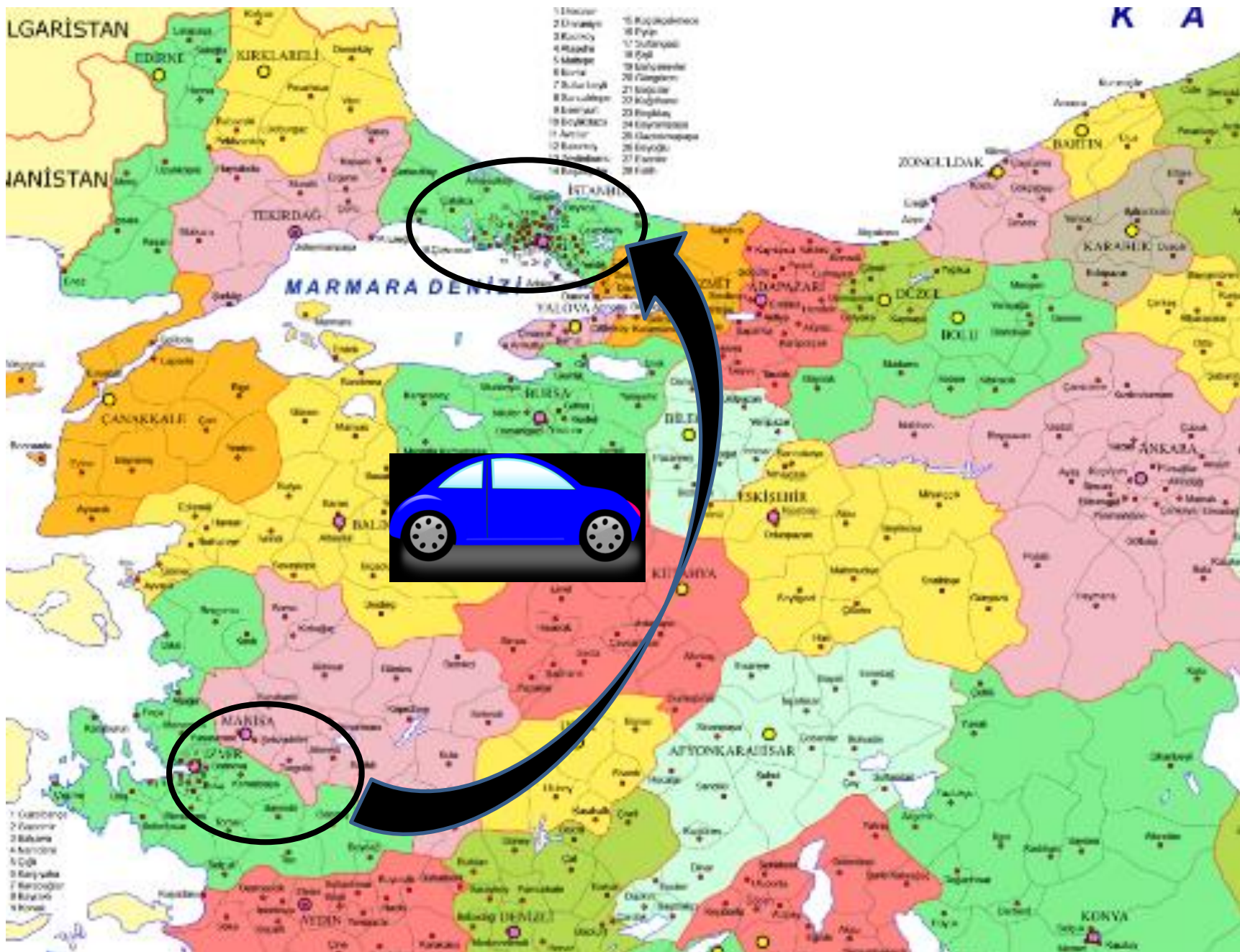


Olgu

- İlk olarak 9-10 ay önce
- Ayak plantar yüzde 3.metatars eklem hizasında yara
- Hasta önemsemiyor
- Aktif çalışmaya devam ediyor.
- Yara ara ara küçülmekte, tekrarlamakta

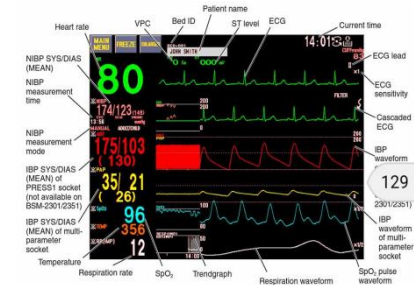
- Son 2 ay;
Yarada genişleme, akıntı
- Sonrasında kötü koku
- GD bozukluğu, iştahsızlık





Olgu

- Genel durumu orta
- Konfüze ve uykuya meyilli
- Ateş 38.3 °C, TA 90/50 mm/Hg, Nb: 140/dk
- Takipneik solunum (SS: 24/dk)
- İdrar çıkışı az



	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
WBC (10 ³ /mm ³)	27.5	35.9	23.9	21.7	15.7	12	7	12.8	10.3
Hgb (g/dl)	10.1	11	9.9	8.4	8.8	9.7	7.5	8.8	10.2
Plt (10 ³ /mm ³)	439	571	438	549	384	324	158	429	421
CRP (mg/dl) (0-8)	209	149	159	124	97	98	62	29	34
ESR (mm/sa)	106	91	101	95	68			57	55
Prokalsitonin (ng/ml)	5.8	2.7	1.1	0.73	0.34	0.28	0.22	0.25	0.18
PH.	7.23	7.21	7.32	7.35			7.33		
PCO2	30	24.6	29.3	31.5			51		
HCO3	12	9.4	14.7	16.9			26.6		
PO2	56	Sat O2: %85-88							

	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
Glukoz (mg/dl)	310	223	288	52	34	264	103	191	150
Üre (mg/dl)	235	262	187	179	125	182	127	178	204
Kreatinin (mg/dl)	4.6	5.1	3.9	3.7	4.7	3.1	2.5	2.7	3.3
AST (U/L)	56	29	19	20	22	33	81	22	18
ALT (U/L)	49	38	13	13	14	20	36	23	11
ALP (U/L)	368	394	240	220	183	166	442	353	248
GGT (U/L)	61	79	97	83	61	53	104	89	67
Na (mmol/L)	125	132	136	136	132	142	140	135	142
K (mmol/L)	4.2	3.5	3.9	4.2	4.7	4.8	5.8	5.7	5.3
Ca (mg/dl)	8.2	8.3	8	7.7	8.2	7.9	8	8.4	8.8
Alb (g/dl)	2.1	2.2	2.5	2.3	3.1	2.2	2.44	3.15	3



- İlk önce hastayı bir bütün olarak,
- Sonra etkilenmiş ekstremitayı,
- En son infekte yarayı değerlendir.
(Güçlü öneri, düşük kanıt düzeyi)



İnfeksiyon Şüpheli Hasta

Evet

qSOFA ≥ 2 ?

Evet

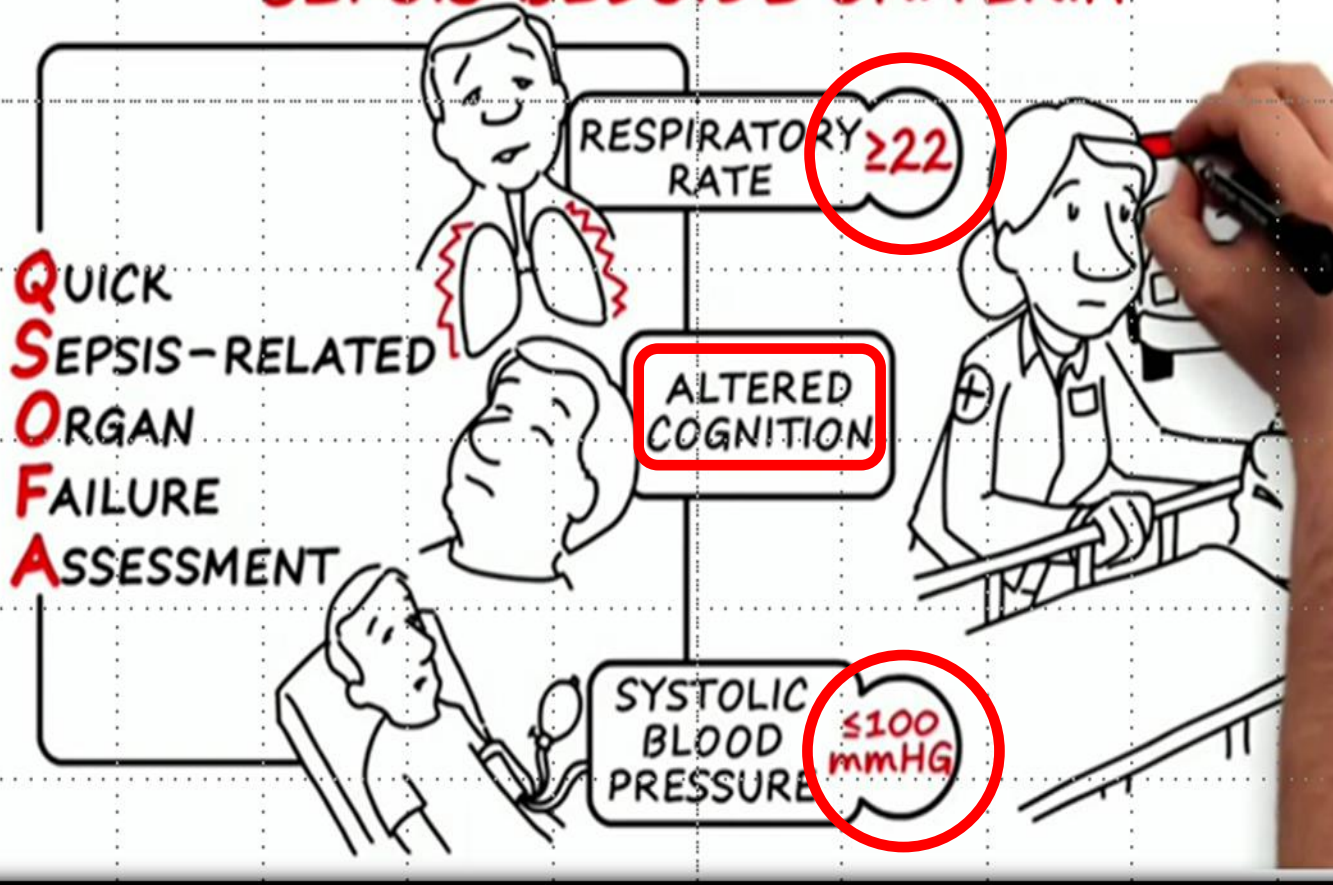
Hayır

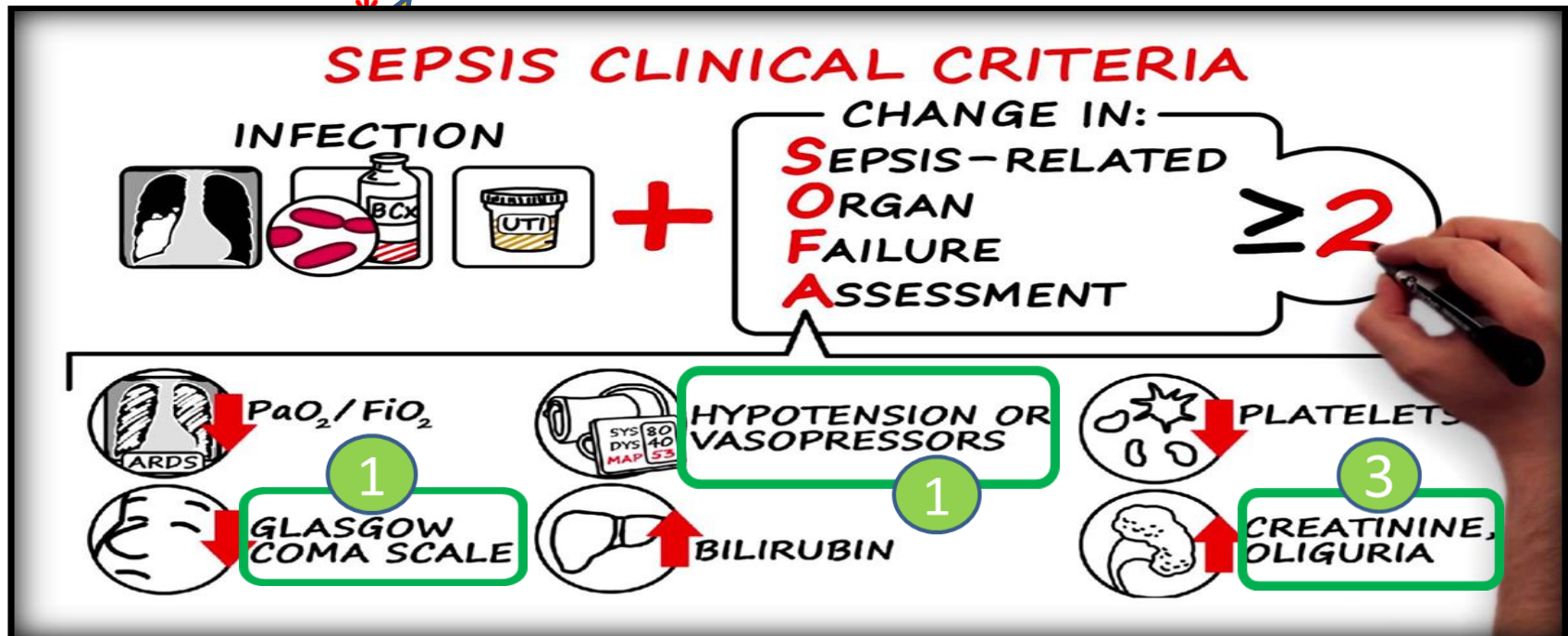
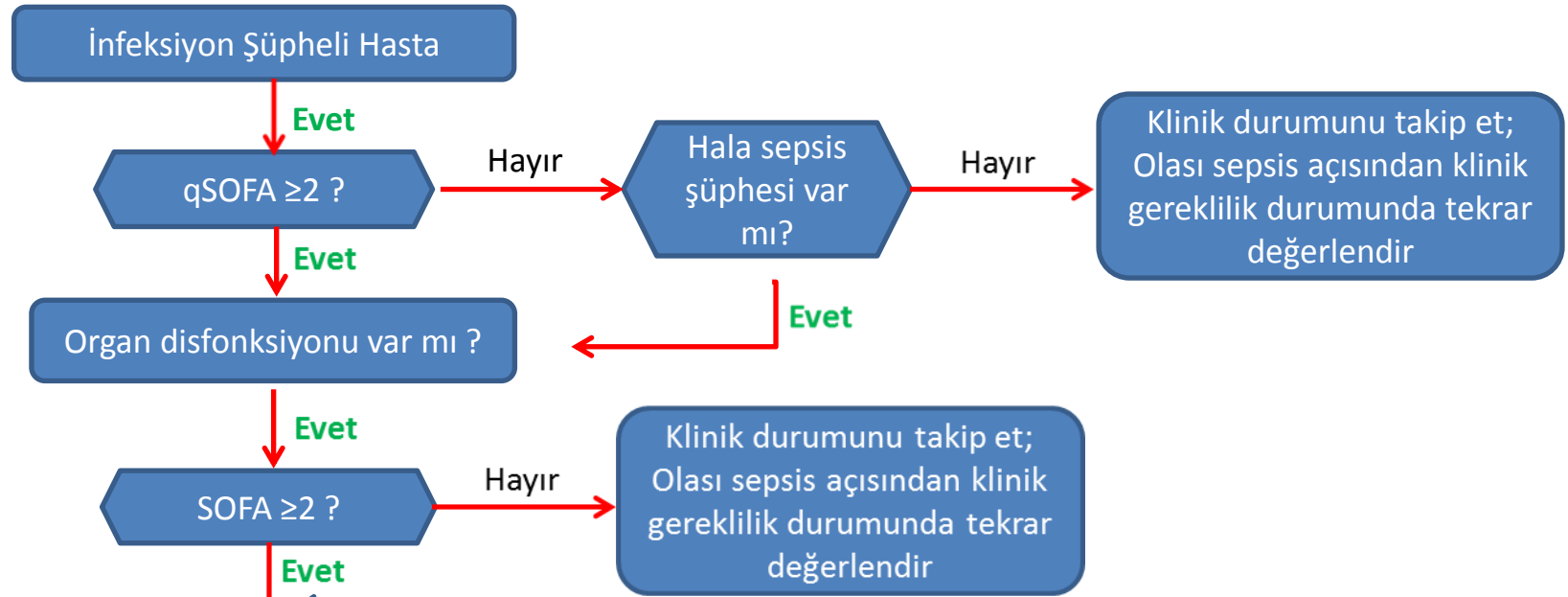
Hala sepsis
şüphesi var
mı?

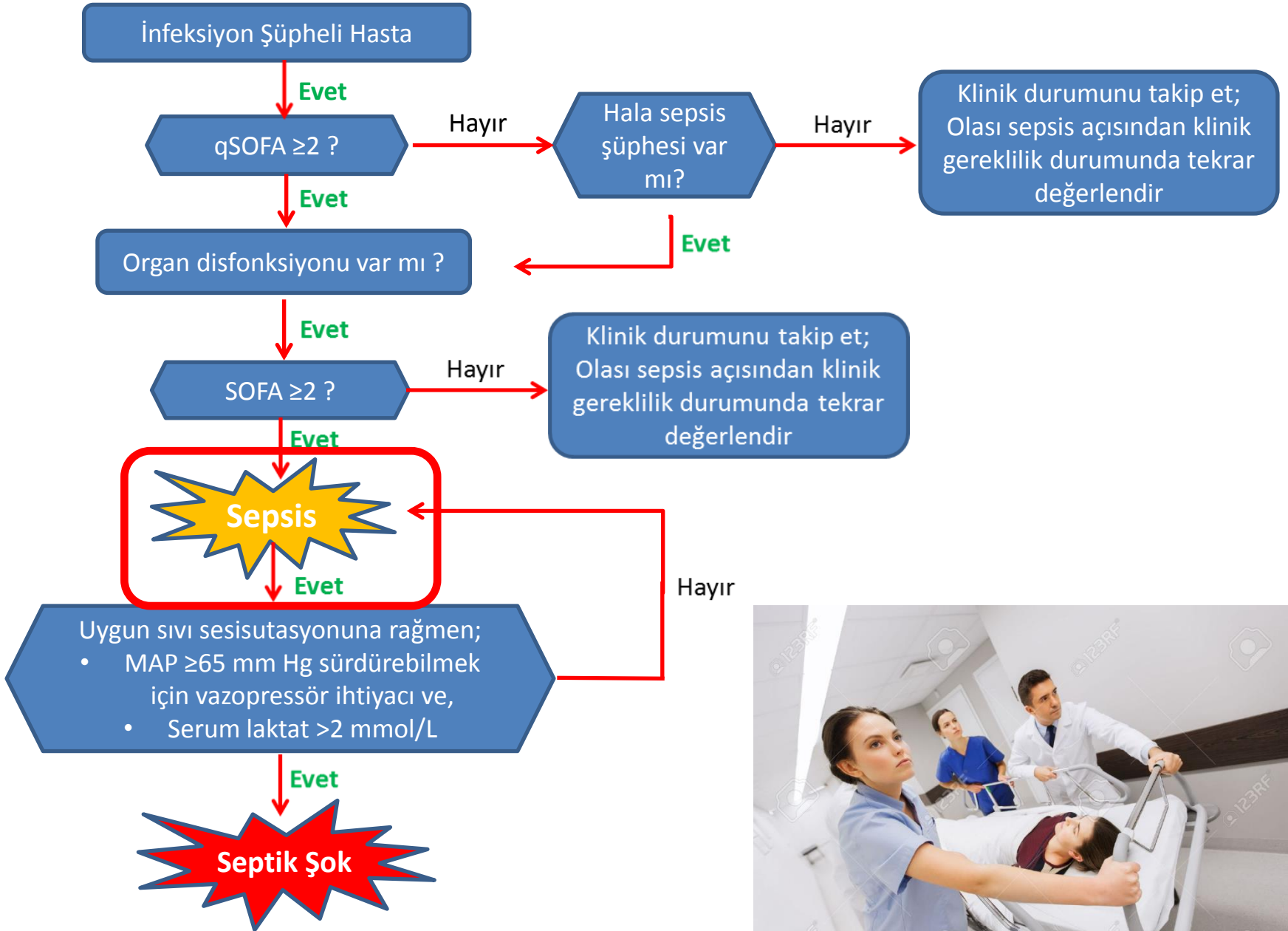
Hayır

Klinik durumunu takip et;
Olası sepsis açısından klinik
gereklik durumunda tekrar
değerlendir

SEPSIS BEDSIDE CRITERIA







Ciddi Diyabetik Ayak Enfeksiyonlarda Ampirik Tedavi Yaklaşımı

- Tedavi öncesi derin **doku kültürü**
- Parenteral, geniş spektrumlu ampirik tedavi
- **Gr (+) kok** ve gerekli ise **MRSA'yı kapsayan**
- Pseudomonas için risk faktörleri

- Hastane yatış öyküsü
- Geniş spektrumlu antibiyotik kullanımı
- Eşlik eden pulmoner hastalıklar (Kistik fibroz, bronşiektazi...)
- İmmünoyetersizlik (Malignite, aplastik anemi...)
- Kortikosteroid kullanımı

Ciddi Diyabetik Ayak Enfeksiyonlarda Ampirik Tedavi Yaklaşımı

- Tedavi öncesi derin doku kültürü
- Parenteral, geniş spektrumlu ampirik tedavi
- Gr (+) kok ve sadece gerektiğinde MRSA'yı kapsayan
- Pseudomonas için risk faktörleri
- **Anaerob etkenler ?**



The role of anaerobes in diabetic foot infections.

Charles PG¹, Uçkay I², Kressmann B³, Emonet S⁴, Lipsky BA⁵.

- Anaerobik etkenlerin sıklığı belirsiz, değişkenlik göstermekte
- **İnfeksiyonun şiddeti**; ciddi, iskemik, nekrotik yaralar
Örnekleme; yüzeysel sürüntü, derin aspirat ve derin doku
Uygun transport
Kültür teknikleri ile direk ilişkili
- Ortalama %11, ağırlıklı ortalama %7.7, %0-79 (min-max)
- Türkiye çalışmaları; %4, %32, %5, %6
- *Bacteroides* spp. ve *Peptostreptococcus* spp. en sık
- İmipenem ve metronidazol en etkili

Ciddi Diyabetik Ayak Enfeksiyonlarda Ampirik Tedavi Yaklaşımı

- Tedavi öncesi derin doku kültürü
- Parenteral, geniş spektrumlu ampirik tedavi
- Gr (+) kok ve sadece gerektiğinde MRSA'yı kapsayan
- Pseudomonas için risk faktörleri
- Anaerob etkenler
- **Yerel kültür ve duyarlılık sonuçları !!**

Influence of multidrug resistant organisms on the outcome of diabetic foot infection.

Saltoğlu N¹, Ergonul O², Tulek N³, Yemisen M⁴, Kadanali A⁵, Karagoz G⁵, Batirel A⁶, Ak O⁶, Sonmezer C³, Eraksoy H⁷, Cagatay A⁷, Surme S⁴, Nemli SA⁸, Demirdal T⁸, Coskun O⁹, Ozturk D¹⁰, Ceran N¹⁰, Pehlivanoglu F¹¹, Sengoz G¹¹, Aslan T¹², Akkoyunlu Y¹³, Oncul O¹⁴, Ay H¹⁴, Mulazimoglu L¹⁵, Erturk B¹⁵, Yilmaz F¹⁶, Yoruk G¹⁷, Uzun N¹⁸, Simsek F¹⁹, Yildirmak T¹⁹, Yasar KK¹¹, Sonmezoglu M²⁰, Küçükardali Y²⁰, Tuna N²¹, Karabay O²¹, Ozgunes N¹⁸, Sargin F¹⁶; Turkish Society of Clinical Microbiology and Infectious Diseases, Diabetic Foot Infections Study Group.

Author 120

Abstract

OBJECTIVE

METHODS:

was defined
were followe

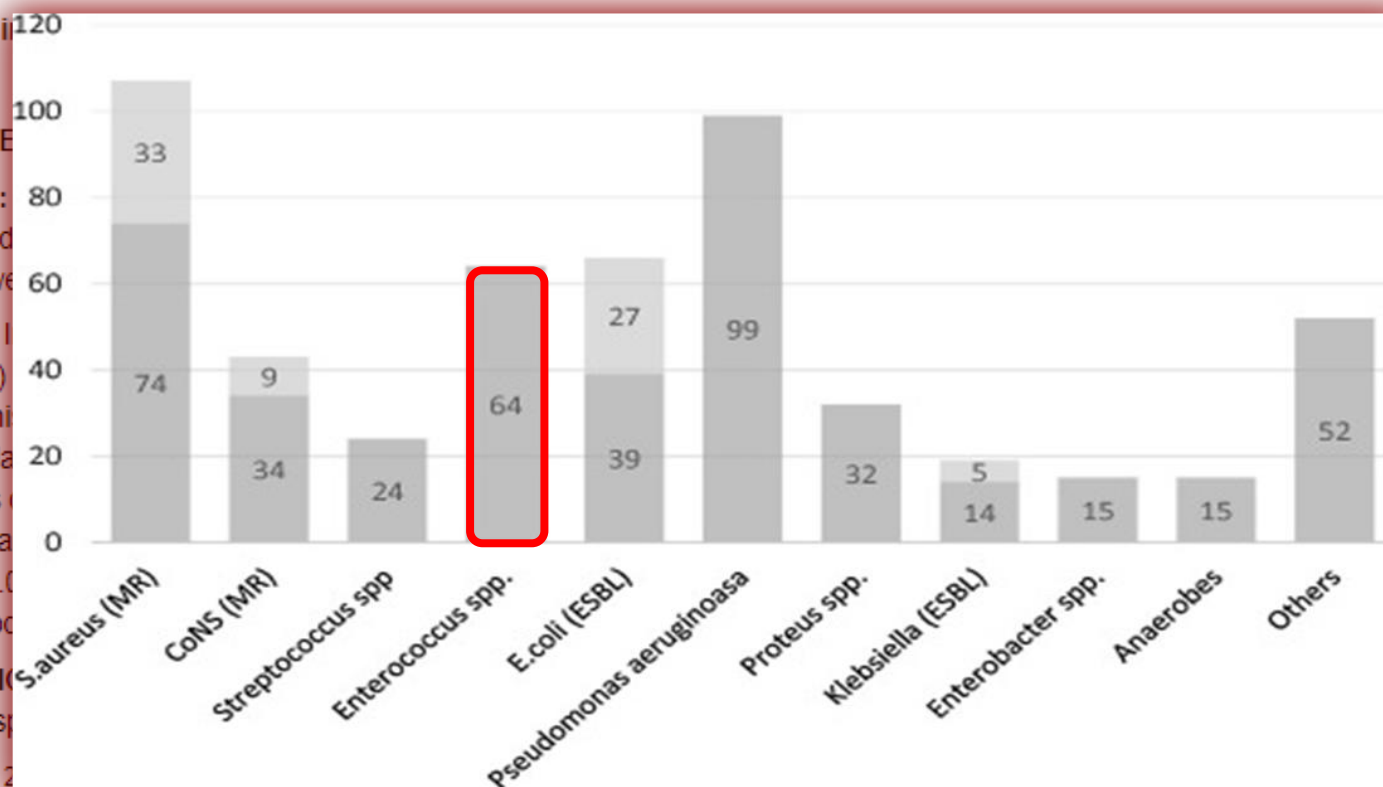
RESULTS:

in 85 (11%)
microorgani
aureus isola
(GNB) was
had major a
38.15, p=0.0
Staphylococ

CONCLUSI

Klebsiella sp

Copyright © 2



organisms.
015. Infection
ed. The patients
was diagnosed
mon
ylococcus
ve bacteria
ns, 127 (16%)
8.3, CI: 1.82-
p=0.05). MR
mon agent, and

Causative pathogens and antibiotic resistance in diabetic foot infections: A prospective multi-center study.

Hatipoglu M¹, Mutluoglu M², Turhan V³, Uzun G⁴, Lipsky BA⁵, Turk-Day Study Group, Sevim E⁶, Demiraslan H⁷, Eryilmaz E⁷, Ozuguz C⁸, Memis A², Ay H², Arda B⁹, Uysal S⁹, Motor VK¹⁰, Kader C¹¹, Erturk A¹², Coskun O¹³, Duygu F¹⁴, Guler S¹⁵, Altay FA¹⁶, Ogutlu A¹⁷, Bolukcu S¹⁸, Yildiz S⁴, Kandemir O¹⁹, Aslaner H²⁰, Polat A²⁰, Karahocagil MK²¹, Yasar KK²², Sehmen E²³, Kilic S²³, Sunbul M²⁴, Gencer S²⁵, Bozkurt F²⁶, Yanik T²⁴, Oztoprak N²⁷, Batirel A²⁵, Sozen H²⁸, Kilic I²⁹, Celik I²⁹, Ay B³⁰, Tosun S³⁰, Kadanali A³¹, Comoglu S³¹, Denk A³², Hosoglu S²⁶, Aydin O³³, Elaldi N³⁴, Akalin S³⁵, Kandemir B³⁶, Akbulut A³², Demirdal T³⁷, Balik R³⁷, Azak E³⁸, Sengoz G³⁹.

Table 2. Frequency of isolation of microorganisms from wounds of patients with a diabetic foot infection

Bacteria	PEDIS Grade 2 % (N)	PEDIS Grade 3 % (N)	PEDIS Grade 4 % (N)	TOTAL % (N)
Gram-positives	31.03 (18)	38.22 (99)	34.29 (24)	36.43 (141)
<u><i>Staphylococcus aureus</i> (total)</u>	13.79 (8)	12.36 (32)	5.71 (4)	<u>11.37 (44)</u>
-Methicillin-sensitive	13.79 (8)	10.42 (27)	2.86 (2)	9.56 (37)
-Methicillin-resistant	0	1.93 (5)	2.86 (2)	<u>1.81 (7)</u>
<u><i>Enterococcus</i> spp.</u>	6.90 (4)	10.81 (28)	10 (7)	<u>10.08 (39)</u>
<i>Streptococcus</i> spp.	5.17 (3)	7.72 (20)	7.14 (5)	7.24 (28)
Coagulase-negative <i>Staphylococcus</i> spp.	5.17 (3)	5.79 (15)	10 (7)	6.46 (25)
Other gram-positives	0	1.54 (4)	1.43 (1)	1.29 (5)
Gram-negatives	63.79 (37)	59.46 (154)	60 (42)	60.21 (233)
<i>Escherichia coli</i>	12.07 (7)	15.83 (41)	14.29 (10)	14.99 (58)
<i>Pseudomonas aeruginosa</i>	12.07 (7)	13.90 (36)	7.14 (5)	12.40 (48)
<i>Proteus</i> spp.	13.79 (8)	9.27 (24)	7.14 (5)	9.56 (37)
<i>Morganella morganii</i>	5.17 (3)	4.63 (12)	5.71 (4)	4.91 (19)
<i>Enterobacter</i> spp.	5.17 (3)	4.25 (11)	4.29 (3)	4.39 (17)
<i>Klebsiella</i> spp.	1.72 (1)	3.47 (9)	4.29 (3)	3.36 (13)
<i>Acinetobacter</i> spp.	5.17 (3)	2.32 (6)	2.86 (2)	2.84 (11)
<i>Serratia</i> spp.	1.72 (1)	1.16 (3)	2.86 (2)	1.55 (6)
<i>Citrobacter</i> spp.	0	1.16 (3)	4.29 (3)	1.55 (6)
Other gram-negatives	6.90 (4)	3.47 (9)	7.14 (5)	4.65 (18)
Other organisms				
<i>Candida</i> spp.	1.72 (1)	1.54 (4)	2.86 (2)	1.81 (7)
<i>Candida albicans</i>	3.45 (2)	0.77 (2)	0	1.03 (4)
<i>Finegoldia magna</i>	0	0	1.43 (1)	0.26 (1)
<i>Hafnia alvei</i>	0	0	1.43 (1)	0.26 (1)
Total	100 (58)	100 (259)	100 (70)	100 (387)

Enterococcus spp. izolatlarının ASP' ye göre antibiyotik direnç durumu.

Grup	Antibiyotik	Direnç Oranı (%)		
		Toplam		
		<u>İzolat sayısı</u> (n)	Oran (%)	95% CI
A	AMPİSİLİN	5258	53,794	44,227 to 63,223
	PENİSİLİN	2431	66,484	53,257 to 78,510
B	VANKOMİSİN	9208	4,374	2,911 to 6,119
	LİNEZOLİD	4478	0,835	0,350 to 1,524
C	YD GENTAMİSİN	5079	43,964	37,690 to 50,336
	YD STREPTOMİSİN	4397	45,752	39,563 to 52,006
U	SİPROFLOKSASİN	2947	53,702	43,781 to 63,477
	LEVOFLOKSASİN	542	41,870	27,037 to 57,497
	TETRASİKLİN	1682	52,211	43,799 to 60,560
Diğer	TEİKOPLANİN	5057	3,404	1,707 to 5,654
	ERİTROMİSİN	2721	73,015	66,126 to 79,387
	MOKSİFLOKSASİN	804	71,206	44,154 to 91,888
	KO-TRİMAKSAZOL	1315	90,296	75,944 to 98,545
	TİGESİKLİN	1119	0,356	0,0929 to 0,788

Olgu

Ampirik Tedavi- Yaygın Etkenler		Meropenem		Daptomisin
Gr (+)	Streptokoklar			
	Stafilokoklar		MRSA	
	<i>Enterococcus</i> spp (VRE)	<i>E.fecalis</i>	<i>E. faecium</i>	
Gr (-)	<i>Enterobacteriaceae</i> (ESBL)			
	<i>Pseudomonas</i> spp. (IBL)			
Anaerob	<i>Peptostreptococcus</i>			
	<i>Bacteroides</i>			



**Valide bir yara sınıflama
sistemi kullanılmalı...**



Wagner classification of diabetic foot ulcers

Grade 0

No ulcer in a high-risk foot



Grade 1

Superficial ulcer involving the full skin thickness but not underlying tissues



Grade 2

Deep ulcer, penetrating down to ligaments and muscle, but no bone involvement or abscess formation



Grade 3

Deep ulcer with cellulitis, abscess formation, often with osteomyelitis



Grade 4

Extensive gangrene involving the whole foot



MD:A.N.

5

PEDIS classification system.

Grade	Perfusion	Extent	Depth	Infection	Sensation	Score
1	No PAD	Skin	Skin intact	None	No Loss	0
2	PA	Partial	Partial	Surface	Loss	1
3			Partial, muscle, tendon	Abscess, Fascitis, Septic arthritis		2
4		>3cm ²	Bone or joint	SIRS		3

4

The University of Texas Classification System for Diabetic Foot Wounds

Grade/Depth
"How deep is the wound?"

0

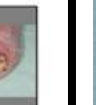
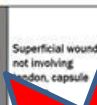
1

2

3

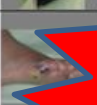
A

Pre- or post ulcerative lesion completely epithelialised



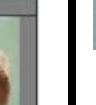
B

With infection



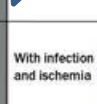
C

With ischemia



D

With infection and ischemia



3D

Table 1. The classification systems for defining the presence and severity of an infection of the foot in a person with diabetes developed by the Infectious Diseases Society of America (IDSA) and the infection part of the PEDIS classification of the International Working Group on the Diabetic Foot (IWGDF) (29,30).

Clinical classification of infection, with definitions		IWGDF / IDSA classification
İnfeksiyon derecesi	Hastaneye Yatış Gereksinimi	Amputasyon oranı
Yok	%0	%3
Hafif	%4	%3
Orta	%52	%46
Şiddetli	%89	%70
* Lavery LA, Armstrong DG, Murdoch DP, Peters EJ, Lipsky BA. Validation of the Infectious Diseases Society of America's diabetic foot infection classification system. Clin Infect Dis 2007; 44:562–5		

- No systemic signs or symptoms of infection (see below)

- Any foot infection with the systemic inflammatory response syndrome (SIRS), as manifested by ≥ 2 of the following:
 - Temperature $>38^{\circ}$ or $<36^{\circ}$ Celsius
 - Heart rate >90 beats/minute
 - Respiratory rate >20 breaths/minute or $\text{PaCO}_2 < 4.3$ kPa (32 mmHg)
 - White blood cell count $>12,000$ or $<4,000/\text{mm}^3$, or $>10\%$ immature (band) forms

4 (Severe infection)

Note: *In any direction, from the rim of the wound; The presence of clinically significant foot ischemia makes both diagnosis and treatment of infection considerably more difficult.

Diyabetik Ayak Enfeksiyonu Tedavisi

- Selülit ve yumuşak doku enfeksiyonundan osteomyelite kadar değişen spektruma,

Ayakta beslenme bozukluğunun olup olmamasına göre;



- Özellikle sepsis gibi ciddi enfeksiyon ve iskemi varlığında **agresif cerrahi yaklaşım** önceliklidir.



	Post-op Mortalite
İlk 30 gün *	%10
İlk yıl	%10-50
5 yıl içinde	%30-80

* Özellikle preoperatif sepsis varlığında acil cerrahi prosedür uygulanan hastalarda yüksek mortalite

**Ole Hoffstad, Nandita Mitra, Jonathan Walsh, and David J. Margolis, Diabetes, Lower-Extremity Amputation, and Death. Diabetes Care 2015;38:1852-1857



	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
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Prokalsito nin (ng/ml)	5.8	2.7	1.1	0.73	0.34	0.28	0.22	0.25	0.18
PH.	7.23	7.21	7.28	7.25	7.35		7.33		
PCO2	30	24.6	29.3	23.1	31.5		51		
HCO3	12	9.4	14.7	12.8	16.9		26.6		

Pre-op Değerlendirme

- Kardiyoloji
- Nefroloji
- Endokrinoloji
- Göğüs hastalıkları
- İç hastalıkları
- Kalp damar cerrahisi

Orta – yüksek risk ile opere edilebilir.

Diyabetik ayak enfeksiyonu nedeni ile amputasyon planlanan hasta bt anjiyografi sonucu ile değerlendirildi. Hastanın BT anjiyografisinde sağ alt ekstremitte ATA ve peroneal arterde distale kadar akım izlenmektedir. PTA proksimalinde oklüzyon mevcut olup sonrasında kolleteral akımla revaskülerize olmaktadır. Hastanın mevcut vasküler yapısı ile, **vasküler açıdan nekrotik ve enfekte dokuların debridmanı önerilir.**

Antibiyotik duyarlılık testi (Doku Biyopsi kültürü)

Kültür Sonucu

Enterococcus faecium üredi

Antibiyotik Duyarlılığı

Enterococcus faecium

Amoxicilin/Clavulanic A.

Dirençli

Ampicillin

Dirençli

Mik Değeri: ≥ 32

Ampicillin/Sulbactam

Dirençli

Linezolid

Duyarlı

Mik Değeri: 2

Siprofloksasin

Dirençli

Mik Değeri: ≥ 8

Teicoplanin

Duyarlı

Mik Değeri: $\leq 0,5$

Tigecycline

Duyarlı

Mik Değeri: $\leq 0,12$

Trimethoprim/Sulfamethoxazole

Dirençli

Mik Değeri: 40

Vancomycin

Duyarlı

Mik Değeri: $\leq 0,5$

Antibiyotik duyarlılık testi (Doku Biyopsi Kültürü)

Kültür Sonucu

Escherichia Coli üredi

Antibiyotik Duyarlılığı

Escherichia Coli

Amikacin

Orta duyarlı

Aztreonam

Dirençli

Gentamicin

Duyarlı

İmipenem

Duyarlı

Kolistin

Duyarlı

Levofloksasin

Dirençli

Meropenem

Duyarlı

Netilmicin

Dirençli

Piperacilin

Dirençli

Piperacilin/Tazobactam

Orta duyarlı

Sefepim

Dirençli

Seftazidim

Dirençli

Siprofloksasin

Dirençli

Tigesiklin

Duyarlı

Tobramisin

Dirençli

Trimethoprim - Sulphamethoxazole

Dirençli

Antibiyotik duyarlılık testi**(Kan kültürü)**

Kültür Sonucu

Enterococcus faecium üredi

Antibiyotik Duyarlılığı

Enterococcus faecium

*Amoxicilin/Clavulanic A.**Dirençli**Ampicillin**Dirençli**Mik Değeri: >=32**Ampicillin/Sulbactam**Dirençli*LinezolidDuyarlı*Mik Değeri: 2**Siprofloksasin**Dirençli**Mik Değeri: >=8*

Teicoplanin

Duyarlı

Mik Değeri: <=0,5

Tigecycline

Duyarlı

*Mik Değeri: <=0,12**Trimethoprim/Sulfamethoxazole**Dirençli**Mik Değeri: 40*

Vancomycin

Duyarlı

Mik Değeri: <=0,5

Systematic Review and Meta-Analysis of Linezolid versus Daptomycin for Treatment of Vancomycin-Resistant Enterococcal Bacteremia

Eleni P. Balli,^a Chris A. Venetis,^b Spiros Miyakis^{a,c}

- VRE bakteriyemili 967 hasta
- 30 günlük genel mortalite
- infeksiyon ilişkili mortalite
- VRE bakteriyemi rekürrens oranları



Daptomisin alanlarda



Yoğun bakım nakil

	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
WBC (10 ³ /mm ³)	27.5	35.9	23.9	21.7	15.7	12	7	12.8	10.3
Hgb (g/dl)	10.1	11	9.9	8.4	8.8	9.7	7.5	8.8	10.2
Plt (10 ³ /mm ³)	439	571	438	549	384	324	158	429	421
CRP (mg/dl) (0-8)	209	149	159	124	97	98	62	29	34
ESR (mm/sa)	106	91	101	95	68			57	55
Prokalsito nin (ng/ml)	5.8	2.7	1.1	0.73	0.34	0.28	0.22	0.25	0.18
PH.	7.23	7.21	7.32	7.25	7.35		7.33		
PCO2	30	24.6	29.3	23.1	31.5		51		
HCO3	12	9.4	14.7	12.8	16.9		26.6		

Yoğun bakım nakil

	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
Glukoz (mg/dl)	310	223	288	52	34	264	103	191	150
Üre (mg/dl)	235	262	187	179	125	182	127	178	204
Kreatinin (mg/dl)	4.6	5.1	3.9	3.7	4.7	3.1	2.5	2.7	3.3
AST (U/L)	56	29	19	20				22	18
ALT (U/L)	49	38	13	13					11
ALP (U/L)	368	394	240	220				353	248
GGT (U/L)	61	79	97	83				89	67
Na (mmol/L)	125	132	136	136	132	142	140	135	142
K (mmol/L)	4.2	3.5	3.9	4.2	4.7	4.8	5.8	5.7	5.3
Ca (mg/dl)	8.2	8.3	8	7.7	8.2	7.9	8	8.4	8.8
Alb (g/dl)	2.1	2.2	2.5	2.3	3.1	2.2	2.44	3.15	3

- Diyaliz
- Pozitif inotrop
- Albumin
- Non-invaziv O2

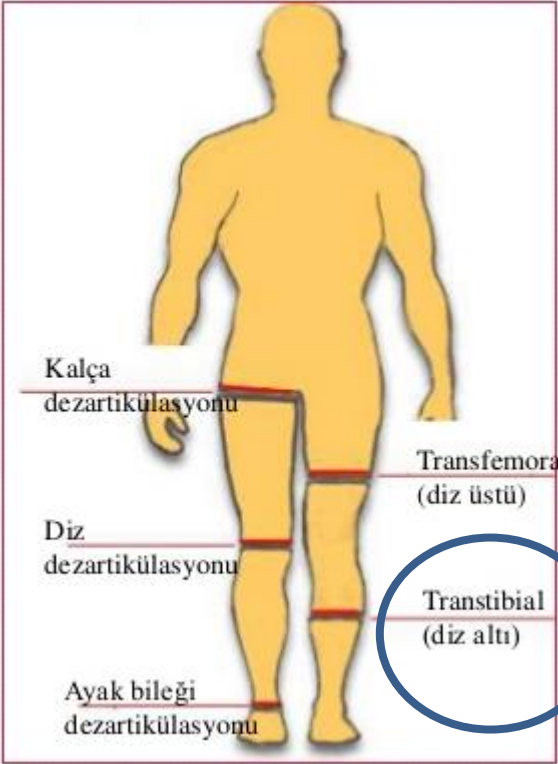
Enf. Serv.

	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17
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Kreatinin (mg/dl)	4.6	5.1	3.9	3.7	4.7	3.1	2.5	2.7	3.3
AST (U/L)	56	29	19	20	22	33	81	22	18
ALT (U/L)	49	38	13	13	14	20	36	23	11
ALP (U/L)	368	394	240	220	183	166	442	353	248
GGT (U/L)	61	79	97	83	61	53	104	89	67
Na (mmol/L)	125	132	136	136	132	142	140	135	142
K (mmol/L)	4.2	3.5	3.9	4.2	4.7	4.8	5.8	5.7	5.3
Ca (mg/dl)	8.2	8.3	8	7.7	8.2	7.9	8	8.4	8.8
Alb (g/dl)	2.1	2.2	2.5	2.3	3.1	2.2	2.44	3.15	3

Amputasyon

	25.05.17	27.05.17	29.05.17	01.06.17	05.06.17	08.06.17	12.06.17	19.06.17	23.06.17	
WBC (10 ³ /mm ³)	27.5	35.9	23.9	21.7	15.7	12	7	12.8	10.3	
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Antibiyotik Tedavi Süresi



IWGDF Guidance on the diagnosis and management of foot infections in persons with diabetes

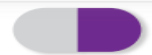
Prepared by the IWGDF Working Group on Foot Infections

For diabetic foot osteomyelitis, we recommend a course of antibiotic therapy for patients who do not undergo resection of infected tissue. **1 week of antibiotic treatment** if all infected tissue is removed.

TABURCU
OLANA KADAR
DEVAM !

Journal of
Clinical Pharmacy and Therapeutics

Journal of Clinical Pharmacy and Therapeutics 2013, 38, 85–88



doi: 10.1111/jcpt.12034

Commentary

How long to treat with antibiotics following amputation in patients with diabetic foot infections? Are the 2012 IDSA DFI guidelines reasonable?

What is new and Conclusion: Given the general lack of data, we recommend that post-operative treatment duration be individualized, and, until further studies are done, it seems reasonable to adhere to the recommendation provided by the **2012 IDSA DFI guidelines for a 2–5 day** course of antibiotic therapy postoperatively when no residual infected tissue remains.

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Alb (g/dl)	2.1	2.2	2.5	2.3	3.1	2.2	2.44	3.15	3

Sonuç

- Ciddi – septik hastalarda amipirik tedavi
- MRSA değil ama Enterokoklardaki direnç durumu Türkiye için ciddi bir tehlike
- Cerrahi; mümkün olan en kısa sürede
- Antibiyotik tedavi süresi
- **Bilinçlendirme – eğitim**

