



**6. TÜRKİYE
EKMUD
KONGRESİ**

11 - 15 Mayıs 2016
Kaya Kongre Merkezi
Palazzo & Riu Belek Hotelleri, Antalya



ENFEKSİYON HASTALIKLARINDA LİTERATÜRDE SON BİR YIL "TÜRKİYE'DEN YAYINLAR"

Doç. Dr. Vuslat KEÇİK BOŞNAK
Gaziantep Üniversitesi Tıp Fakültesi
Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji
Anabilim Dalı, Gaziantep

Search

All Databases



My Tools

Search History

Marked List

Welcome to the new Web of Science! [View a brief tutorial.](#)

Basic Search



Infectious diseases, Turkey, 2015, 2016



Topic



Search

[Click here for tips to improve your search.](#)

[+ Add Another Field](#) | [Reset Form](#)

TIMESPAN

All years

From 1966 to 2016

[▶ MORE SETTINGS](#)

[▶ Customer Feedback & Support](#)

[▶ Additional Resources](#)

[▶ What's New in Web of Science?](#)

[▶ Customize your Experience](#)

- Article types
- Clinical Trial
- Review
- Customize ...

Summary 20 per page Sort by Most Recent

Send to: Filters: Manage Filters

Search results

Items: 1 to 20 of 66

<< First < Prev Page 1 of 4 Next > Last >>

1. [Publication rates of full-text journal articles converted from abstracts presented during the 22\(nd\) Turkish National Urology Congress.](#)

Kocaaslan R, Kayali Y, Tok A, Tepeler A.
Turk J Urol. 2016 Mar;42(1):16-20. doi: 10.5152/tud.2016.75233.
PMID: 27011876 **Free PMC Article**
[Similar articles](#)

2. [Infections in travellers returning to Turkey from the Arabian peninsula: a retrospective cross-sectional multicenter study.](#)

Erdem H, Ak O, Elaldi N, Demirdal T, Hargreaves S, Nemli SA, Cag Y, Ulug M, Naz H, Gunal O, Sirmatel F, Sipahi OR, Alpat SN, Ertem-Tuncer G, Sozen H, Evlice O, Meric-Koc M, Dogru A, Koksaldi-Motor V, Tekin R, Ozdemir D, Ozturk-Engin D, Savasci U, Karagoz E, Cekli Y, Inan A.
Eur J Clin Microbiol Infect Dis. 2016 Mar 10. [Epub ahead of print]
PMID: 26964538
[Similar articles](#)

3. [Who can get the next Nobel Prize in infectious diseases?](#)

Ergonul O, Yalcin CE, Erkent MA, Demirci M, Uysal SP, Ay NZ, Omeroglu A.
Int J Infect Dis. 2016 Apr;45:88-91. doi: 10.1016/j.ijid.2016.02.022. Epub 2016 Mar 2.
PMID: 26945715 **Free Article**
[Similar articles](#)

4. [Changes in the prevalence of HBV infection in pregnant women in Turkey between 1995 and 2015: a 20-year evaluation.](#)

Furuncuoglu Y, Bolukbas FF, Bolukbas C, Torun P, Ozturk R.
Postgrad Med J. 2016 Mar 3. pii: postgradmedj-2015-133876. doi: 10.1136/postgradmedj-2015-133876. [Epub ahead of print]
PMID: 26941270

- Text availability
- Abstract
- Free full text
- Full text
- PubMed Commons
- Reader comments
- Trending articles
- Publication dates
- 5 years
- 10 years
- Custom range...
- Species
- Humans
- Other Animals

Clear all
[Show additional filters](#)

New feature
Try the new Display Settings option - **Sort by Relevance**

Find related data
Database: Select
[Find items](#)

Search details
("communicable diseases"[MeSH Terms] OR ("communicable"[All Fields] AND "diseases"[All Fields])) OR "communicable diseases"[All Fields] OR
[Search](#) [See more...](#)

Recent Activity
[Turn Off](#) [Clear](#)

- Infectious diseases, Turkey, 2015,2016 (66) PubMed
- Crimean-Congo hemorrhagic fever in Turkey: Current status and future challenges. PubMed
- infectious diseases leblebicioglu turkey 2016 (9) PubMed
- infectious diseases Turkey 2016 (186) PubMed



INFECTIOUS DISEASES, 2016
VOL. 48, NO. 3, 215–221
<http://dx.doi.org/10.3109/23744235.2015.1107187>



ORIGINAL ARTICLE

A long-term survey of brucellosis: Is there any marker to predict the complicated cases?

Bircan Kayaaslan^a, Aliye Bastug^b, Emsal Aydın^c, Eragul Akıncı^b, Ayse But^b, Halide Aslaner^b, Meltem Arzu Yetkin^b and Hurrem Bodur^b

^aDepartment of Infectious Diseases and Clinical Microbiology, Yıldırım Beyazıt University, Faculty of Medicine, Ankara Atatürk Education and Research Hospital, Ankara, Turkey; ^bDepartment of Infectious Diseases and Clinical Microbiology, Ankara Numune Education and Research Hospital, Ankara, Turkey; ^cDepartment of Infectious Diseases and Clinical Microbiology, Kafkas University, Faculty of Medicine, Kars, Turkey

Brusellozun uzun dönem surveyi: Komplike vakaları belirlemede herhangi bir belirteç var mı?

ORIGINAL ARTICLE

A long-term survey of brucellosis: Is there any marker to predict the complicated cases?

Bircan Kayaaslan^a, Aliye Bastug^b, Emsal Aydin^c, Eragul Akinci^b, Ayse But^b, Halide Aslaner^b, Meltem Arzu Yetkin^b and Hurrem Bodur^b

^aDepartment of Infectious Diseases and Clinical Microbiology, Yıldırım Beyazıt University, Faculty of Medicine, Ankara Atatürk Education and Research Hospital, Ankara, Turkey; ^bDepartment of Infectious Diseases and Clinical Microbiology, Ankara Numune Education and Research Hospital, Ankara, Turkey; ^cDepartment of Infectious Diseases and Clinical Microbiology, Kafkas University, Faculty of Medicine, Kars, Turkey

- Araştırmacılar; komplike ve komplike olmayan bruselloz olgularını epidemiyolojik, klinik ve labaratuvar bulguları açısından retrospektif olarak karşılaştırarak, komplike bruselloz vakalarını tespit etmede bir belirteç var mı sorusunu yanıtlamaya çalışmışlardır
- Çalışmaya iki ayrı merkezde takip edilen toplam 700 hasta verileri dahil edilmiştir

Table 1. Clinical and laboratory findings of the cases according to clinical type.

Characteristics	Acute (n, %)	Sub-acute (n, %)	Chronic (n, %)	Relapse (n, %)	<i>p</i>
Number of patients	517 (73.8)	101 (14.4)	20 (2.9)	62 (8.9)	<0.001
Sex, n (%)					
Male	281 (54.4)	52 (51.5)	15 (75.0)	35 (56.5)	0.278
Female	236 (45.6)	49 (48.5)	5 (25.0)	27 (43.5)	
Age, Mean ± SD	41.12 ± 16.95	47.21 ± 16.89	47.1 ± 14.29	47.24 ± 16.47	<0.001
Complication, n (%)					
Total	128 (24.7)	39 (38.6)	9 (45)	30 (48.3)	<0.00
Osteoarticular	96 (18.6)	29 (28.7)	8 (40.0)	21 (33.9)	0.002
Neurobrucellosis	17 (3.3)	4 (4.0)	0 (0.0)	5 (8.1)	0.199
Epididymo-orchitis	23 (8.2)	5 (9.6)	1 (6.7)	5 (14.3)	0.722
Hepatitis	6 (1.4)	4 (5.3)	1 (7.1)	0 (0.0)	0.056
Symptoms and signs, n (%)					
Fever at anamnesis	323 (62.6)	61 (60.4)	12 (60.0)	34 (54.8)	0.683
Fever at examination	134 (25.9)	43 (42.6)	9 (45.0)	22 (35.5)	0.002
Sweating	251 (48.5)	54 (53.5)	3 (15.0)	26 (41.9)	0.012
Malaise	283 (54.7)	53 (52.5)	11 (55.0)	29 (46.8)	0.683
Arthralgia	245 (47.4)	42 (41.6)	7 (35.0)	27 (43.5)	0.510
Myalgia	158 (30.6)	15 (14.9)	0 (0.0)	18 (29.0)	<0.001
Loss of weight	75 (14.5)	31 (30.7)	7 (35.0)	12 (19.4)	<0.001
Headache	126 (24.4)	31 (30.7)	7 (35.0)	16 (25.8)	0.440
Lumbar pain	163 (31.6)	48 (47.5)	9 (45.0)	31 (50.0)	0.001
Neurological disorder	16 (3.1)	5 (5.0)	0 (0.0)	8 (12.9)	0.006
Hip pain	65 (12.6)	20 (19.8)	2 (10.0)	13 (21.0)	0.099
Lack of appetite	115 (22.2)	37 (36.6)	4 (20.0)	17 (27.4)	0.020
Nausea	55 (10.6)	15 (14.9)	3 (15.0)	5 (8.1)	0.488
Splenomegaly	43 (8.3)	5 (5.0)	2 (10.0)	5 (8.1)	0.727
Hepatomegaly	58 (11.2)	12 (11.9)	4 (20.0)	9 (14.5)	0.599
Lymphadenopathy	20 (3.9)	4 (4.0)	1 (5.0)	2 (3.2)	1.000
Rash	7 (1.4)	2 (2.0)	0 (0.0)	1 (1.6)	0.899
Laboratory, n (%)					
Anaemia (Hgb g/dL) (<12 for females, <14 for male)	201 (39.3)	52 (51.5)	14 (70.0)	25 (40.3)	0.008
Leucopenia (<4.000/mm ³)	34 (50.7)	10 (66.7)	4 (80.0)	3 (33.3)	0.271
Leukocytosis (>11.000/mm ³)	33 (49.3)	5 (33.3)	1 (20.0)	6 (66.7)	
Thrombocytopenia (<150.000/mm ³)	48 (9.4)	10 (9.9)	1 (5.0)	9 (14.5)	0.536
Pancytopeni	10 (2.0)	1 (1.0)	1 (5.0)	1 (1.6)	0.672
ESR positive (>20 mm/h)	268 (57.4)	74 (74.0)	15 (75.0)	38 (62.3)	0.010
CRP positive (>5 mg/l)	353 (71.7)	89 (88.1)	16 (80.0)	41 (68.3)	0.004
Transaminase elevation	162 (36.7)	25 (33.3)	8 (57.1)	10 (22.7)	0.093
STA positive (≥1/160)	505 (97.9)	98 (97.0)	20 (100.0)	59 (95.2)	0.483
Blood culture positive	102 (39.2)	42 (45.2)	9 (45.0)	17 (34.7)	0.602

Table 4. Distribution of complications.

<u>Complication</u>	<u><i>n</i> (%)</u>
Osteoarthicular involvement	154 (22)
Spondylitis	102 (14.6)
Sacroileitis	40 (5.7)
Peripheral arthritis	19 (2.7)
Orchitis*	43 (11.2)
Neurobrucellosis	26 (3.7)
Hepatitis	13 (1.8)
Total	215 (30.7)

*Percentages reflect only male patients.

Table 2. Demographical and clinical characteristics of the patients and comparison of complicated and non-complicated cases.

Characteristics	All patients (n, %)	Patients without complication (n, %)	Patients with complication (n, %)	p-Value
Sex				
Male	383 (54.7)	259 (52.4)	124 (60.2)	0.060
Age, Mean (range)	41.5 (11–87)	39 (11–79)	46 (13–87)	0.007
Clinical form				
Acute	517 (73.8)	389 (78.7)	128 (62.1)	<0.001
Sub-acute	101 (14.4)	62 (12.6)	39 (18.9)	
Chronic	20 (2.9)	11 (2.2)	9 (4.4)	
Relapse	62 (8.9)	32 (6.5)	30 (14.6)	
Symptoms and signs				
Fever at anamnesis	430 (61.5)	308 (62.3)	122 (59.5)	0.483
Fever at examination	208 (29.7)	126 (25.5)	82 (39.8)	<0.001
Sweating	334 (47.7)	236 (47.8)	98 (47.6)	0.961
Malaise	376 (53.7)	294 (59.5)	82 (39.8)	<0.001
Myalgia	191 (27.3)	167 (33.8)	24 (11.7)	<0.001
Loss of weight	125 (17.9)	72 (14.6)	53 (25.7)	<0.001
Headache	180 (25.7)	135 (27.3)	45 (21.8)	0.130
Lack of appetite	173 (24.7)	75 (29.8)	48 (28.2)	0.735
Nausea	78 (11.1)	38 (15.1)	29 (17.1)	0.585
Splenomegaly	55 (7.9)	35 (7.1)	20 (9.7)	0.249
Hepatomegaly	83 (11.9)	51 (10.3)	32 (15.5)	0.053
Lymphadenopathy	27 (3.9)	16 (3.2)	11 (5.3)	0.188
Rash	10 (1.4)	9 (1.8)	1 (0.5)	0.176

Table 3. Laboratory results of the patients and comparison of complicated and non-complicated cases.

Characteristics	All patients (n, %)	Patients without complications (n, %)	Patients with complications (n, %)	p-value
WBC				
<4.000/mm ³	51 (7.3)	37 (7.6)	14 (6.8)	0.284
>11.000/mm ³	45 (6.5)	27 (5.5)	18 (8.7)	
Platelet				
<150.000/mm ³	68 (9.8)	50 (10.2)	18 (8.7)	0.542
Hgb g/dL				
<12 for females	292 (42.1)	180 (36.9)	112 (54.4)	<0.001
<14 for males				
Pancytopenia	13 (1.9)	10 (2.0)	3 (1.5)	0.764
ALT>40 IU/l	174 (30.3)	126 (30.7)	48 (29.4)	0.776
AST>40 IU/l	164 (28.9)	116 (28.7)	48 (29.4)	0.861
CRP				
>5 mg/l	499 (74.1)	333 (71)	166 (81.4)	0.005
ESR				
>20 mm/h	395 (61)	258 (58)	137 (67.5)	0.021
STA titer				
≥ 1/160	682 (97.6)	483 (97.8)	199 (97.1)	0.584
Positive blood culture	170 (40.2)	105 (45.7)	65 (33.9)	0.014

ORIGINAL ARTICLE

A long-term survey of brucellosis: Is there any marker to predict the complicated cases?

Bircan Kayaaslan^a, Aliye Bastug^b, Emsal Aydin^c, Eragul Akıncı^b, Ayse But^b, Halide Aslaner^b, Meltem Arzu Yetkin^b and Hurrem Bodur^b

^aDepartment of Infectious Diseases and Clinical Microbiology, Yıldırım Beyazıt University, Faculty of Medicine, Ankara Atatürk Education and Research Hospital, Ankara, Turkey; ^bDepartment of Infectious Diseases and Clinical Microbiology, Ankara Numune Education and Research Hospital, Ankara, Turkey; ^cDepartment of Infectious Diseases and Clinical Microbiology, Kafkas University, Faculty of Medicine, Kars, Turkey

SONUÇLAR

- Bruselloz vakaları sıklıkla **akut bruselloz** şeklinde tanı alıp, takip edilmektedir
- En sık komplikasyon **osteoartriküler tutulumdur**
- Koplikasyon sıklıkla; **subakut ve kronik** vakalarda oluşmaktadır
- Komplike vakaların çoğunda kas ağrısı, halsizlik gibi brusellozun klasik yakınmaları olmamakla birlikte **ateş** en sık görülen prediktif belirteçtir
- Komplike vakalarda kan kültürünün yeri sınırlıdır

RESEARCH

Open Access



The carbapenem-resistant *Enterobacteriaceae* threat is growing: NDM-1 epidemic at a training hospital in Turkey

Oguz Karabay^{1*}, Mustafa Altindis², Mehmet Koroglu², Onur Karatuna³, Özlem Akkaya Aydemir² and Ali Fuat Erdem⁴

Karbapenem dirençli *Enterobacteriaceae* tehdidi büyüyor: Türkiye'de bir üniversite hastanesinde New Delhi metallo- β -lactamase-1 (NDM-1) epidemisi.

- Araştırmacılar, Sakarya Üniversitesi Yoğun Bakım Ünitesi'nde Aralık 2014 ile Mart 2015 arasında 8 hastada NDM-1 üreten *Klebsiella pneumoniae* epidemisini irdelemişlerdir.



The carbapenem-resistant *Enterobacteriaceae* threat is growing: NDM-1 epidemic at a training hospital in Turkey

Oguz Karabay^{1*}, Mustafa Altindis², Mehmet Koroglu², Onur Karatuna³, Ozlem Akkaya Aydemir² and Ali Fuat Erdem⁴

Abstract

Background: Recently, new carbapenemases in *Enterobacteriaceae* strains and non-fermentative gram-negative bacilli have been reported. The New Delhi metallo- β -lactamase-1 (NDM-1) is a major problem around the world. The purpose of this article is to address the NDM-1 *Klebsiella pneumoniae* epidemic detected in eight cases in our hospital.

GEREÇ ve YÖNTEM

- Etkenin izolasyonu ve antimikrobiyal duyarlılık testi VITEK 2 otomatize sistem ve disk difüzyon testi (EUCAST kriterlerine göre yorumlanan) ile belirlenerek, karbapenem direnci E-test ile doğrulanmıştır
- Karbapenemaz üretimi fenotipik olarak CLSI kriterlerine göre modifiye Hodge testi ile metallo-beta-laktamaz aktivitesi kombine disk testi ile yapıldı

Table 1 Demographic, clinical, and laboratory data of patients

Patient	Age	Gender	Hospitalization reasons	Hospitalization start date	CR <i>K. pneumoniae</i> identification date	External centre	Isolated from	NDM/ NDM + OXA	Result
1	59	F	Chronic renal failure, diabetes	10.05.2014	29.12.2014	No	Blood	NDM	Dead
2	53	F	Over carcinoma	10.05.2014	15.01.2015	No	Blood	NDM	Dead
3	67	F	Chronic renal failure, diabetes	09.09.2014	03.01.2015	Istanbul Private Hospital	Blood	NDM + OXA-48	Dead
4	74	F	Cerebrovascular disease	24.09.2014	08.01.2015	Kocaeli University Hospital	Blood	NDM	Dead
5	88	M	Hip fracture	08.10.2014	30.12.2014	Istanbul Iklim Private Hospital	Central catheter	NDM	Dead
6	28	M	Cervical fracture	15.12.2014	05.01.2015	Sakarya Adatip Hospital	Blood	NDM	Dead
7	76	F	Cerebrovascular disease, alzheimer	15.12.2014	15.01.2015	Haydarpaşa Training Hospital/ Istanbul	Wound	NDM + OXA-48	Alive
8	56	F	Hypertension and fournier gangrene	16.12.2014	31.12.2014	Kocaeli University Hospital/ Kocaeli	Blood	NDM	Dead

CR carbapenem resistant, F female, M male

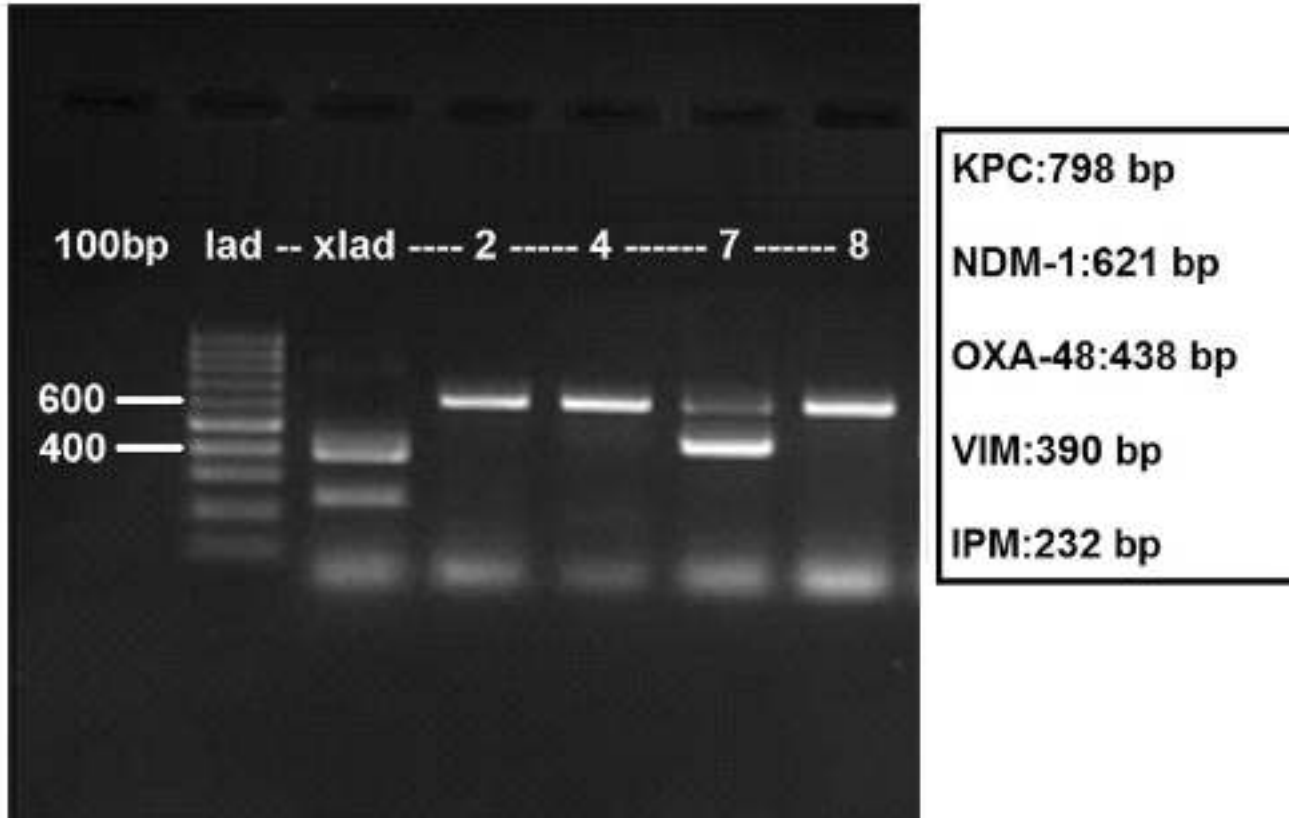


Fig. 1 Results of multiplex PCR-gel imaging on *K. pneumoniae* strains

Karbapenemaz direnç genleri multiplex PCR ve gel görüntüleme metodu ile zincirlerde NDM-1 geni varlığı multiplex-PCR ile doğrulandı.

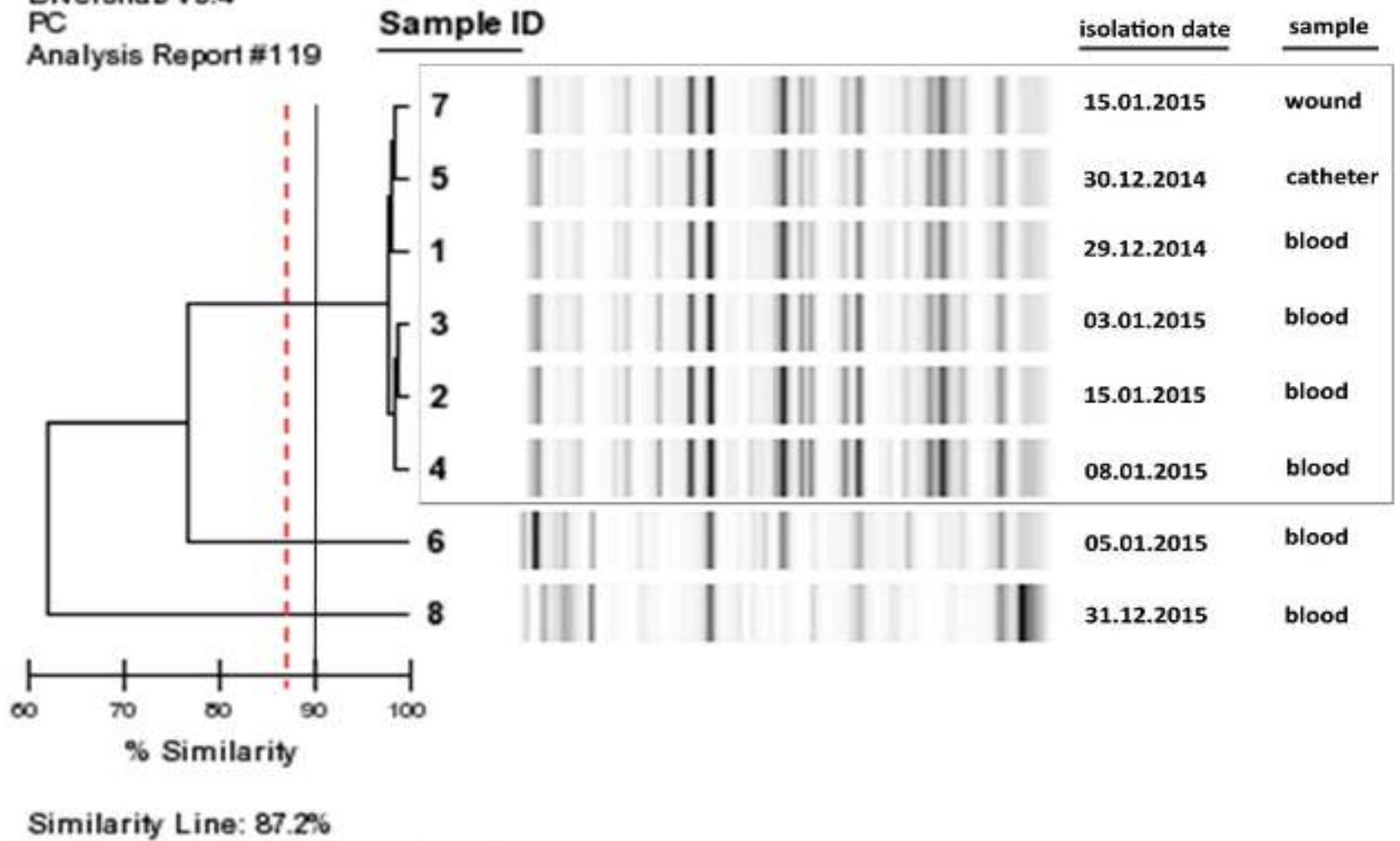


Fig. 2 Repetitive PCR results of the *K. pneumoniae* strains


- 6 zincir klonal olarak %95-100 benzerlik gösterdiği için klonal olarak ayıramıyordu
- 6 ve 8.ci hastadan elde edilen genler ise %80'nin altında benzerlik gösteriyordu
- Tüm zincirlerdeki klonal benzerlik oranı; %87.2.

Sonuç

- Bu çalışmada; dirençli enfeksiyon etkenlerinin tedavisinde sınırlı tedavi seçenekleri olduğu,
- İlerleyen yıllarda yoğun bakım hastalarının tedavisinin daha da zorlaşacağı,
- Enfeksiyon kontrol önlemlerinin alınmasının önemi vurgulanmıştır



Direct healthcare costs for patients hospitalized with Crimean-Congo haemorrhagic fever can be predicted by a clinical illness severity scoring system

Ilkay Bozkurt¹, Mustafa Sunbul¹, Hava Yilmaz¹, Saban Esen¹, Hakan Leblebicioglu¹ , Nicholas J. Beeching^{2,3}

¹Department of Infectious Diseases and Clinical Microbiology, Ondokuz Mayıs University Medical School, Samsun, Turkey, ²Tropical and Infectious Disease Unit, Liverpool School of Tropical Medicine, Liverpool, UK, ³NIHR Funded Health Protection Research Unit, University of Liverpool, Liverpool, UK

Kırım-Kongo kanamalı ateşi ile yatan hastalarda doğrudan sağlık maliyetleri klinik hastalık şiddeti skora sistemi ile tahmin edilebilir



- **Amaç:** Geliştirilen **severity grading score (SGS)** ağırlık derecelendirme skorunun, Kırım Kongo Kanamalı Ateş (KKKA) tanılı hastalarda; hastanede kalış süresi, laboratuvar tetkikleri, kan ürünleri kullanımı ve toplam maliyeti belirlemedeki rolünü değerlendirmektir.
- **Gereç ve Yöntem:** PCR ile doğrulanmış “Kırım Kongo Kanamalı Ateş” tanısı alan 35 hasta verileri retrospektif olarak değerlendirilmiştir.

Table 1 Components of SGS for CCHF⁷

Items	Classification	SGS points
Aspartate transaminase	<5×ULNV	0
	≥5×ULNV	1
Alanine transaminase	<ULNV	0
	≥ULNV	1
Lactate dehydrogenase	<3×ULNV	0
	≥3×ULNV	1
White blood cells	<10 000 cells/μL	0
	≥10 000 cells/μL	1
Hepatomegaly	No	0
	Yes	1
Organ failure	No	0
	Yes	1
Bleeding	No	0
	Yes	1
Age	<60 years	0
	≥60 years	1
Platelets	≥100 000 cells/μL	0
	≥50 000, <100 000 cells/μL	1
	<50 000 cells/μL	2
Prolongation of PT	<3 s	0
	≥3 s, <6 s	1
	≥6 s	2
aPTT	<70	0
	≥70	1
INR	<1.6	0
	≥1.6	1

ULNV: upper limit of normal value, PT: prothrombin time, aPTT: activated partial thromboplastin time, INR: international normalized ratio.

According to this scoring system: if the SGS score is ≤4, the disease severity is low

SGS score of 5–8 is intermediate; and SGS ≥ 9 is categorized as high-risk group.

Table 2 Average costs for each component of care

Item	Cost per item (\$)
Inpatient bed day (without drugs, imaging)	12
Biochemistry blood panel	12
Complete blood count	1.3
Clotting studies	7.8
Blood products/unit	
• Erythrocyte suspension	37.8
• Plasma per unit	18.1
• Platelet suspension pack	17.9
• Platelet apheresis	145.9

Table 3 Comparison of applied procedures and direct hospital costs in different SGS risk groups

Parameter	Total (n = 35)	Severity grading score group		p-value
		Low risk (n = 19)	Intermediate and high risk (n = 16)	
Age (Mean ± SD)	55 (±14)	52.5 (±15.7)	58.8 (±11.9)	0.194
Period of hospitalization (Mean ± SD) days	5.9 (±2.8)	6.01 (±2.41)	5.70 (±3.34)	0.754
Number of tests				
Mean ± SD				
CBC	7 (3.7)	7.2 (±3.4)	6.8 (±4)	0.754
INR	6 (±3)	6.3 (±2.5)	5.8 (±3.5)	0.661
Biochemical panel	6.7 (±3.3)	6.8 (±2.8)	6.4 (±3.9)	0.726
FFP (number of patients who received)	57	0	7	0.002
Mean (SD) packs		0	1.6 (±4.2)	0.021
Platelet suspension	125			
Number of patients who received		8	13	0.036
Mean (SD) packs		1.14 (1.96)	6.2 (±6.3)	0.02
Erythrocyte suspension (number of patients who received)	12	0	3	0.086
Mean (SD) packs		0	0.8 (±1.8)	0.336
Death	8	0	8	0.001
Number of patients				
Hospital bill (USD)	41740	635 (97–1500)	2264.5 (154–13054)	0.012
Median (min–max)				

CBC: complete blood count, INR: international normalized ratio, FFP: fresh frozen plasma.

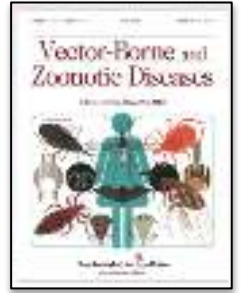
Farklı risk gruplarına göre uygulanan prosedürler ve hastane maliyetleri karşılaştırıldığında, orta ve ağır risk grubu hastalarda hastane maliyetinin hafif risk grubuna göre daha yüksek olduğu tespit edilmiştir.

Sonuç

KKKA tanılı hastalarda, **geliştirilen ağırlık derecelendirme skorunun** hastalık şiddetini ve ilgili sağlık maliyetlerini tahmin etmek için kullanılabilir olduğu sonucuna varılmıştır.

Human Cutaneous Anthrax, the East Anatolian Region of Turkey 2008–2014

Emine Parlak and Mehmet Parlak



Abstract

Anthrax is a zoonotic infectious disease caused by *Bacillus anthracis*. While anthrax is rare in developed countries, it is endemic in Turkey. The names of the different forms of the disease refer to the manner of entry of the spores into the body—cutaneous, gastrointestinal, inhalation, and injection. The purpose of this study was to evaluate the clinical characteristics, epidemiological history, treatment, and outcomes of patients with anthrax. Eighty-two cases of anthrax hospitalized at Atatürk University Faculty of Medicine Department of Infectious Diseases and Clinical Microbiology in 2008–2014 were examined retrospectively. Gender, age, occupation, year,

İnsan kutanöz antraksı; Türkiye Doğu Anadolu Bölgesi 2008-2014 verileri.

- Ülkemizde endemik olarak görülen şarbon tanılı 82 hastanın epidemiyolojik, klinik verileri ve tedavi sonuçları retrospektif olarak değerlendirilmiştir.

TANI

- Anamnez, tipik lezyonun görülmesi, klinik belirti, bulgular ve mikrobiyolojik tetkiklerle
- Gram boyamada 15 (%18.3) hastada gram pozitif basil
- Kültürde 11 (%13.4) hastada etken üremiş

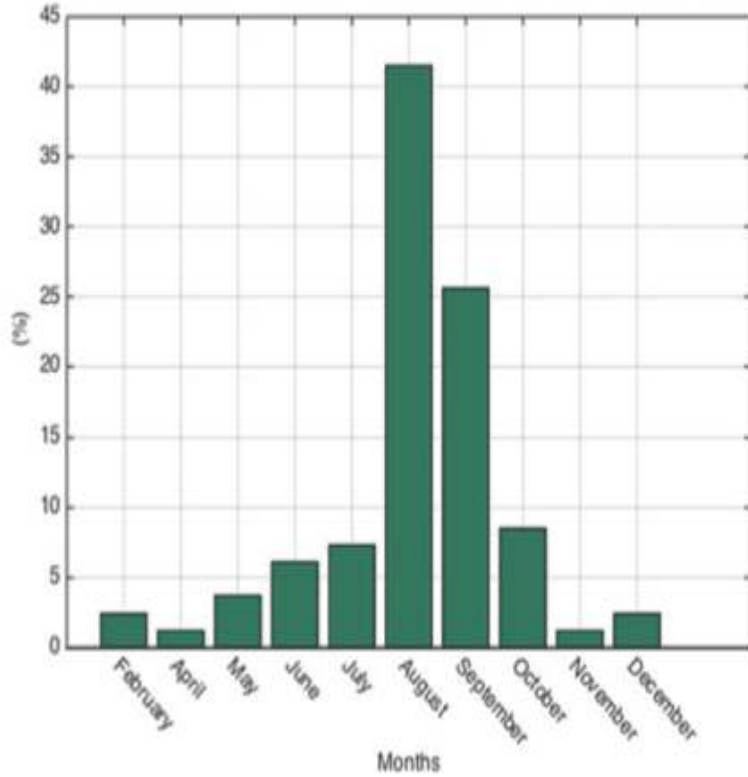


FIG. 2. Distribution of cases by month. Color images available online at www.liebertpub.com/vbz

Hastaların ağırlıklı olarak; Ağustos ve Eylül ayında başvurduğu tespit edildi.

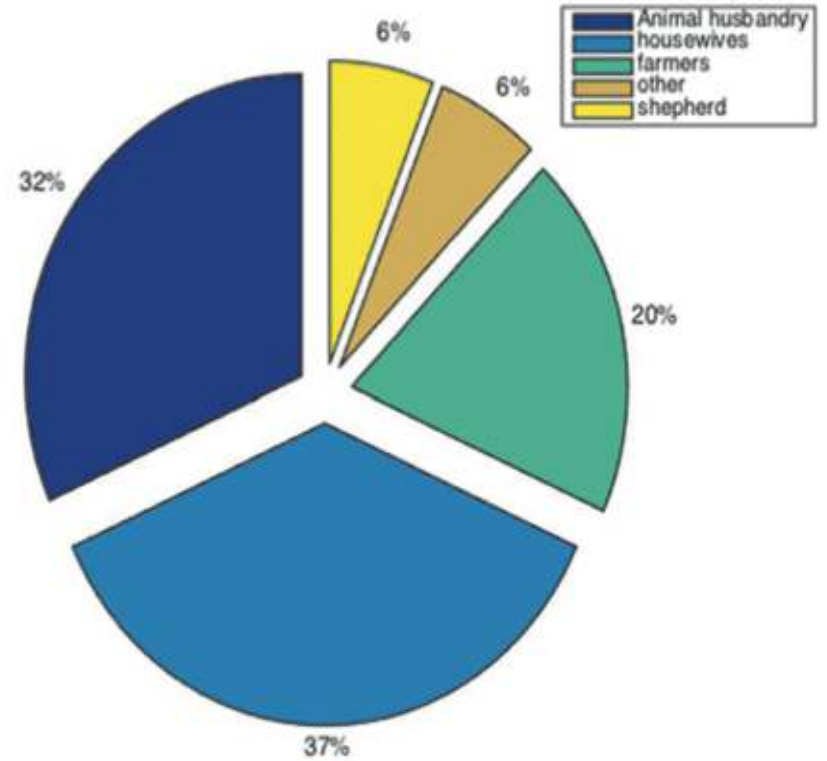


FIG. 1. Distribution of cases by occupation. Color images available online at www.liebertpub.com/vbz

En yaygın meslek grupları; ev hanımı (%36.6) ve hayvancılıktı (%31.7)

TABLE 1. CLINICAL AND LABORATORY PARAMETERS FOR THE ANTHRAX CASES

	n	%
Male	52	63.4
Age (years)		
Under 25 years old	6	7.32
26–40	30	36.58
41–50	22	26.83
Above 51 years old	24	29.27
Risk factors		
Slaughtering	46	56.1
Cutting of meat	29	35.4
Other	7	8.6
Localization of the lesions		
Fingers	31	37.8
Arm	19	23.2
Hand	17	20.7
Face and neck	9	11
Eyes and eyelids	6	7.3
Signs and symptoms		
Erythema	74	90.2
Swelling	72	87.8
Eschar formation	63	76.8
Fever	21	25.6
Itching	11	13.4
Laboratory findings		
C-reactive protein > 5mg/l	47	57.3
Sedimentation > 20mm/h	40	48.7
WBC > 10000/mm ³	41	50
Treatment		
Penicillin	64	78
Other antimicrobials	18	22



FIG. 4. Edematous lesion around on the left hand. Color images available online at www.liebertpub.com/vbz



FIG. 5. Cutaneous lesion on the right hand. Color images available online at www.liebertpub.com/vbz

TABLE 2. COMPARISON OF THE CLINICAL AND LABORATORY PARAMETERS OF ANTHRAX CASES

	<i>All patients mean ± SD</i>	<i>Severe form mean ± SD</i>	<i>Mild form mean ± SD</i>	<i>p value^a</i>
White blood cells (per mm ³)	11,589 ± 4935	13,253 ± 5240	8548 ± 2154	0.001
Thrombocyte	220,402 ± 64,530	210,528 ± 62,396	238,448 ± 65,529	0.06
Sedimentation (mm/h)	24.7 ± 18.2	26.8 ± 18.3	20.7 ± 17.4	0.14
CRP (mg/liter)	28.4 ± 48.5	36.16 ± 56.33	14.4 ± 24.8	0.05
AST (IU/liter)	35.8 ± 26.4	40.66 ± 30.40	26.9 ± 13.6	0.02
ALT	32.5 ± 22.3	36.57 ± 24.17	25.1 ± 16.4	0.01
Age	43.7 ± 13.0	43.8 ± 13.6	43.6 ± 12.0	0.93
Mean length of hospitalization	8.3 ± 5.3	9.5 ± 5.0	6.0 ± 5.2	0.005

^aThe *p* value in the comparison of cases of severe and mild cutaneous anthrax.

SD, standard deviation; CRP C-reactive protein; AST, aspartate aminotransferase; ALT, alanine aminotransferase.

Sonuç

- Şarbon hastalığı ülkemizde hala endemiktir
- Erken tanı ve uygun tedavi hayat kurtarıcıdır
- Tipik şüpheli lezyonlar görüldüğünde anamnezde hayvansal ürünlerle temas ve mesleki maruziyet de varsa mutlaka **şarbon hastalığı** akla getirilmelidir
- Hayvanların aşılınması ve hayvan kesimi sırasında uygulamalarla ilgili verilen eğitimler, vaka sayısının azaltılması için çok önemlidir

Impact of antimicrobial drug restrictions on doctors' behaviors

Oğuz KARABAY^{1*}, Salih HOŞOĞLU², Ertuğrul GÜÇLÜ¹, Şerife AKALIN³, Fatma Aybala ALTAY⁴, Emsal AYDIN⁵, Bahadır CEYLAN⁶, Aygül ÇELİK⁷, İlhami ÇELİK⁸, Tuna DEMİRDAL⁹, Keziban DEMİRLİ¹⁰, Nurettin ERBEN¹¹, Ünal ERKORKMAZ¹², Serpil EROL¹³, Ömer EVİRGEN¹⁴, İbak GÖNEN¹⁵, Ayşe Ebru GÜNER¹⁶, Tümer GÜVEN¹⁷, Ayten KADANALI¹⁸, Mücahide Esra KOÇOĞLU¹⁹, Ömer Faruk KÖKOĞLU¹⁴, Abdulkadir KÜÇÜKBAYRAK²⁰, Fatma SARGIN²¹, Mahmut SÜNNETÇİOĞLU²², Şebnem ŞENOL²³, Meltem İŞIKGÖZ TAŞBAKAN²⁴, Recep TEKİN², Vedat TURHAN²⁵, Gürdal YILMAZ²⁶, Behiye DEDE¹⁸

¹Department of Infectious Diseases and Clinical Microbiology, Sakarya University Health Science Institute, Sakarya, Turkey

²Department of Infectious Diseases and Clinical Microbiology, Dicle University, Faculty of Medicine, Diyarbakir, Turkey

³Department of Infectious Diseases and Clinical Microbiology, Pamukkale University, Faculty of Medicine, Denizli, Turkey

⁴Department of Infectious Diseases and Clinical Microbiology, Ankara Disiplin Yrd. Doç. Dr. Beyazıt Eğitim ve Araştırma Hastanesi, Ankara, Turkey

⁵Department of Infectious Diseases and Clinical Microbiology, Kafkas University, Faculty of Medicine, Kars, Turkey

⁶Division of Infectious Diseases and Clinical Microbiology, Health Ministry Istanbul Training and Research Hospital, Istanbul, Turkey

⁷Department of Infectious Diseases and Clinical Microbiology, Trakya University, Faculty of Medicine, Edirne, Turkey

⁸Department of Infectious Diseases and Clinical Microbiology, Health Ministry Kayseri Training and Research Hospital, Kayseri, Turkey

⁹Department of Infectious Diseases and Clinical Microbiology, Izzet Kaşık Çelebi University, Izzet, Turkey

¹⁰Division of Infectious Diseases and Clinical Microbiology, Health Ministry Gebze Fatih State Hospital, Kocaeli, Turkey

¹¹Department of Infectious Diseases and Clinical Microbiology, Eskişehir Osmangazi University, Faculty of Medicine, Eskişehir, Turkey

¹²Department of Biostatistics, Sakarya University, Faculty of Medicine, Sakarya, Turkey

¹³Department of Infectious Diseases and Clinical Microbiology, Hapıdarpaşa Nemune Training and Research Hospital, Istanbul, Turkey

¹⁴Department of Infectious Diseases and Clinical Microbiology, Mustafa Kemal University Faculty of Medicine, Hatay, Turkey

¹⁵Department of Infectious Diseases and Clinical Microbiology, Süleyman Demirel University, Faculty of Medicine, Isparta, Turkey

¹⁶Hospital Pharmacy, Sakarya University, Training and Research Hospital, Sakarya, Turkey

¹⁷Department of Infectious Diseases and Clinical Microbiology, Ankara Atatürk Training and Research Hospital, Ankara, Turkey

¹⁸Department of Infectious Diseases and Clinical Microbiology, Ümraniye Training and Research Hospital, Istanbul, Turkey

¹⁹Department of Clinical Microbiology, Abant İzzet Baysal University, Faculty of Medicine, Bolu, Turkey

²⁰Department of Infectious Diseases and Clinical Microbiology, Abant İzzet Baysal University, Faculty of Medicine, Bolu, Turkey

²¹Department of Infectious Diseases and Clinical Microbiology, Çirince Training and Research Hospital, Istanbul, Turkey

²²Department of Infectious Diseases and Clinical Microbiology, Yüzüncü Yıl University, Faculty of Medicine, Van, Turkey

²³Department of Infectious Diseases and Clinical Microbiology, Celal Bayar University, Faculty of Medicine, Manisa, Turkey

²⁴Department of Infectious Diseases and Clinical Microbiology, Ege University, Faculty of Medicine, Izmir, Turkey

²⁵Department of Infectious Diseases and Clinical Microbiology, GATA Hıncalpaşa Training Hospital, Istanbul, Turkey

²⁶Department of Infectious Diseases and Clinical Microbiology, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey

Antimikrobiyal ilaç kısıtlamasının doktorların davranışları üzerindeki etkisi.

- **Amaç:** Çalışmanın amacı, ülkemizde 2003 yılından beri Enfeksiyon Hastalıkları Uzmanı (EHU) onayı ile getirilen antibiyotik kısıtlama politikasının enfeksiyon hastalıkları uzmanı dışındaki doktorların davranışları üzerindeki etkisini belirlemek.
- **Gereç ve Yöntem:** Çalışmaya ülkemizde 20 şehirden 1906 uzman katılmıştır. Katılan hekimlerin 964'ü cerrahi branştaydı.
- Çalışma Ağustos-Aralık 2011 tarihleri arasında toplam 5 aylık periodta, **22 soruluk bir anket** hazırlanarak yapılmıştır.

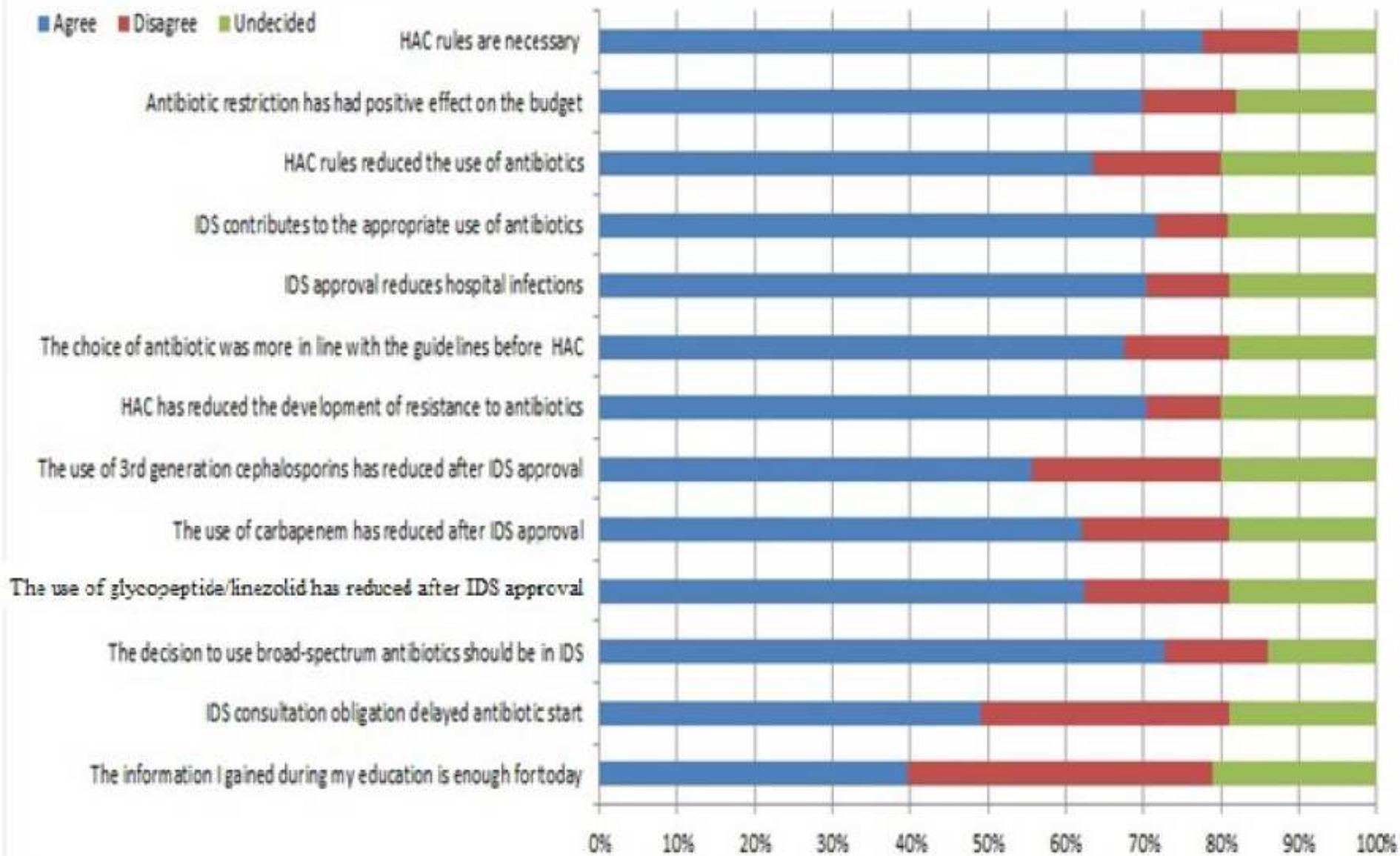


Figure 1. The views of noninfectious disease specialists on antibiotic restriction.

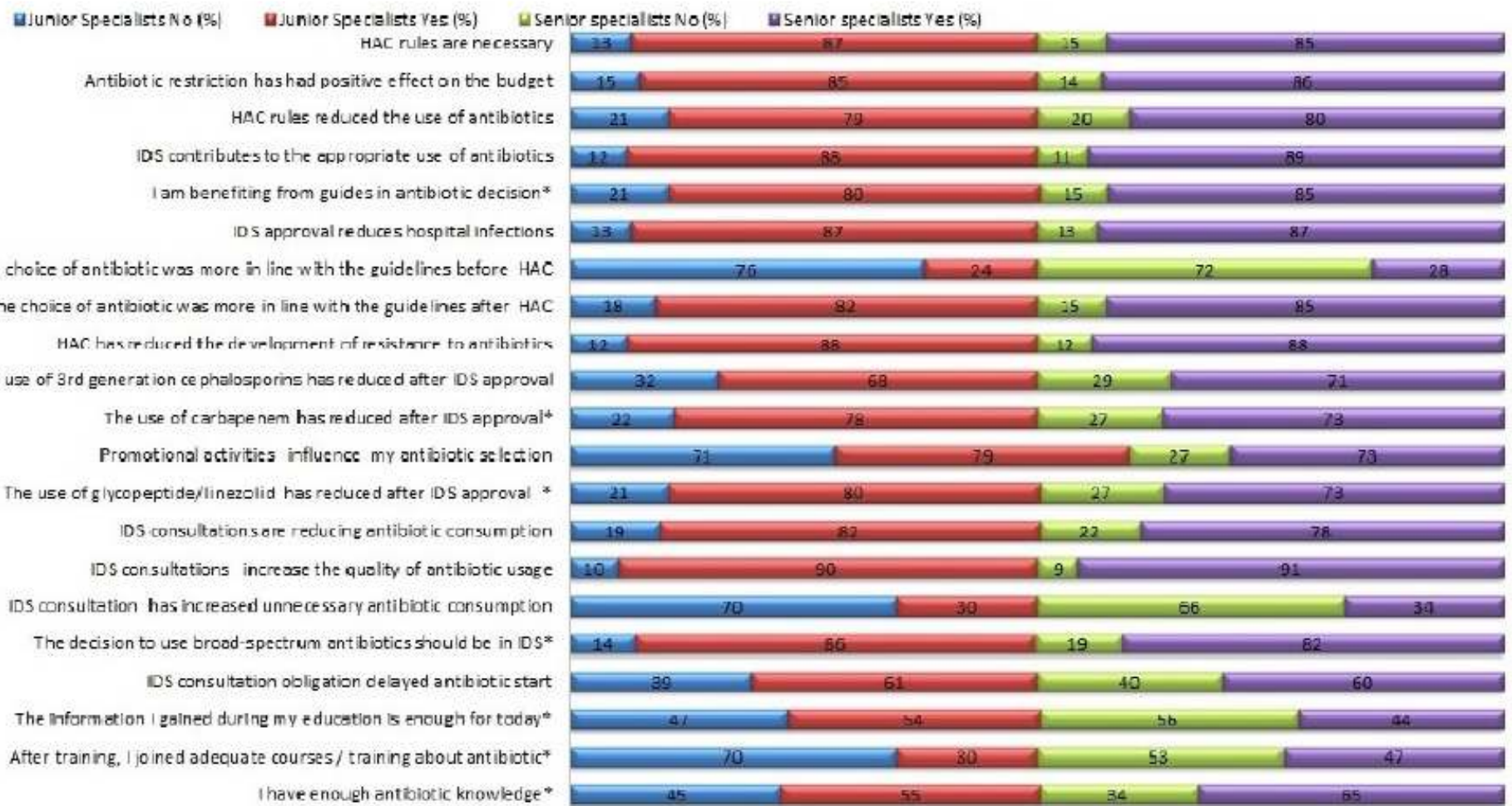


Figure 2. The views of specialists on budget application direction and the mandatory infectious disease and clinical microbiology specialist approval for certain antibiotics, according to their duration of experience in the area of specialty.

Surgery vs Internal doctors

■ Surgery doctors No (%) ■ Surgery doctors Yes (%) ■ Internal doctors No (%) ■ Internal doctors Yes (%)



Figure 3. The distribution of the specialists' replies to the queries in the survey according to surgical and medical science branches.

Sonuçlar

- Bu çalışma katılımcıların **%78'i** tarafından antibiyotik kısıtlama politikalarının desteklendiğini gösterdi.
- Katılımcıların **%49.2'si** ise, antibiyotik onayı ve konsültasyonların tamamlanmasının vakit almasına bağlı (ort: 1-6 saat) ör: sepsis gibi acil durumlarda antibiyotik başlanmasının gecikmesinin hasta hayatı ile ilgili riski arttırdığı düşüncesindeydi
- Bu nedenle, Enfeksiyon Hastalıkları uzmanları ve diğer branş hekimlerinin rasyonel antibiyotik kullanımını teşvik edecek yeni politikalara ihtiyaçları olduğu düşüncesi sonucuna varıldı.

Erişkin Viseral Leyşmanyaz Olgularının Klinik ve Laboratuvar Bulgularının Değerlendirilmesi

Evaluation of Clinical and Laboratory Findings of Adult Visceral Leishmaniasis Cases

Serap URAL¹, Figen KAPTAN¹, Nurbanu SEZAK¹, Sibel EL¹, Bahar ÖRMEN¹, Nesrin TÜRKER¹, Tuna DEMİRDAL¹, İlknur VARDAR¹, Pınar ÖZKAN ÇAYIRÖZ¹, Fulya ÇAKALAÇAOĞLU²

¹ İzmir Katip Çelebi Üniversitesi Atatürk Eğitim ve Araştırma Hastanesi, Enfeksiyon Hastalıkları Kliniği, İzmir.

¹ *Izmir Katip Celebi University Atatürk Training and Research Hospital, Infectious Diseases Clinic, Izmir, Turkey.*

² İzmir Katip Çelebi Üniversitesi Atatürk Eğitim ve Araştırma Hastanesi, Patoloji Kliniği, İzmir.

² *Izmir Katip Celebi University Atatürk Training and Research Hospital, Pathology Clinic, Izmir, Turkey.*

Erişkin visseral leişmanyaz (VL) vakalarının klinik ve laboratuvar bulgularının değerlendirilmesi.

- Araştırmacılar, 2000 ile 2013 yılları arasında visseral leişmanyaz tanısı alan on hastayı klinik ve laboratuvar bulguları açısından değerlendirmişlerdir.

Erişkin visseral leşmanyaz vakalarının klinik ve laboratuvar bulgularının değerlendirilmesi

VL tanılı 3 kadın, 7 erkek; toplam 10 olgu

- Olguların hepsi Ege Bölgesi'nden başvurmuş, altı olgunun kırsal alanda yaşadığı tespit edilmiştir
- **Tanı;** uygun klinik ve FM bulguları varlığında, serolojik test pozitifliği (İFAT ve rekombinant kinesin antijen; rK39 hızlı antijen testi) ve/veya Kİ örneklerinde parazitin amastigot formunun görülmesi ile konmuştur.
- **En sık başlangıç yakınmaları;** ateş, halsizlik ve karında şişlik
- **FM ve laboratuvar bulguları;** HSM, ESH'da artış, albümin/globülin oranında ters dönme, anemi, lökopeni ve dokuz olguda trombositopeni tespit edilmiştir.

Tablo I. Olguların Tedavi Öncesi (TÖ) ve Tedavi Sonrası (TS) Laboratuvar Bulguları

Bulgular		Ortalama \pm SS	Medyan	Aralık	Z	p*
ESH (mm/saat)	TÖ	88.9 \pm 26.9	84	54-140	-2.668	0.008
	TS	46.11 \pm 19.19	42	23-70		
Albumin (g/dl)	TÖ	2.93 \pm 0.69	2.6	2.2-3.9	-2.823	0.005
	TS	3.44 \pm 0.62	3.3	2.6-4.3		
Globulin (g/dl)	TÖ	5.45 \pm 1.35	5	4.2-8.2	-2.814	0.005
	TS	4.85 \pm 1.03	4.65	3.9-7		
Albümin/Globulin	TÖ	0.56 \pm 0.19	0.474	0.38-0.89	-2.803	0.005
	TS	0.74 \pm 0.22	0.640	0.52-1.05		
Lökosit (K/ μ l)	TÖ	2.498 \pm 1.047.27	2.150	1.600-4.360	-2.803	0.005
	TS	3.870 \pm 1.420.92	3.805	2.100-5.840		
Eritrosit (M/ μ l)	TÖ	3.49 \pm 0.56	3.62	2.11-4.14	-2.310	0.021
	TS	3.98 \pm 0.49	3.825	3.57-517		
Hemoglobin (g/dl)	TÖ	9.18 \pm 1.52	9.7	6-10.8	-2.805	0.005
	TS	10.86 \pm 1.22	10.55	9.7-13.5		
Hematokrit (%)	TÖ	27.1 \pm 4.5	28.5	16-31.3	-2.812	0.005
	TS	31.59 \pm 3.05	31	28-39.3		
Trombosit (K/ μ l)	TÖ	107.32 \pm 51.52	102.5	41.5-194	-2.803	0.005
	TS	174.25 \pm 60.12	158.5	94.5-290		

* Wilcoxon Signed Ranks Testi.

Tedavi öncesine göre tedavi sonrasında **ESH** ve **globulin** değerlerinde düşme, diğer laboratuvar değerlerinde yükselme gözlenmiştir.

Tedavi- Sonuç

- Meglumin antimonat (Glucantime); 20 mg/kg/gün IM yolla, 28 gün
- L-AMB; 3 mg/kg/gün IV yolla, ilk 5 gün, sonrasında 14. ve 21.günler toplam 21 mg/kg/gün
- Bir yıllık izlemde tüm hastalar iyileşmiş, nüks görülmemiştir.
- **Sonuç olarak; ampirik antibiyotiklerle iki hf'dan uzun sürede ateşi kontrol altına alınamayan herhangi bir enfeksiyon odağı ve malignite tespit edilemeyen olguların VL yönünden araştırılması gerekliliği kanısına varılmıştır**

Clinical Study

Comparison of brucellar and tuberculous spondylodiscitis patients: results of the multicenter “Backbone-1 Study”

Hakan Erdem, MD^{1,*}, Nazif Elaldi, MD², Ayse Batirel, MD³, Sani Aliyu, MD⁴, Gonul Sengoz, MD⁵, Filiz Pehlivanoglu, MD⁵, Ergys Ramosaco, MD⁶, Serda Gulsun, MD⁷, Recep Tekin, MD⁸, Birgul Mete, MD⁹, Ilker Inanc Balkan, MD⁹, Dilek Yildiz Sevgi, MD¹⁰, Efthymia Giannitsioti, MD¹¹, Archontoula Fragou, MD¹¹, Selcuk Kaya, MD¹², Birsen Cetin, MD¹³, Tunc Oktenoglu, MD¹⁴, Aygul DoganCelik, MD¹⁵, Banu Karaca, MD¹⁶, Elif Sahin Horasan, MD¹⁷, Mehmet Ulug, MD¹⁸, Asuman Inan, MD¹⁹, Safak Kaya, MD⁷, Esra Arslanalp, MD²⁰, Selma Ates-Guler, MD²¹, Ayse Willke, MD²⁰, Sebnem Senol, MD²², Dilara Inan, MD²³, Ertugrul Guclu, MD²⁴, Gunay Tuncer-Ertem, MD²⁵, Meliha Meric-Koc, MD²⁰, Meltem Tasbakan, MD²⁶, Seniha Senbayrak, MD¹⁹, Gonul Cicek-Senturk, MD²⁷, Fatma Sirmatel, MD²⁸, Gulferm Ocal, MD³, Sesin Kocagoz, MD²⁹, Hulya Kusoglu, MD²⁹, Tumer Guven, MD³⁰, Ali Irfan Baran, MD³¹, Behiye Dede, MD³², Fatma Yilmaz-Karadag, MD³³, Sukran Kose, MD³⁴, Hava Yilmaz, MD³⁵, Gonul Aslan, MD²⁷, D. Ashraf ALGallad, MD³⁶, Salih Cesur, MD²⁵, Rehab El-Sokkary, MD³⁶, Nural Bekiroglu, PhD³⁷, Haluk Vahaboglu, MD³³

¹Department of Infectious Diseases and Clinical Microbiology, Gultekin Medical Academy, Ankara, Turkey
²Department of Infectious Diseases and Clinical Microbiology, Cumhuriyet University School of Medicine, Sivas, Turkey
³Department of Infectious Diseases and Clinical Microbiology, Dr. Fazlî Kirazlı Training and Research Hospital, Istanbul, Turkey
⁴Clinical Microbiology and Public Health Laboratory, Cambridge University Hospital, Addenbrooke's Hospital, Cambridge, UK
⁵Department of Infectious Diseases and Clinical Microbiology, Haseki Training and Research Hospital, Istanbul, Turkey
⁶University Hospital Center – “Mother Teresa”, Infectious Diseases Hospital, Tirana, Albania
⁷Department of Infectious Diseases and Clinical Microbiology, Duzluk Training and Research Hospital, Duzluk, Turkey
⁸Department of Infectious Diseases and Clinical Microbiology, Ege University School of Medicine, Bornova, Turkey
⁹Department of Infectious Diseases and Clinical Microbiology, Sait Etiler Training and Research Hospital, Istanbul, Turkey
¹⁰Department of Infectious Diseases and Clinical Microbiology, Karadeniz Technical University School of Medicine, Trabzon, Turkey
¹¹Department of Internal Medicine, Athens University Medical School, Athens University General Hospital, Athens, Greece
¹²Department of Neurosurgery, Koc University School of Medicine, Istanbul, Turkey
¹³Department of Infectious Diseases and Clinical Microbiology, Esmir University School of Medicine, Esmir, Turkey
¹⁴Department of Infectious Diseases and Clinical Microbiology, Fomir Bascakli Training and Research Hospital, Izmir, Turkey
¹⁵Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
¹⁶Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
¹⁷Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
¹⁸Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
¹⁹Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁰Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²¹Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²²Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²³Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁴Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁵Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁶Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁷Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁸Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
²⁹Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³⁰Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³¹Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³²Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³³Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³⁴Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³⁵Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³⁶Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey
³⁷Department of Infectious Diseases and Clinical Microbiology, Istanbul University School of Medicine, Istanbul, Turkey

Brusellar spondilodiskit (BSD) ve tüberküloz spondilodiskit (TSD) hastalarının karşılaştırılması: Çok merkezli Backbone-1 çalışmasının sonuçları.

- Dört ülke ve 35 farklı merkezden (Türkiye, Mısır, Arnavutluk ve Yunanistan)
- Toplam 641 (314, TSD ve 327 BSD) hasta
- Klinik, laboratuvar, radyoloji bulguları ve tedavi yanıtı açısından karşılaştırılmıştır.

Table 1

Comparison of baseline patient characteristics for tuberculous and brucellar spondylodiscitis groups (N=641)

Variable	Tuberculous (n=314)	Brucellar (n=327)	p-Value
Median age (IQR), y	53 (35–65)	55 (41–65)	.344
Male Gender, n (%)	163 (51.9)	172 (52.6)	.862
History of brucellosis, n (%)	0 (0.0)	6 (1.83)	.031
History of familial brucellosis, n (%)	2 (0.64)	2 (0.61)	1.0
History of tuberculosis, n (%)	4 (1.27)	0 (0.0)	.057
History of familial tuberculosis, n (%)	4 (1.27)	1 (0.31)	.208
Comorbidities, n (%)			
Diabetes mellitus	36 (11.46)	49 (14.98)	.189
Chronic renal failure	14 (4.46)	10 (3.06)	.351
Malignancy	7 (2.23)	2 (0.61)	.101
Immunosuppression*	7 (2.23)	2 (0.61)	.101
Others [†]	60 (19.11)	22 (6.73)	<.0001
Other site of concomitant involvement, n (%)	51 (16.24)	11 (3.36)	<.0001
Respiratory system	29 (56.86)	0 (0.0)	ND
Meningitis	13 (25.49)	3 (27.27)	ND
Lymphoid system	6 (11.76)	0 (0.0)	ND
Gastrointestinal system	1 (1.96)	0 (0.0)	ND
Peripheral joint	2 (3.92)	2 (18.18)	ND
Urogenital system [‡]	0 (0.0)	6 (54.54)	ND
Clinical findings/constitutional symptoms, n (%)			
Fever	139 (44.27)	222 (67.89)	<.0001
Fatigue	161 (51.27)	196 (59.94)	.027
Loss of appetite	154 (49)	119 (36.39)	.001
Sweating	152 (48.4)	162 (49.54)	.774
Arthralgia	131 (41.72)	146 (44.65)	.454
Lumbago/local tenderness	261 (83.12)	207 (63.3)	.002
Back pain/local tenderness	176 (56.05)	99 (30.28)	<.0001
Weight loss	132 (42.04)	46 (14.07)	<.0001
Median (IQR) weight loss, kg	6 (5–10)	5 (4–8)	.174
Hepatomegaly	41 (13.06)	80 (24.46)	.0002
Splenomegaly	34 (10.83)	68 (20.79)	.0006
Median (IQR) time symptoms onset to therapy, d	30 (18–54)	25 (15–45)	.002

Table 2

Results of laboratory tests for tuberculous and brucellar spondylodiscitis patient groups (N=641)

Variable	Tuberculous (n=314)	Brucellar (n=327)	p-value
Baseline laboratory analyses, Median (IQR)			
White blood cell count, ($\times 10^9/L$)	8.0 (6.3–10.6)	6.65 (5.2–8.3)	<.0001
C-reactive protein, (mg/L)	30 (8.0–78.2)	17 (3.4–50.0)	<.0001
Erythrocyte sedimentation rate, (mm/h)	70 (43–95)	42 (25–62.3)	<.0001
Positive tuberculin skin test, n/N (%)	158/211 (74.9)	5/96 (5.21)	<.0001
No. of patients with positive culture, n/N (%)	110/271 (40.59)	81/301 (26.91)	.0005
Positive culture specimens, n (%)			
Blood	2 (0.74)	73 (24.25)	NA
Bone biopsy	12 (4.43)	1 (0.33)	NA
Bone marrow	1 (0.37)	7 (2.33)	NA
Deep soft tissue	16 (5.9)	–	NA
Abscess material	78 (28.78)	–	NA
Paravertebral abscess	54 (19.93)	–	NA
Epidural abscess	5 (1.85)	–	NA
Psoas abscess	21 (7.75)	–	NA
Lymph node	1 (0.37)	–	NA
Microorganisms, identified, n (%)			
<i>Mycobacterium tuberculosis complex</i>	59 (53.63)	–	NA
<i>Mycobacterium tuberculosis</i>	49 (44.54)	–	NA
Non-tuberculous mycobacteria	1 (0.91)	–	NA
<i>Brucella melitensis</i>	–	38 (46.91)	NA
Untyped	–	43 (53.09)	NA
Serological analyses, n (%)			
Positive STA test ($\geq 1:160$), n/N	–	301/320 (94.06)	NA
ELISA test for brucellosis	–	19 (5.81)	NA
Positive immunoglobulin M	–	3 (15.79)	NA
Positive immunoglobulin G	–	6 (31.58)	NA
Antimicrobial susceptibility test, n (%)	3 (0.96)	–	NA
Histopathological examination, n/N (%)			
Compatible with disease	147 (73.5)	16 (57.14)	
Non-specific findings	38 (19.0)	10 (35.71)	
Insufficient material	15 (7.5)	2 (7.14)	
Site of histopathological examination, n (%)	200	28	NA
Bone	52 (26.0)	6 (23.8)	
Paravertebral soft tissue	94 (47.0)	19 (73.8)	
Bone+paravertebral soft tissue	15 (7.5)	3 (10.7)	
Other foci	36 (18.0)	–	
Level of histopathological examination, n (%)	166	28	NA
Cervical	7 (4.21)	2 (7.14)	
Thoracic	82 (49.39)	6 (23.8)	
Lumbar	76 (45.78)	20 (71.43)	
Sacral	1 (0.6)	–	

STA, standard tube agglutination; NA, not applicable; ELISA, enzyme-linked immunosorbent assay; IQR, interquartile range. Significant values are presented as bold ($p < 0.05$).

Table 3
Imaging findings for tuberculous and brucellar spondylodiscitis patient groups (N=641)

	Tuberculous (n=314)	Brucellar (n=327)	p-Value
Imaging method, n (%)			
Magnetic resonance imaging	289 (92.04)	301 (92.05)	.996
Computerized tomography	118 (37.58)	71 (21.71)	<.0001
Bone/soft tissue scintigraphy	26 (8.28)	15 (4.59)	.1
Imaging findings, n (%)			
Compatible with spondylodiscitis	298 (94.9)	293 (89.6)	.012
Increased activity consistent with spondylodiscitis	213 (67.83)	226 (69.11)	.728
Increased activity consistent with spondylitis	81 (25.79)	99 (30.28)	.207
Prevertebral abscess	37 (11.78)	17 (5.19)	.003
Paravertebral abscess	188 (59.87)	70 (21.41)	<.0001
Epidural abscess	54 (17.19)	27 (8.26)	<.0001
Psoas abscess	75 (23.88)	15 (4.59)	<.0001
Radiculitis	16 (5.09)	14 (4.28)	.626
Neo-ossification	19 (6.05)	14 (4.28)	.311
Anterior involvement	114 (36.31)	72 (22.02)	<.0001
Multiple (>2 vertebrae) involvement	159 (50.63)	174 (53.21)	.514
Loss of vertebral corpus height	151 (48.09)	78 (23.85)	<.0001
Calcification	36 (11.46)	15 (4.59)	0.001
Involved vertebrae			
Cervical, n (%)	15 (4.78)	10 (3.06)	.261
Cervicothoracic, n (%)	3 (0.96)	1 (0.31)	.364
Thoracic, n (%)	153 (48.73)	58 (17.74)	<.0001
Thoracolumbar, n (%)	40 (12.74)	14 (4.28)	<.0001
Lumbar, n (%)	175 (55.73)	247 (75.54)	<.0001
Lumbosacral, n (%)	24 (7.64)	29 (8.87)	.573
Sacral, n (%)	27 (8.59)	49 (14.98)	.012
Mean±SD number of involved vertebrae	2.5±1.0	2.3±1.0	.013
Median (range) number of involved vertebrae	2 (1-8)	2 (1-8)	.023
Multiple (>2 vertebrae) level involved, n (%)	106 (33.76)	70 (21.41)	.0005
Non-adjacent multiple level involvement, n (%)	26 (8.28)	13 (3.98)	.023

Table 4

Comparison of surgical interventions, follow-up findings, and outcomes for tuberculous and brucellar spondylodiscitis patient groups (N=641)

Variable	Tuberculous (n=314)	Brucellar (n=327)	p-Value
No. of patients having surgical intervention, n (%)	211 (67.19)	35 (10.7)	<.0001
Percutaneous biopsy and abscess drainage	134 (42.68)	23 (7.03)	<.0001
Transpedicular stabilization and fusion	23 (7.32)	2 (0.61)	<.0001
Multiple surgical interventions	22 (7.0)	1 (0.31)	<.0001
Laminectomy	13 (4.14)	8 (2.45)	.229
Drainage and intermittent irrigation	7 (2.23)	4 (1.22)	.375
Corpectomy and stabilization	1 (0.32)	0 (0.0)	.489
Pseudofusion after a year	0 (0.0)	2 (0.61)	.499
Discectomy	1 (0.32)	3 (0.92)	.624
Reason for surgical intervention, n (%)			
Diagnostic	49 (23.22)	3 (8.57)	.071
Diagnostic+therapeutic	68 (32.23)	3 (8.57)	.0041
Therapeutic	78 (36.97)	29 (82.86)	<.0001
Surgical complication occurred, n (%)	2 (0.95)	0 (0.0)	1.0
Reasons of surgical intervention, n (%)			
Pain	57 (27.01)	13 (37.14)	.162
Neurologic deficit	24 (11.37)	8 (22.86)	.061
Not specified	130 (61.61)	14 (40.0)	.0162
Response to treatment			
Clinical (fever, pain relief, etc.) cure, n (%)	230 (73.25)	308 (94.19)	<.0001
CRP normalization, n (%)	246 (78.34)	242 (74.0)	.198
Median time (IQR) to CRP normalization, d	25 (15, 42.5)	19 (12, 30)	<.0001
ESR normalization, n (%)	198 (63.06)	235 (71.87)	.017
Median time (IQR) to ESR normalization, d	28 (42,60)	28 (20, 40.5)	<.0001
Follow-up imaging results, n (%)	198	190	
Cure	48 (15.29)	40 (12.23)	.261
Radiological improvement	137 (43.63)	143 (43.73)	.979
Worsening of radiological findings	13 (4.14)	7 (2.14)	.146
Outcomes, n (%)			
Mortality	7 (2.22)	2 (0.61)	.1
Post-treatment sequelae	77 (24.52)	12 (3.67)	<.0001
Kyphosis	35 (11.15)	0 (0.0)	ND
Gibbus deformity	18 (5.73)	0 (0.0)	ND
Motor weakness	17 (5.41)	2 (0.61)	ND
Paraplegia	17 (5.41)	0 (0.0)	ND
Scoliosis	15 (4.78)	3 (0.92)	ND
Loss of sensation	12 (3.82)	1 (0.31)	ND
Kyphoscoliosis	3 (0.95)	1 (0.31)	ND
Vertebral compression fracture	2 (0.64)	0 (0.0)	ND
Persistent pain	2 (0.64)	5 (1.53)	ND
Urinary retention	1 (0.32)	0 (0.0)	ND
Polyneuropathy	1 (0.32)	0 (0.0)	ND

CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ND, not determined; IQR, interquartile range.

Significant values are presented as bold (p<0.05).

Sonuç olarak

- **TSD ve BSD ayırıcı tanısında;**
- Konstitüsyonel semptomlardan ateş, sırt ağrısı ve kilo kaybı,
- Yüksek inflamatuvar markerlar,
- Abse formasyonu, posterior spinöz element ve respiratuvar sistem tutulumu **TSD için** prediktif markerler olarak tespit edilmiştir

ORIGINAL ARTICLE

In vitro activity of *Brucella melitensis* isolates to various antimicrobials in Turkey

AFFAN DENK¹, KUTBETTİN DEMİRDAG¹, AHMET KALKAN², MEHMET ÖZDEN¹, BURHAN CETİNKAYA³ & SULEYMAN S. KİLİC⁴

From the ¹Department of Infectious Diseases and Clinical Microbiology, Faculty of Medicine, Fırat University, Elazığ, ²Department of Infectious Diseases and Clinical Microbiology, Faculty of Medicine, Karadeniz Technical University, Trabzon, ³Department of Microbiology, Faculty of Veterinary, Fırat University, Elazığ, and ⁴Department of Infectious Diseases and Clinical Microbiology, Samsun Training and Research Hospital, Samsun, Turkey



Türkiye'den *Brusella melitensis* izolatlarının çeşitli antimikrobiyallere in vitro duyarlılığı.

- Araştırmacılar bu çalışmada kandan izole edilen 80 *Brusella* izolatının polimeraz zincir reaksiyonu (PZR) ile biotipini belirleyerek ardından çeşitli antimikrobiyallere duyarlılıklarını ve MIC değerlerini belirlemişlerdir.

ORIGINAL ARTICLE

In vitro activity of *Brucella melitensis* isolates to various antimicrobials in Turkey

AFFAN DENK¹, KUTBETTİN DEMİRDAG¹, AHMET KALKAN², MEHMET ÖZDEN¹, BURHAN CETİNKAYA³ & SULEYMAN S. KILIC⁴

From the ¹Department of Infectious Diseases and Clinical Microbiology, Faculty of Medicine, Firat University, Elazığ, ²Department of Infectious Diseases and Clinical Microbiology, Faculty of Medicine, Karadeniz Technical University, Trabzon, ³Department of Microbiology, Faculty of Veterinary, Firat University, Elazığ, and ⁴Department of Infectious Diseases and Clinical Microbiology, Samsun Training and Research Hospital, Samsun, Turkey

- **Amaç:** *Brucella* spp'ne karşı duyarlılık testleri standardize olmayıp rutin olarak kullanılmadığı için **kinolonların ve makrolid grubu** antibiyotiklerin in vitro etkinliği ve MIC değerlerini belirlemek
- Kan kültüründen izole edilen 80 *Brucella* izolatında önce biotip tayini sonra invitro duyarlılıklar çalışılmıştır
- 80 *Brucella* izolatınının 75'i (%93.7) ***B. melitensis* biotip 3**
- 5'i (%6.3) ***B. melitensis* biotip 1** olarak belirlenmiştir.

Table I. In vitro activities of antimicrobial agents against *B. melitensis* isolates.

Antimicrobials	Range ($\mu\text{g/ml}$)	MIC ₅₀ ($\mu\text{g/ml}$)	MIC ₉₀ ($\mu\text{g/ml}$)
Rifampicin	1-8	2	4
Doxycycline	0.06-1	0.25	0.5
Ofloxacin	0.25-2	1	1
Levofloxacin	0.25-2	0.5	1
Moxifloxacin	0.12-1	1	1
Azithromycin	1-16	4	8
Clarithromycin	2-64	8	32

MIC₅₀, minimum inhibitory concentration required to inhibit the growth of 50% of the organisms; MIC₉₀, minimum inhibitory concentration required to inhibit the growth of 90% of the organisms.

Table II. In vitro activities of rifampicin and doxycycline against *B. melitensis* isolates in various studies.

Antimicrobials and references (no.)	Range ($\mu\text{g/ml}$)	MIC ₅₀ ($\mu\text{g/ml}$)	MIC ₉₀ ($\mu\text{g/ml}$)
Rifampicin			
Akova et al. [7]	0.03–1	–	1
Lopez-Merino et al. [12]	0.25–4	1	2
Bodur et al. [29]	0.047–2	0.5	0.75
Khan et al. [34]	0.02–2.5	0.15	1.25
Rubinstein et al. [35]	–	2.5	4
Baykam et al. [36]	0.19–1.5	0.75	1
Bayram et al. [37]	0.5–2	1.5	2
Parlak et al. [38]	0.38–3	1	2
This study	1–8	2	4
Doxycycline			
Akova et al. [7]	0.03–0.5	–	0.5
Trujillano-Martin et al. [11]	0.12–0.25	0.25	0.25
Lopez-Merino et al. [12]	0.03–1	0.25	0.5
Yamazhan et al. [14]	0.03–1	0.25	0.5
Bodur et al. [29]	0.023–0.25	0.047	0.064
Baykam et al. [36]	0.016–0.094	0.032	0.064
Bayram et al. [37]	0.023–0.125	0.047	0.064
Parlak et al. [38]	0.023–0.19	0.047	0.094
Maves et al. [39]	0.032–0.5	0.19	0.38
This study	0.06–1	0.25	0.5

Table III. In vitro activities of quinolones and macrolides against *B. melitensis* isolates in various studies.

Antimicrobials and references (no.)	Range ($\mu\text{g/ml}$)	MIC ₅₀ ($\mu\text{g/ml}$)	MIC ₉₀ ($\mu\text{g/ml}$)
Ofloxacin			
Kocagoz et al. [10]	0.06–2	0.25	0.5
Trujillano-Martin et al. [11]	1–2	2	2
This study	0.25–2	1	1
Levofloxacin			
Kocagoz et al. [10]	0.03–8	0.12	0.5
Trujillano-Martin et al. [11]	0.5	0.5	0.5
Yamazhan et al. [14]	0.25–16	0.5	2
This study	0.25–2	0.5	1
Moxifloxacin			
Trujillano-Martin et al. [11]	1	1	1
Lopez-Merino et al. [12]	0.25–0.5	0.5	0.5
Yamazhan et al. [14]	0.5–16	1	8
This study	0.12–1	1	1
Azithromycin			
Yamazhan et al. [14]	1–32	8	32
Landinez et al. [21]	0.03–2	0.5	1
Garcia-Rodriguez et al. [22]	–	1	2
Parlak et al. [38]	0.75–16	4	8
This study	1–16	4	8
Clarithromycin			
Yamazhan et al. [14]	0.125–32	8	32
Garcia-Rodriguez et al. [22]	–	2	8
Loza et al. [40]	–	2	4
This study	2–64	8	32

Sonuç olarak

- *Brusella melitensis*'e en etkili antibiyotik Doksisisiklin olup,
- Kinolonlar (levofloksasin, moksifloksasin ve ofloksasin)
- Rifampisin, Azitromisin ve Klaritromisin izlemektedir
- Klasik bruselloz tedavisinde **doksisisiklin ve rifampisin** en iyi seçenek iken alternatif olarak **florokinolonlar ve azitromisin** kullanılabilir

Comparison of colistin monotherapy and non-colistin combinations in the treatment of multi-drug resistant *Acinetobacter* spp. bloodstream infections: A Multicenter retrospective analysis

Ilker Inanc Balkan¹, Ayse Batirel², Oguz Karabay³, Canan Agalar⁴, Serife Akalin⁵, Ozlem Alici⁴, Emine Alp⁶, Fatma Aybala Altay⁷, Nilgun Altin⁸, Ferhat Arslan⁹, Turan Aslan¹⁰, Nural Bekiroglu¹¹, Salih Cesur⁸, Aygul Dogan Celik¹², Mustafa Dogan¹³, Bulent Durdu¹⁴, Fazilet Duygu¹⁵, Aynur Engin¹⁶, Derya Ozturk Engin¹⁷, Ibak Gonen¹⁸, Ertugrul Guclu³, Tumer Guven¹⁹, Cigdem Ataman Hatipoglu²⁰, Salih Hosoglu²¹, Mustafa Kasim Karahocagil²², Aysegul Ulu Kilic⁶, Bahar Ormen²³, Davut Ozdemir²⁴, Serdar Ozer², Nefise Oztoprak²⁵, Nurbanu Sezak²⁴, Vedat Turhan²⁶, Nesrin Turker²⁴, Hava Yilmaz²⁷



- ¹ Istanbul University, Cerrahpasa Medical Faculty, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ² Kartal Dr. Lutfi Kirdar Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ³ Sakarya University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Sakarya, Turkey
- ⁴ Fatih Sultan Mehmet Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ⁵ Pamukkale University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Denizli, Turkey
- ⁶ Erciyes University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Kayseri, Turkey
- ⁷ Diskapi Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Ankara, Turkey
- ⁸ Ankara Etlik Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Ankara, Turkey
- ⁹ Istanbul Medipol University, Medical Faculty, Infectious Diseases, Istanbul, Turkey
- ¹⁰ Bezmil Alem University, Medical Faculty, Infectious Diseases, Istanbul, Turkey
- ¹¹ Marmara University, Medical Faculty, Biostatistics, Istanbul, Turkey
- ¹² Trakya University, Medical Faculty, Infectious Diseases, Edirne, Turkey
- ¹³ Namik Kemal University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Tekirdag, Turkey
- ¹⁴ Bakirkoy Sadi Konuk Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ¹⁵ Gaziosmanpasa University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Tokat, Turkey
- ¹⁶ Cumhuriyet University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Sivas, Turkey
- ¹⁷ Haydarpasa Numune Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ¹⁸ Suleyman Demirel University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Isparta, Turkey
- ¹⁹ Ankara Ataturk Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Ankara, Turkey
- ²⁰ Ankara Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Ankara, Turkey
- ²¹ Dicle University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Diyarbakir, Turkey
- ²² Yuzuncu Yil University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Van, Turkey
- ²³ Izmir Ataturk Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Izmir, Turkey
- ²⁴ Duzce University, Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Duzce, Turkey
- ²⁵ Antalya Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Antalya, Turkey
- ²⁶ GATA Haydarpasa Education and Research Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey
- ²⁷ Ondokuz Mayıs University, Medical Faculty, Infectious Diseases and Clinical Microbiology, Samsun, Turkey

Çoklu ilaç direnci olan *Acinetobacter* türlerine bağlı kan dolaşımı enfeksiyonlarında kolistin monoterapisi ile kolistin içermeyen tedavi rejimlerinin etkinliğinin karşılaştırılması: Çok merkezli retrospektif analiz

- Araştırmacılar, 27 üçüncü basamak hizmet veren sağlık merkezinden kan dolaşımı enfeksiyonu etkeni 107 çoklu ilaç direnci olan *Acinetobacter* türlerinin tedavisinde **kolistin monoterapisi** ile **kolistin dışı kombinasyonların** etkinliğini karşılaştırmışlardır.

GEREÇ ve YÖNTEM

- Ocak 2009-Ağustos 2012 arasında takip edilen 107 hasta çalışmaya dahil edildi.
- Etken izole edildikten sonra antimikrobiyal duyarlılık; disk difüzyon, E-test ve broth dilüsyon metodu ile MIC düzeyleri; CLSI kriterlerine göre yapılmıştır
- Birinci grup 36 hasta **kolistin monoterapisi**
- İkinci grup 71 hasta, antibiyotik duyarlılık sonuçlarına göre **kolistin dışı kombinasyon tedavileri** almıştı.
- Çalışmada, birincil sonlanım noktası; **14 günlük mortalite**
- İkincil sonlanım noktası ise ÇİD-A 'in **mikrobiyal eradikasyon ve klinik sonuç** olarak planlanmıştır
- Ortalama izlem süresi; 40 gün olup hastaların tamamındaki sürvi ve mortalite süreleri değerlendirildi.

Total:
107

CM(n= 36)

NCC(n=71)

CES + AG (N=15)

CAR + AG (N=11)

CAR + TIG (N=9)

TIG + AG (N=9)

CAR + SULB (N=5)

TIG + CES (N=4)

CAR + QUIN (N=4)

TIG + TPZ (N=3)

TIG + SULB (N=2)

CAR + CES (N=2)

CAR + RIF (N=1)

FEP + AG (N=1)

OTHERS (N=5)

Figure 1: The distribution of cases within treatment groups (CES: Cefoperazone-sulbactam, AG: Aminoglycoside, CAR: Carbapenem, TIG: Tigecycline, SULB: Sulbactam, QUIN: Quinolone, TPZ: Piperacillin/tazobactam, RIF: Rifampin, FEP: Cefepime)

Table 1: Characteristics of patients receiving colistin monotherapy and noncolistin based combination

<i>Variable</i>	<i>CM (n=36) n (%)</i>	<i>NCC (n=71) n (%)</i>	<i>P</i>
Age (mean±SD)	58.3±20.5	60.9±19.9	0.53
Gender (male/female)	15/21	39/32	0.19
Prior hospital stay (mean duration±SD)	25.4±26.3	26.1±24.7	0.88
Prior ICU stay (mean duration±SD)	18.9±20.9	21.7±22.7	0.55
Charlson comorbidity index (mean±SD)	5.53±3.46	5.11±3.15	0.54
Pitt bacteremia score (mean±SD)	6.8±2.9	6.75±3.6	0.94
APACHE II score (mean±SD)	19.9±8.5	18.4±7.5	0.44
Time to initial treatment			
Early (≤24 h)	18 (50)	55 (77.5)	0.004
Late (>24 h)	18 (50)	16 (22.5)	
Concomitant infection	20 (55.6)	43 (60.6)	0.62

CM=Colistin monotherapy, NCC=Noncolistin based combination, SD=Standard deviation, ICU=Intensive Care Unit, APACHE II=Acute Physiology and Chronic Health Evaluation II

Table 2: Outcome measures according to treatment modalities in patients with MDR-A BSIs

<i>Variable</i>	<i>CM (n=36) n (%)</i>	<i>NCC (n=71) n (%)</i>	<i>P</i>
14-day survival	19 (52.8)	44 (47.2)	0.36
Clinical outcomes			
Cure	11 (31.4)	30 (42.9)	0.45
Improvement	16 (45.7)	24 (34.3)	
Failure	8 (22.9)	16 (22.9)	
Microbial eradication	20 (69)	49 (83)	0.13
All cause in-hospital mortality (n=98)	26 (74.3)	38 (60.3)	0.16
Attribution of mortality (n=87)			
Definitely bacteremia	8 (21.6)	8 (16)	0.17
Probably bacteremia	14 (37.8)	26 (52)	
Nonbacteremia	15 (40.5)	16 (32)	

CM=Colistin monotherapy, NCC=Non-colistin based combination, MDR-A=Multi-drug resistant *Acinetobacter* species, BSIs=Blood stream infections

SONUÇ

- Çoklu ilaç dirençli Acinetobacter spp. tedavisinde;
 - **Kolistin Monoterapisi ile tedavi başarısı %77.1**
 - **Kolistin dışı kombinasyonlar ile %77.2 olup**
- 14 günlük mortalite, klinik iyileşme ve mikrobiyolojik eradikasyon açısından anlamlı farklılık gözlenmedi.



TEŞEKKÜRLER...