26. TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI KONGRESİ

KLİMİK 2026

Dirençli Gram (-) Bakteri Enfeksiyonlarının Tedavisinde Zavicefta'nın Yeri

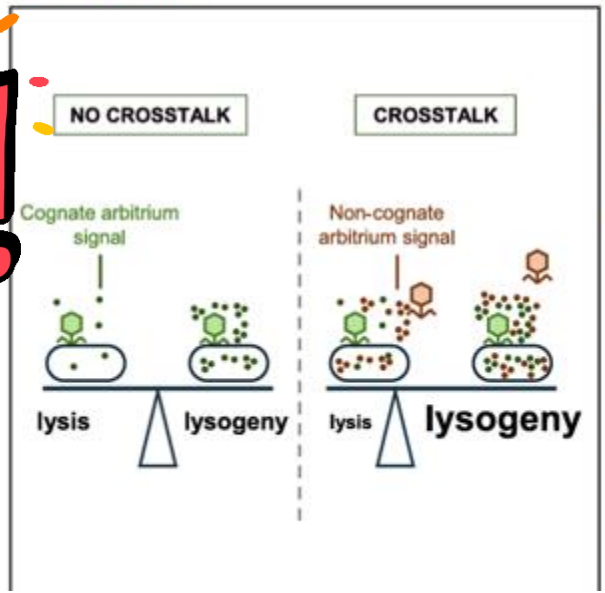
Dr. İmran Hasanoğlu
Ankara Yıldırım Beyazıt Üniversitesi Tıp Fakültesi
Ankara Şehir Hastanesi
Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji ABD

Cell

Article

Arbitrium phages can manipulate each other's lysis/ lysogeny decisions

Graphical abstract



Authors

R. Manley, R. Woodhams, T.J. Arrowsmith, ..., T.R. Blower, B. Temperton, E.R. Westra

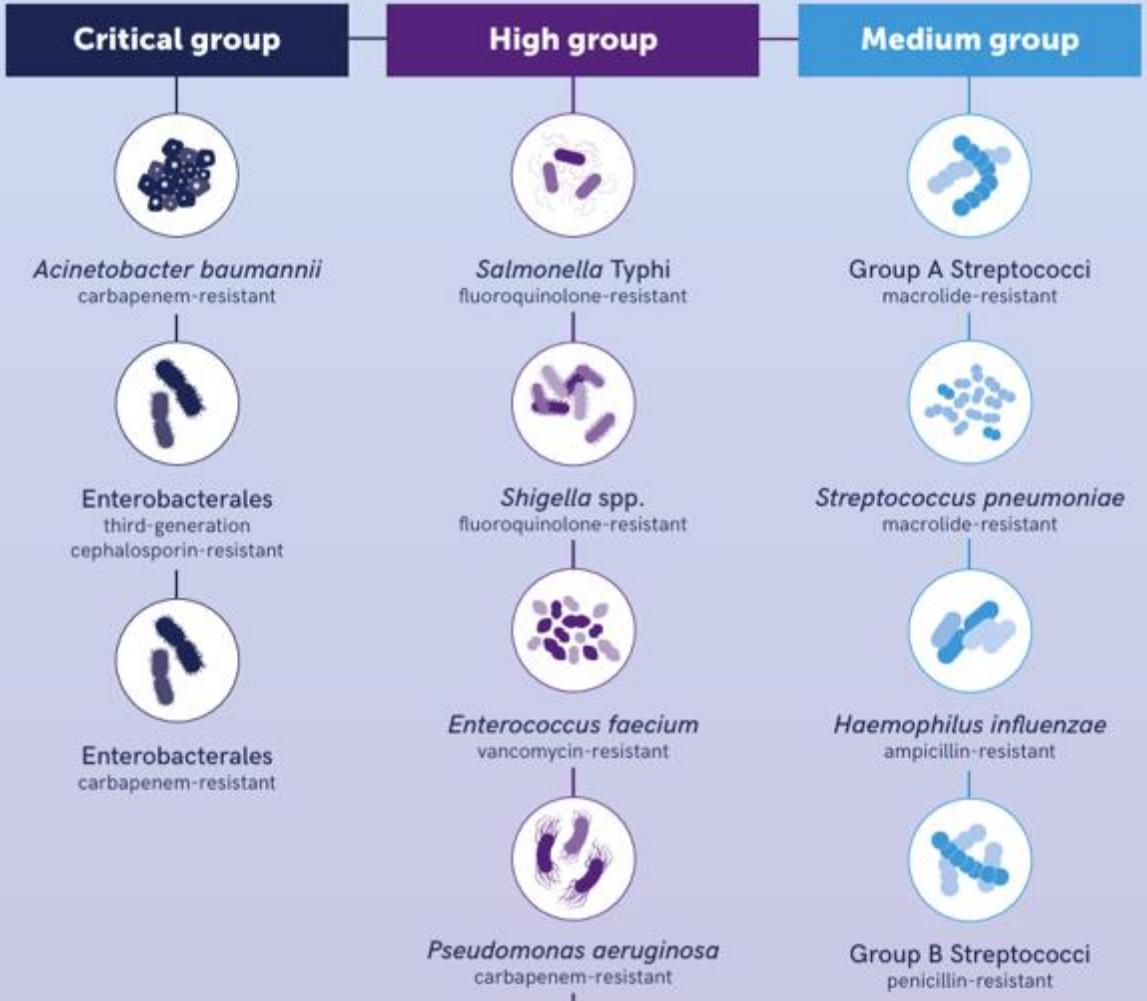
Correspondence

r.manley@exeter.ac.uk

In brief

Arbitrium phages belonging to different species and genera can influence each other's infection dynamics by secreting chemically similar, non-cognate signal peptides. These findings indicate that arbitrium-based communication is not as specific as previously thought.

Fig. 1. WHO Bacterial Priority Pathogens List, 2024 update



WHO Bacterial Priority Pathogens List, 2024

Bizim dünyamız farklı

Karbapenemaz dağılımı — literatürün %70'i KPC üzerine, biz OXA-48 ülkesiyiz

ABD • Güney Am.

KPC baskın → çoklu seçenek

TÜRKİYE

OXA-48 endemik → CAZ-AVI tek seçenek

Hindistan • Balkan

NDM yaygın → + aztreonam

Literatür baştan sona bize yazılmıyor — OXA-48 perspektifiyle okumak zorundayız.

39 yaş erkek hasta…

- ✓ Yüksekten düşme nedeniyle 1 aydır YBÜ
- ✓ VIP + Kan kültüründe GNB

Meropenem..

Numune Türü :

Sonuç : co SEFTAZİDİM-AVİBACTAM: DUYARLI (DİSK DİFFÜZYON YÖNTEMİ İLE ÇALIŞILMIŞTIR

Laboratuvar

Numune Bilgileri	Tanı : R94.4 Böbrek fonksiyon çalışmalarının anormal sonuçları		
Mikroorganizma	**Klebsiella pneumoniae**	**Koloni Sayısı**	100 000 cfu/mL

ANTİBİYOGRAM	Antibiyotik Adı	Durum	
		Duyarlı/Orta Duyarlı/Dirençli	MİK (mg/L) / Zon çapı (mm)
	Cefepime	DİRENÇLİ	>=32.0
	Ceftazidime	DİRENÇLİ	>=32.0
	Ciprofloxacin	DİRENÇLİ	>=4.0
	Gentamicin	DİRENÇLİ	>=16.0
	Meropenem.	DİRENÇLİ	>=16.0
	Piperacillin/Tazobactam	DİRENÇLİ	>=128.0
	Ampicillin	DİRENÇLİ	>=32.0
	Cefuroxime	DİRENÇLİ	>=64.0
	Cefuroxime Axetil	DİRENÇLİ	>=64.0
	Ceftriaxone	DİRENÇLİ	>=64.0
	Amikacin	DİRENÇLİ	32.0
	Nitrofurantoin	DİRENÇLİ	256.0
	Trimethoprim/Sulfamethoxazole	DİRENÇLİ	>=320.0
	Cefixime	DİRENÇLİ	>=4.0
	Ertapenem	DİRENÇLİ	>=8.0
	Amoxicilin/Clavulanic Asit 06		

Açıklama AMA°KASA°N: KarAYA±laAYt

veva vetersiz savÃ±da olduÃŸundan

Açıklama BMX090

Tıbbi Laboratuvar Yorum	Kolistin : Duyarlı

CAZAVİ..

Avibaktamın özgünlüğü

Tek bir inhibitör — birçok beta-laktamaz sınıfına etki

Sınıf A

KPC, ESBL

İnhibe eder

Sınıf C

AmpC

İnhibe eder

Sınıf D

OXA-48 ✓

İnhibe eder

Sınıf B

NDM, VIM, IMP

ETKİSİZ

Türkiye için kritik: OXA-48 ende inhibe eden birkaç ajandan biri

Meropenem-vaborbaktam ve imipenem-r – pratikte bizim için CAZ-AVI tek seçenek.

Türkiye'den son 2 yıl..

23 merkez • 106 hasta • CRKP-BSI

Kan kültürü gününde başlanan CAZ-AVI → 30 günlük mortaliteyi bağımsız olarak azaltıyor

Mert A, Derin O, Akalın H et al. Sci Rep 2024;14:26337

Çok merkezli İstanbul • CAZ-AVI vs Polimiksin

CAZ-AVI, 30 günlük mortalitede net üstün

Dumlu R, Şahin M et al. Antibiotics 2024;13:990 + JGAR 2024

Bursa Uludağ • 147 kolonize hasta

CAZ-AVI kolonizasyonu (perianal sürüntü negatifleşmesi) etkileyebilir

Akalın H et al. Sci Rep 2025

154 CRKP bakteremi • 2021–2024

CAZ-AVI direnç oranı %42.8 — dünya ortalamasının çok üzerinde

MDPI Antibiotics 2025;14:1085 (Türkiye tek merkez)

CAZ-AVI vs diğer uygun tedaviler

Aslan AT ve ark. Int J Antimicrob Agents 2026;67:107650

ÇALIŞMA DİZAYNI

- 5 üniversite hastanesi
- 180 hasta, 1:1 eşleştirilmiş retrospektif
- %93.9 OXA-48 • %6.1 KPC
- %95.6 K. pneumoniae • %63.9 YBÜ
- %41.1 pnömoni • %20 IAI • %13.3 ÜSE

TEMEL BULGULAR

30 GÜNLÜK MORTALİTE

%35.6 vs **%56.7**

CAZ-AVI vs OAAT • p=0.004 • aOR 0.37 (0.19–0.71)

21 GÜNLÜK KLİNİK YANIT

%50.0 vs **%26.7**

aOR 3.32 (1.68–6.53) • p<0.001

AKUT BÖBREK HASARI

%16.7 vs **%35.6** *p=0.007*

OXA-48 endemik Türkiye'de CAZ-AVI ilk tercih; polimiksin bazlı rejimlere karşı mortalitede, klinik yanıtta ve renal güvenlikte net üstün. Monoterapi yeterli (%28.6 vs %43.9 mort., p=0.196).

CAZ-AVI vs standart antibiyotik tedavisi

Li J ve ark. J Thorac Dis 2025;17(10):8561-8570

8 çalışma • 728 hasta • CRKP pulmoner enfeksiyonu • Meta-analiz

KLİNİK ETKİNLİK

OR 2.56 *(1.84–3.58)*

p<0.00001

→ *CAZ-AVI üstün*

BAKTERİYOLOJİK KLIRENS

OR 2.34 *(1.37–4.00)*

p=0.002

→ *CAZ-AVI üstün*

MORTALİTE

OR 0.46 *(0.33–0.64)*

p<0.00001

→ *CAZ-AVI ↓ mort.*

ADVERS REAKSİYON

OR 0.31 *(0.11–0.88)*

p=0.03

→ *CAZ-AVI ↓ AE*

CAZ-AVI CRKP pnömonisinde standart tedaviye (polimiksin bazlı ağırlıklı) klinik etkinlik, bakteriyolojik kllrens, mortalite ve güvenlik açısından üstün

OXA-48 ÖZELİNDE META-ANALİZ

OXA-48'de CAZ-AVI vs en iyi mevcut tedavi

Foo A ve ark. JAC-Antimicrob Resist 2026

TASARIM

5	Gözlemsel çalışma
514	OXA-48 Enterobacterales hastası
249	CAZ-AVI kolunda hasta
265	BAT kolunda hasta

SONUÇLAR

BİRİNCİL SONUÇ: 30 GÜNLÜK MORTALİTE

%22.5 vs **%36.6**

CAZ-AVI (56/249) vs BAT (97/265)

OR 0.46 *(95% GA 0.29–0.71)*

İKİNCİL SONUÇ: KLİNİK BAŞARI

OR 3.67

(95% GA 1.79–7.53, p<0.05)

3 çalışma • 218 hasta • CAZ-AVI lehine tutarlı bulgu

OXA-48'de CAZ-AVI lehine mortalitede anlamlı azalma • ESCMID/IDSA 2024 kılavuzlarını destekliyor

Tedavinin 4. gününde kan kültüründe üreme devamı….

Problem No:1

Observational Study > Clin Infect Dis. 2025 Nov 6;81(4):710-720. doi: 10.1093/cid/ciaf165.

Microbiology Laboratory Testing Practices of Gram-Negative Bloodstream Infections With Difficult-to-Treat Resistant Phenotypes in US Hospitals

Shawn H MacVane [1], Rena Moon [2], Joy David [2], Ning Rosenthal [2], Romney M Humphries [3]

342
Hastane

110.322
GN-Bakteremi epizodu

6.5 yıl
2017–2023

GECİKME

~4 gün

DTR fenotiplerde antibiyogram sonucu 92.2 saat; kültür → sonuç

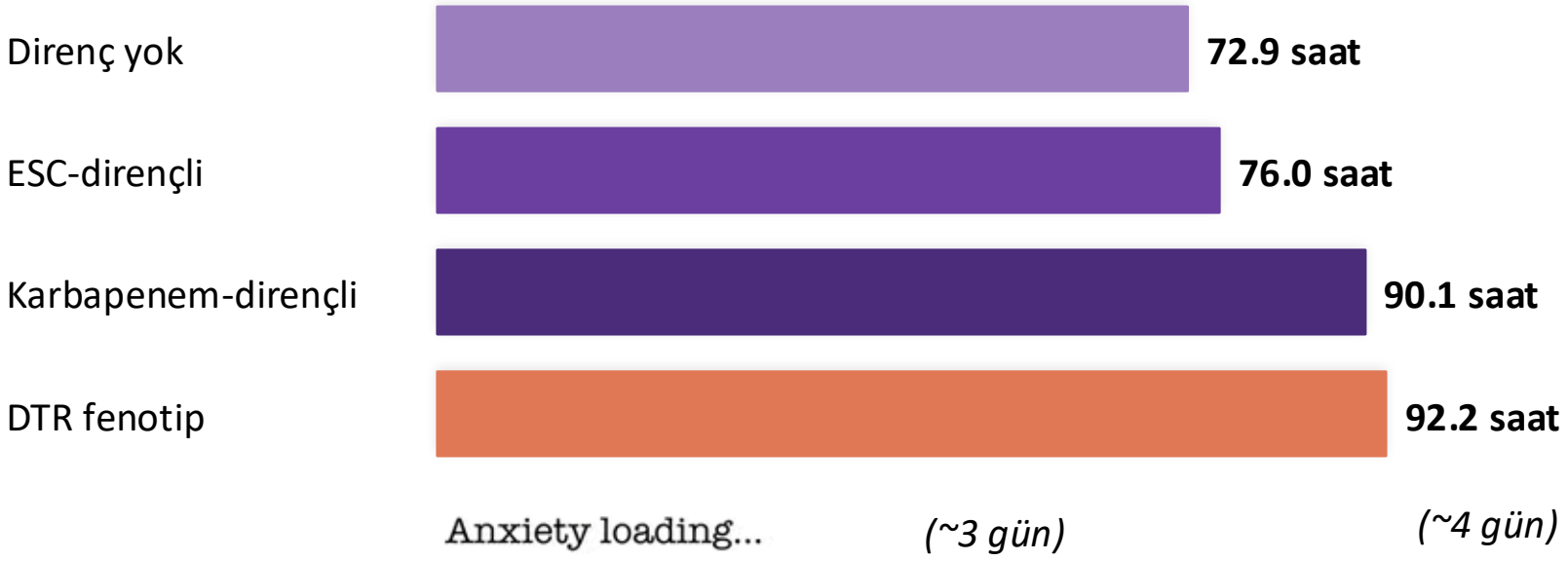
%2.5

Tüm epizodların sadece %2.5'inde yeni-nesil antibiyotik testi yapılmış

5'te 4

DTR hastaların %81.2'si ilk 2 günde uygunsuz tedavi alıyor

Saatler değil — GÜNLER kaybediliyor



Observational Study > Clin Infect Dis. 2025 Nov 6;81(4):710-720. doi: 10.1093/cid/ciaf165.

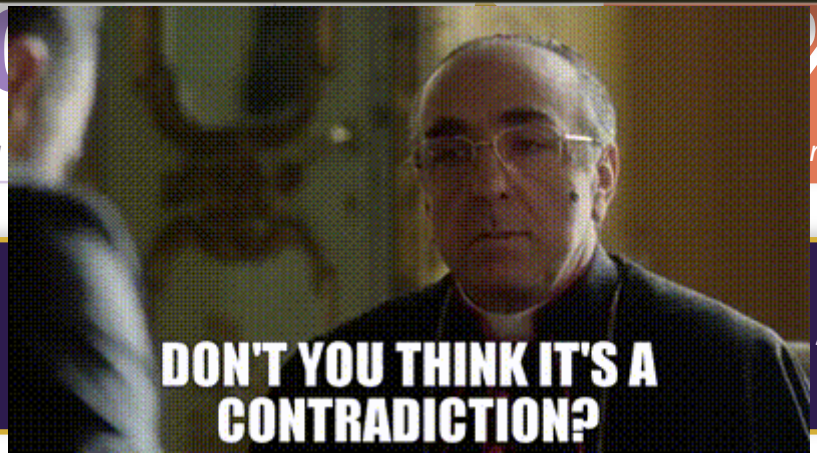
Microbiology Laboratory Testing Practices of Gram-Negative Bloodstream Infections With Difficult-to-Treat Resistant Phenotypes in US Hospitals

Shawn H MacVane [1], Rena Moon [2], Joy David [2], Ning Rosenthal [2], Romney M Humphries [3]

En çok ihtiyaç duyanlar en az erişime sahip!

%0

epizodlarda



%7.7

rtış — ama hâlâ düşük

%30.5

AST yapılıyor

Bizde durum…..

Problem No:2

CAZ-AVI direncinin küresel trendi....

Wang Y ve ark. Antimicrob Resist Infect Control 2025;14:10

136
Çalışma

507.254
İzolat

31
Ülke

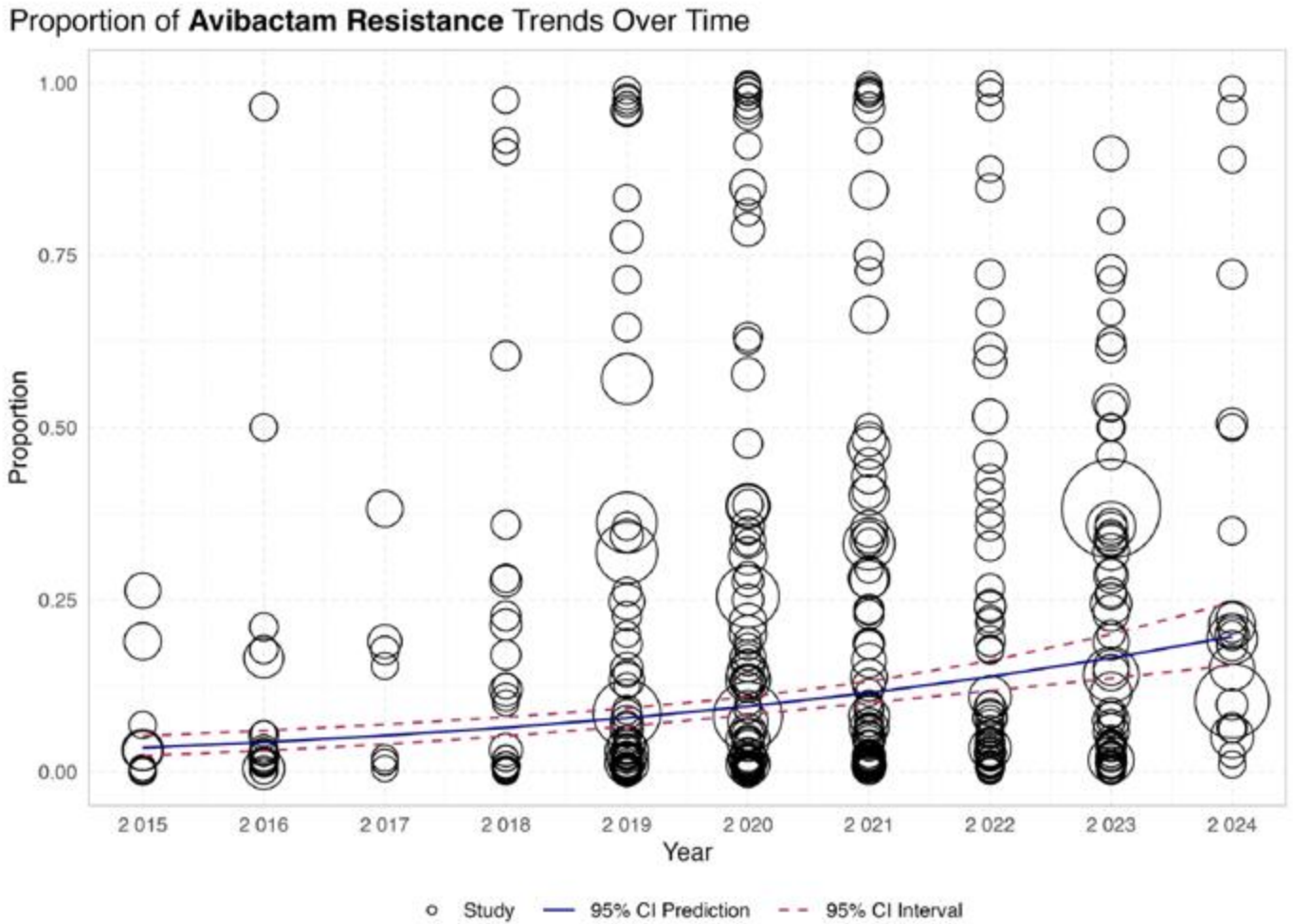
2015–2020
%5.6
221.278 izolat

2021–2024
%13.2
285.978 izolat

TÜRKİYE
%38.7
(Enterobacterales)

BÖLGESEL DİRENÇ DAĞILIMI

Asya	Afrika	Avrupa	Güney Am.	Kuzey Am.
%19.3	%13.6	%11.0	%6.1	%5.3



The correlation is statistically significant (r = 0.212, *p*-value = <0.001, 95% CI [0.141, 0.282]).

Fig. 3 Meta-regression analysis for changes in the proportion of CAZ–AVI resistance to gram-negative bacilli isolates over time

%13.2

Dünya geneli
(2021–2024)

%~30

Çin yüksek volümlü
merkezler (20–40)

Mermer and Çağlayan *BMC Microbiology* (2026) 26:114
https://doi.org/10.1186/s12866-026-04727-z

BMC Microbiology

RESEARCH Open Access

Prevalence, clinical characteristics, and antibiotic resistance of carbapenem-resistant *Klebsiella pneumoniae* in a tertiary hospital in Türkiye (2023–2025)

Sinan Mermer[1*] and Ertuğrul Çağlayan[2]

Abstract

Background Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) represents a growing public health threat due t limited treatment options, high morbidity and mortality rates. This study aimed to investigate the prevalence, clini characteristics, and antibiotic resistance profiles of CRKP isolates identified in a tertiary hospital in Türkiye betwee 2023 and 2025.

Methods A retrospective observational study was conducted using microbiological and clinical data collected from patients diagnosed with CRKP infections between January 2023 and April 2025. A total of 1588 CRKP isolates were retrospectively analyzed and compared with patient clinical data. Bacterial identification and antimicrobial susceptibility testing were performed using the BD Phoenix 100 M50 automated system (Becton Dickinson Comp USA), and results were interpreted in accordance with the European Committee on Antimicrobial Susceptibility Testing (EUCAST) guidelines.

Results Among 2376 *K. pneumoniae* isolates, the overall CRKP prevalence was 66.8%. The annual carbapenem resistance rates were 64.9% in 2023, 69.4% in 2024, and 61.0% in 2025, resp CRKP isolates were as follows: tigecycline 14.7%, colistin 23.0%, fosfomycin 47.6% ceftazidime-avibactam 50.9%, an amikacin 66.8%. The prevalence of CRKP was significantly higher among in (26.8%). Of the CRKP-positive samples, 62.5% were collected from patients in intensive care units (ICUs), 12.2% fro hematology, and 5.1% from oncology departments. Tracheal aspirates accounted for 43.5% of isolates, followed b urine samples at 25.8%.

Conclusions The study revealed a notably high prevalence of CRKP with substantial resistance to most common used antibiotics. Among the tested antibiotics, tigecycline showed the lowest resistance rate, consistent with its limited usage profile. These findings underscore the urgent need for strengthened infection control measures and may guide more effective empirical treatment strategies for CRKP infections in the region.

Keywords Carbapenem, Antibiotic resistance, *Klebsiella pneumoniae*, Antimicrobial susceptibility

antibiotics

MDPI

Article

Ceftazidime–Avibactam Resistance in Carbapenem-Resistant *Klebsiella pneumoniae* Bloodstream Infections: Risk Factors and Clinical Outcomes

Ayten Yanık * and Ömer Karaşahin

Department of Infectious Disease, Erzurum Regional Training and Research Hospital, 25070 Erzurum, Türkiye; mrkrshn@gmail.com
* Correspondence: calkanayten@gmail.com; Tel.: +90-5419100994

Abstract

Background/Introduction: Carbapenem-resistant Klebsiella pneumoniae (CRKP) bacteremia is a serious public health problem due to its high mortality rate and limited treatment options. This study aimed to identify risk factors associated with ceftazidime-avibactam (CAZ-AVI) resistance in CRKP bacteremia and to evaluate its impact on clinical outcomes. Methods: This retrospective single-center cohort study included adult patients with CRKP bloodstream infections treated at a tertiary hospital in Türkiye between January 2021 and December 2024. Demographic, clinical, and laboratory data were collected, and risk factors for CAZ-AVI resistance and 30-day mortality were analyzed. Results: Among 154 patient 42.8% had CAZ-AVI-resistant strains. Resistant infections were associated with longer hospital stays and higher Charlson Comorbidity Index (CCI) scores. The resistance rate was lower in patients with intra-abdominal infections, while fluoroquinolone and fosfomycin use was more common in the resistant group. The overall 30-day mortality rate was 57%. Pitt bacteremia score and creatinine levels were identified as independent predictors of mortality. Discussion: CAZ-AVI resistance in CRKP bacteremia appears to develop

Wang et al.
Antimicrobial Resistance & Infection Control (2025) 14:10
https://doi.org/10.1186/s13756-025-01518-5

Antimicrobial Resistance and Infection Control

REVIEW Open Access

Global trends of ceftazidime–avibactam resistance in gram-negative bacteria: systematic review and meta-analysis

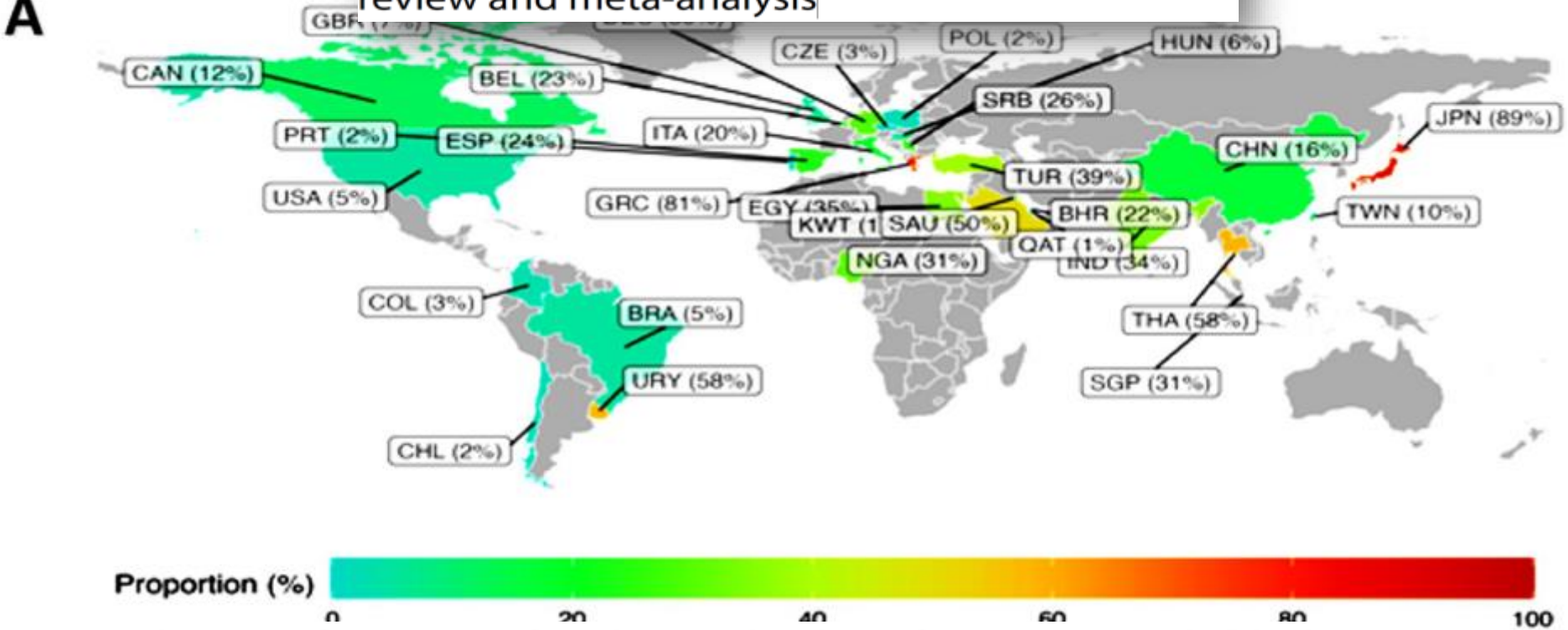


Fig. 4 The proportions of CAZ–AVI resistance of GNB isolates (**A** *Enterobacterales*, **B** Non-fermentative gram-negative bacilli) based on countries

Wang et al.
Antimicrobial Resistance & Infection Control (2025) 14:10
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Antimicrobial Resistance
and Infection Control

REVIEW Open Access

Global trends of ceftazidime–avibactam resistance in gram-negative bacteria: systematic review and meta-analysis

B

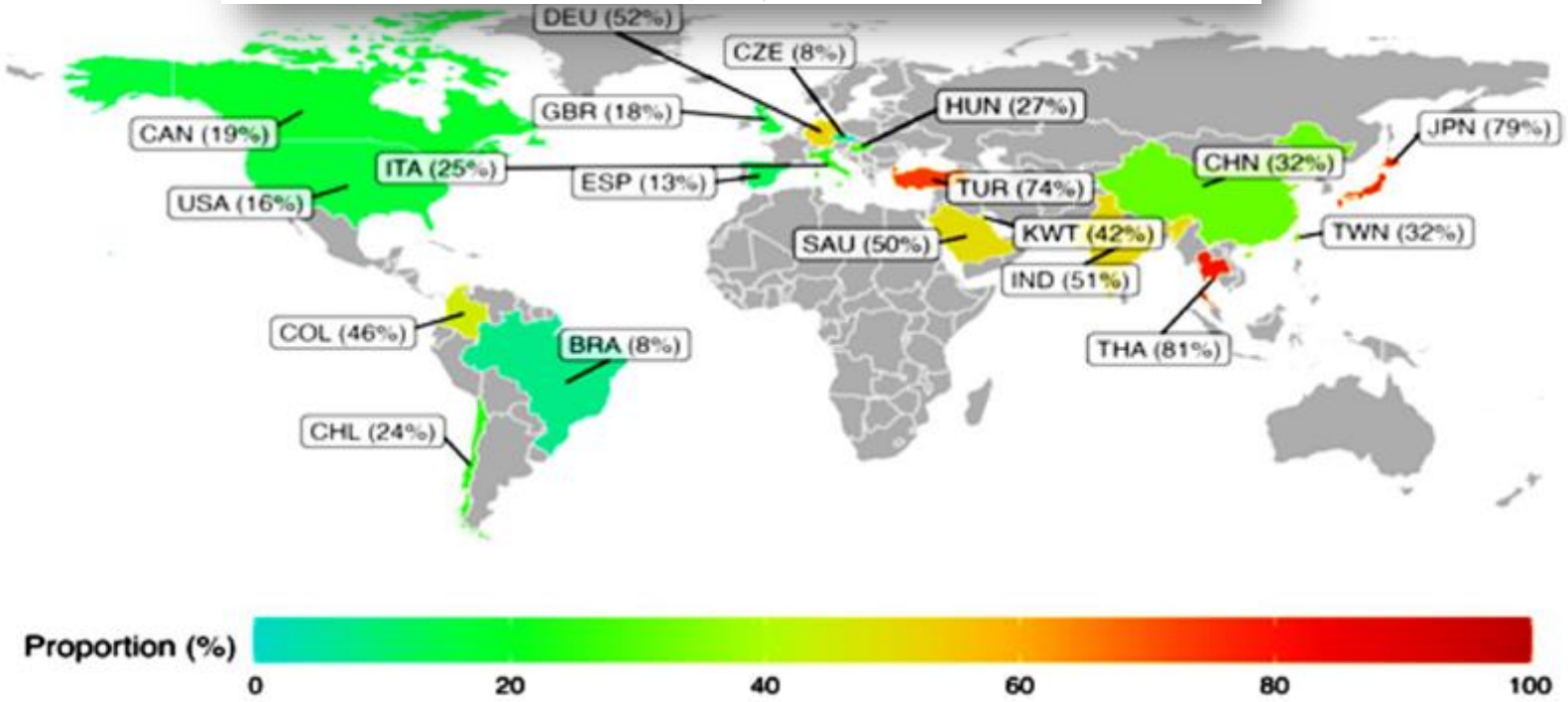
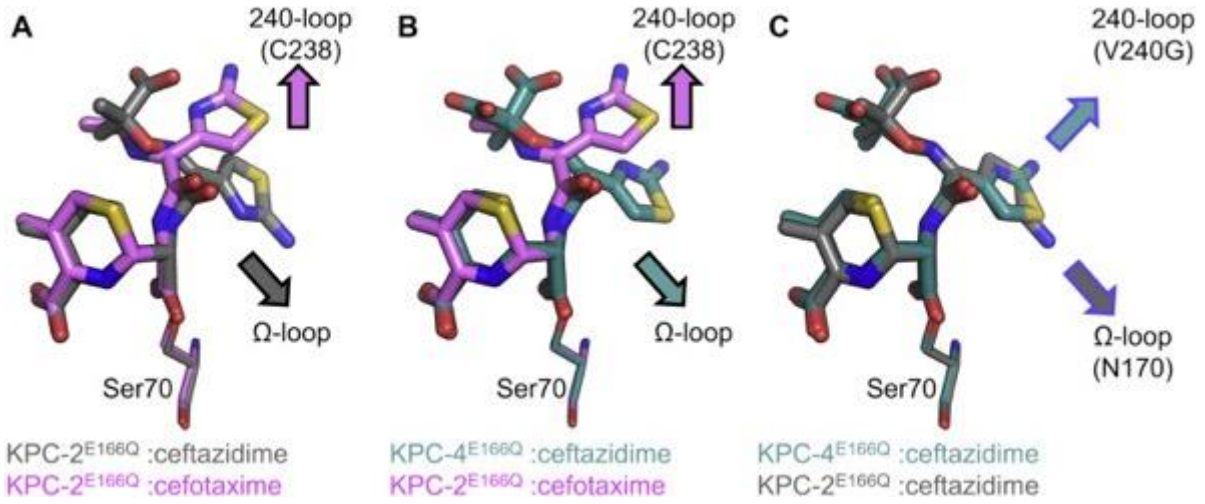


Fig. 4 The proportions of CAZ–AVI resistance of GNB isolates (**A** *Enterobacterales*, **B** Non-fermentative gram-negative bacilli) based on countries

Salıncak etkisi (seesaw effect) olabilir mi?



Ω-loop Mutasyonu ve Salıncak Etkisi

KPC üreten Klebsiella, CAZ-AVI tedavisi sırasında Ω-loop bölgesinde mutasyon kazanabilir. En sık D179Y veya D179N

Seftazidime karşı afinite artar

D179Y / D179N

Ω-loop mutasyonu

Karbapenemi parçalama yeteneği azalır

→ Meropenem yeniden duyarlı olur

OXA48 için geçerli değil…

Önce yanıt, sonra yanıtsızlık beklerdik….

Neden Türkiye bu kadar hızlı kaybediyor?

Sonuç: En riskli hastaya, en geç aşamada, zaten seleksiyona uğramış bakteri popülasyonuna verdik

COVID-19 mirası

2020–2022 yoğun bakım patlaması + kültürsüz geniş-spektrum kullanımı + enfeksiyon kontrolü kontrolsüzlüğü

Kolonize hasta havuzu

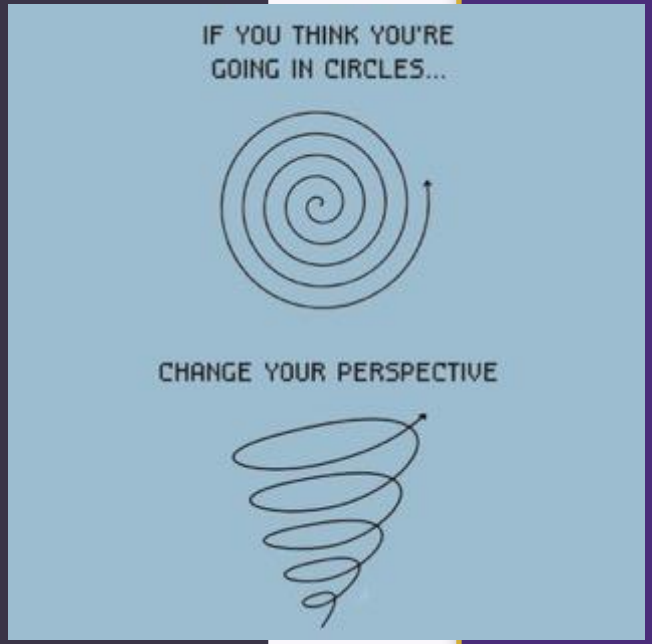
Stewardship zayıflığı

Antibiyotik tüketimi OECD'nin 2 katı

Geri ödeme paradoksu

Köprüden önce son çıkış….

"Bizde antimikrobiyal yönetişimi olamaz ki! Elde ne varsa onu veriyoruz."



Antimikrobiyal
Yönetişim en çok bizde önemli!
Seçenek az
DAHA ÇOK dikkat

Yanıtsızlık bazen bakterinin değil, dozun problemidir….

adult and pediatric patients 3 months and older (1.2)

- Hospital-acquired Bacterial Pneumonia and V[illegible]ed Bacterial Pneumonia (HABP/VABP) in patients 18 year[illegible]

To reduce the development of drug-resistant bacte[illegible] the effectiveness of AVYCAZ and other antibacterial[illegible]Z should be used only to treat infections that are proven or str[illegible]o be caused by susceptible bacteria. (1.4)

----------DOSAGE AND ADMINISTRA[illegible]----------

Dosage of AVYCAZ in Adult Patients with Creatinine[illegible]rance (CrCl) greater than 50 mL/min (2.1)

Infection	Dose	Frequency	Infusion Time
cIAI, cUTI including Pyelonephritis, HABP/VABP	AVYCAZ 2.5 grams (ceftazidime 2 grams and avibactam 0.5 grams)	Every 8 hours.	2 hours

Dosage of AVYCAZ in Pediatric Patients 2 to less than 18 years with Estimated Glomerular Filtration Rate (eGFR) greater than 50 mL/min/1.73 m^2 and 3 months to less than 2 years without Renal Impairment (2.2)

Infection	Age Range	Dose	Infusion

patients 2 years and older with renal impairment. There is insufficier information to recommend a dosing regimen for cIAI or cUTI in ped patients younger than 2 years with renal impairment. (2.3)

- See Full Prescribing Information for instructions for constituting sup dry powder and subsequent required dilution. (2.4)
- See Full Prescribing Information for drug compatibilities. (2.5)

----------DOSAGE FORMS AND STRENGTHS----------

AVYCAZ 2.5g (ceftazidime and avibactam) for injection is supplied as sterile powder for constitution in single-dose vials containing ceftazidir grams (equivalent to 2.635 grams of ceftazidime pentahydrate/sodium carbonate powder) and avibactam 0.5 grams (equivalent to 0.551 grams avibactam sodium). (3)

----------CONTRAINDICATIONS----------

AVYCAZ is contraindicated in patients with known serious hypersensi to the components of AVYCAZ (ceftazidime and avibactam), avibactar containing products or other members of the cephalosporin class. (4)

----------WARNINGS AND PRECAUTIONS----------

- Decreased efficacy in adult cIAI patients with baseline CrCl of 30 to than or equal to 50 mL/ min: Monitor CrCl at least daily in adult and pediatric patients with changing renal function and adjust the dose of AVYCAZ accordingly. (5.1)
- Hypersensitivity reactions: Includes anaphylaxis and serious skin rea

Get the Guidelines App!

GET IT ON Google Play | Download on the App Store

Introduction

Table 1. Suggested dosing of antibiotics for the treatment of antimicrobial resistant infections in adults, assuming normal renal and hepatic function

IDSA 2023 Guidance on the Treatment of Antimicrobial Resistant Gram-Negative Infections

Published by IDSA, 6/7/2023

A Focus on Extended-spectrum β-lactamase-Producing Enterobacterales, AmpC β-Lactamase-Producing Enterobacterales, Carbapenem-Resistant Enterobacterales, *Pseudomonas aeruginosa* with Difficult-to-Treat Resistance, Carbapenem-Resistant Acinetobacter *baumannii*, and *Stenotrophomonas maltophilia*

Cefiderocol	2 grams IV every 8 hours, infused over 3 hours
Ceftazidime-avibactam	2.5 grams IV every 8 hours, infused over 3 hours
Ceftazidime-avibactam PLUS aztreonam	**Ceftazidime-avibactam:** 2.5 grams IV every 8 hours, infused over 3 hours **PLUS** **Aztreonam:** 2 grams IV every 6-8 hours (every 6 hour dosing preferred if possible), infused over 3 hours Additional information in **Supplemental Material.**
Ceftolozane-tazobactam	**Cystitis:** 1.5 grams IV every 8 hours, infused over 1 hour

> Antimicrob Agents Chemother. 2025 Jul 2;69(7):e0048825. doi: 10.1128/aac.00488-25. Epub 2025 Jun 6.

A pre-post quasi-experimental study of antimicrobial stewardship exploring the impact of a multidisciplinary approach aimed at attaining an aggressive joint pharmacokinetic/pharmacodynamic target with ceftazidime/avibactam on treatment outcome of KPC-producing *Klebsiella pneumoniae* infections and on ceftazidime/avibactam resistance development

Milo Gatti [1 2], Matteo Rinaldi [1 3], Pier Giorgio Cojutti [1 2], Cecilia Bonazzetti [1 3], Antonio Siniscalchi [4], Tommaso Tonetti [1 5], Simone Ambretti [1 6], Sara Tedeschi [1 3], Maddalena Giannella [1 3], Pierluigi Viale [1 3], Federico Pea [1 2]

218 KPC-Kp hastası — müdahale öncesi ve sonrası karşılaştırması

Sürekli infüzyon
+ TDM
+ Multidisipliner ekip

MİKROBİYOLOJİK ERADİKASYON — *P<0,001*

%53 → %81

KLİNİK KÜR — *P<0,001*

%48 → %71

90 GÜNLÜK DİRENÇ GELİŞİMİ — *P=0,02*

%16 → %6

J Antimicrob Chemother. 2024 Nov 4;79(11):2801-2808. doi: 10.1093/jac/dkae290.

An innovative population pharmacokinetic/pharmacodynamic strategy for attaining aggressive joint PK/PD target of continuous infusion ceftazidime/avibactam against KPC- and OXA-48- producing Enterobacterales and preventing resistance development in critically ill patients

Sürekli infüzyon + TDM

01 **EKFC denklemi en doğru**

Böbrek fonksiyonunu Seftaz/Avi klerensine göre tahmin etmede en başarılı formül.

02 **Sadece eCLcr'a göre doz yetersiz**

Mevcut yaklaşım — sadece kreatinin klerensine göre azaltma — kritik hastada suboptimal.

03 **Artmış böbrek fonksiyonunda doz ↑**

Augmented renal clearance hastalarında daha yüksek doz gerekli.

Sonuç: **TDM eşliğinde yüksek doz sürekli infüzyon → optimal PK/PD + direnç önleme**

Front Pharmacol. 2025 Aug 7:16:1618987. doi: 10.3389/fphar.2025.1618987. eCollection 2025.

Continuous infusion versus intermittent dosing of ceftazidime/avibactam in critically ill patients with *Klebsiella pneumoniae* OXA-48 or *Pseudomonas aeruginosa* infections: a single-center randomized open-label trial (ZAVICONT). Rationale and design

Mirna Momčilović [1], Ivan Šitum [2], Ante Erceg [2], Marko Siroglavić [3], Mila Lovrić [4 5 6], Laura Nižić Nodilo [7], Anita Hafner [7], Jasmina Lovrić [7], Petra Turčić [8], Dora Fabijanović [1], Ana Marinić [1], Vanja Nedeljković [1], Marijan Pašalić [1], Luka Perčin [1], Dubravka Šipuš [1], Davor Miličić [1 6], Daniel Lovrić [1]

Observational Study > Int J Mol Sci. 2023 Mar 1;24(5):4767. doi: 10.3390/ijms24054767.

Ceftazidime-Avibactam (C/A) Resistant, Meropenem Sensitive KPC-Producing *Klebsiella pneumoniae* in ICU Setting: We Are What We Are Treated with?

Silvia Corcione [1 2], Ilaria De Benedetto [1], Nour Shbaklo [1], Giulia Torsello [3], Tommaso Lupia [4], Gabriele Bianco [5], Rossana Cavallo [5], Luca Brazzi [3], Giorgia Montrucchio [3], Francesco Giuseppe De Rosa [1]

Suboptimal Maruziyet Direnç Doğuruyor!

eGFR ve CrCl: Aynı Şey Değil

Hastane laboratuvarında çıkan eGFR ile ilaç doz ayarında kullanılan CrCl farklı formüllerdir. Bu fark, CAZ-AVI gibi ajanlarda doz hatasına neden olabilir.

eGFR
Estimated GFR

FORMÜL
CKD-EPI veya MDRD

BIRIM
mL/dk/1,73 m²

NORMALIZE
Yüzey alanına göre normalize edilir

KILO
Kilo dahil edilmez

AMAÇ
KBH evrelemesi

VS

CrCl
Cockcroft–Gault

FORMÜL
(140 – yaş) × kilo / (72 × Cr)

BIRIM
mL/dk

NORMALIZE
Yüzey alanına göre normalize EDİLMEZ

KILO
Hastanın kilosu DAHİL

AMAÇ
İlaç doz ayarı

YBÜ'DE EK **RİSK** · **ARC** (AUGMENTED RENAL CLEARANCE)

- ✓ Kritik hastada eGFR daha da güvenilmez.
- ✓ Sepsis, yanık, genç hasta, hiperdinamik dolaşımda renal klirens artar
- ✓ "normal eGFR" gerçek renal fonksiyonu yansıtmayabilir.

Olgu: Aynı Hasta, Farklı İki Sonuç

68 yaşında kadın · 80 kg · Serum kreatinin: 1,0 mg/dL

LABORATUVAR ÇIKTISI · eGFR

48 *mL/dk/1,73 m²*

YANLIŞ KARAR

"50'nin altında — dozu azaltayım"

→ Underdosing · Direnç riski ↑

DOĞRU HESAP · COCKCROFT–GAULT CrCl

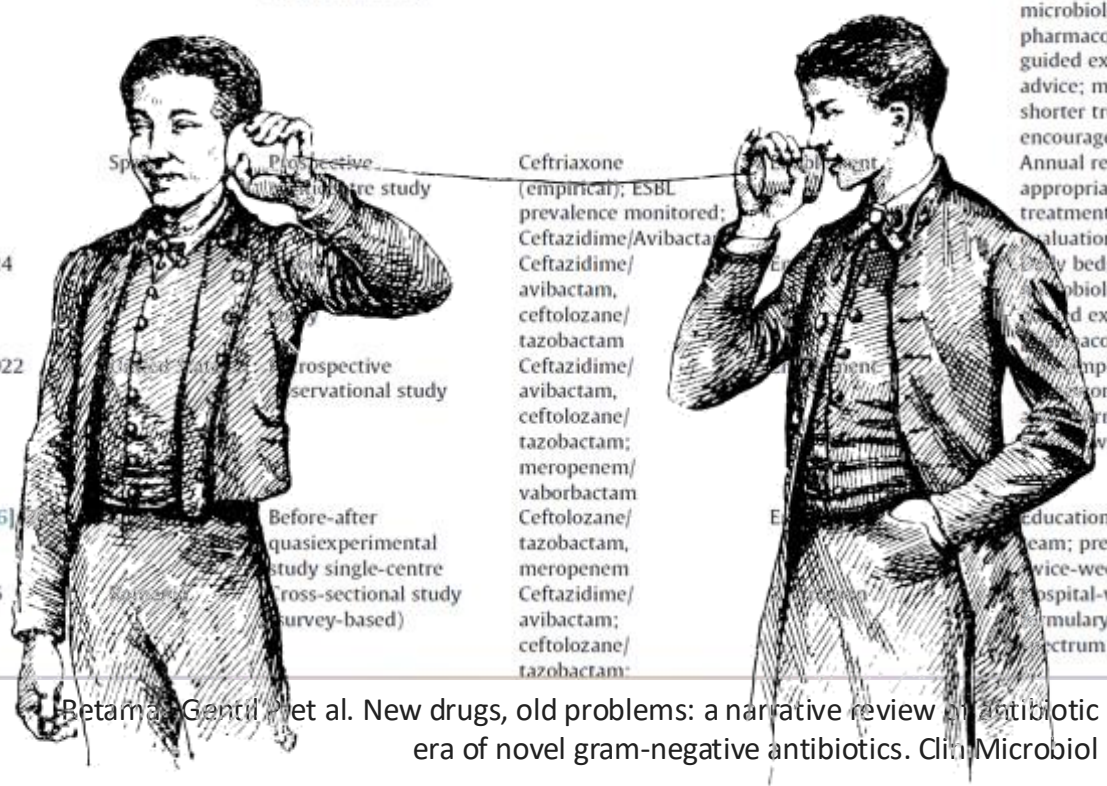
$$\frac{(140 - 68) \times 80}{72 \times 1{,}0} \times 0{,}85 \text{ (kadın)}$$

$$= 68 \text{ mL/dk}$$

DOĞRU KARAR · > 50 mL/dk

→ *Standart doz, doz azaltma GEREKMEZ*

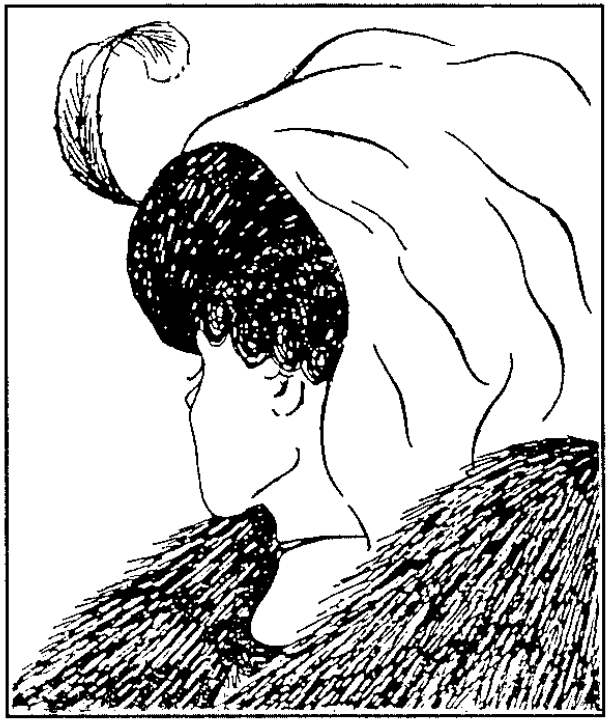
Author, y	Country	Study design	New antibiotic targeted	ASP intervention type	ASP interventions specifically
McCrinck et al. [21], 2023	United States	Multicentre retrospective cohort study	Ceftazidime/ avibactam, ceftolozane/ tazobactam, meropenem-vaborbactam	Enablement	Alert system, ID consult recommendation, collaboration between ID consultant, microbiologist and ICU consultant. Internal guidelines and daily monitoring.
Gatti et al. [17], 2025	Italy	Retrospective multicentre study	Ceftazidime/Avibactam	Enablement	Multidisciplinary collaboration between ID consultant, microbiologist and pharmacologist for TDM-guided expert pharmacological advice; monotherapy and shorter treatment duration encouragement.
Giménez-Pérez et al. [18], 2024	Spain	Prospective multicentre study	Ceftriaxone (empirical); ESBL prevalence monitored; Ceftazidime/Avibacta	Enablement	Annual report on appropriateness of empirical treatment; local guideline evaluation; info campaigns.
Rinaldi et al. [22], 2024			Ceftazidime/ avibactam, ceftolozane/ tazobactam		bedside meetings; biology updates; TDM-d expert clinical acological advice.
Khadem et al. [20], 2022		Retrospective observational study	Ceftazidime/ avibactam, ceftolozane/ tazobactam; meropenem/ vaborbactam		mplementation in a TASP ork; automated alerts rmacist-integrated vs.
Duch-Llorach et al. [16]		Before-after quasiexperimental study single-centre	Ceftolozane/ tazobactam, meropenem	E	educational sessions by ASP eam; prescriber feedback; wice-weekly clinical reviews.
Hincu et al. [19], 2025		Cross-sectional study (survey-based)	Ceftazidime/ avibactam; ceftolozane/ tazobactam;		ospital-wide restriction rmulary of certain broad-ectrum antibiotics.



Retamar-Gentil J, et al. New drugs, old problems: a narrative review of antibiotic stewardship programme in the era of novel gram-negative antibiotics. Clin Microbiol Infect. 2026 Apr;32(4):554-559

Kalan %50'yi nasıl koruyalım?

- GEÇ KALMAYALIM, İLETİŞİM..
- DOĞRU DOZDA DOĞRU SÜREDE..
- TEDAVİ SÜRELERİNE UYUM..
- KAYNAK KONTROLÜ



What do you see?
By shifting perspective you might see an old woman or a young woman.

Kalan %50'yi nasıl koruyalım?

OLMAZSA OLMAZZZ

Dirençli Gram (-) Bakteri Enfeksiyonlarının Tedavisinde Zavicefta'nın Yeri..

En güzel yerlerden biri…..

Doğum Tarihi, Cinsiyeti, Yaşı : 22.11.1982 / Kadın / 37 YIL
Protokol / Dosya / İşlem No : S16651353-1 / 5720861 / 23047528
Rapor Numarası : **651698.1062.23047528.2023**

Ciprofloxacin	DİRENÇLİ	>=4.0
Gentamicin	DİRENÇLİ	>=16.0
Meropenem.	DİRENÇLİ	>=16.0
Piperacillin/Tazobactam	DİRENÇLİ	>=128.0
Ampicillin	DİRENÇLİ	>=32.0
Cefuroxime	DİRENÇLİ	>=64.0
Cefuroxime Axetil	DİRENÇLİ	>=64.0
Ceftriaxone	DİRENÇLİ	>=64.0
Amikacin	DİRENÇLİ	32.0
Nitrofurantoin	DİRENÇLİ	256.0
Trimethoprim/Sulfamethoxazole	DİRENÇLİ	>=320.0
Cefixime	DİRENÇLİ	>=4.0
Ertapenem	DİRENÇLİ	>=8.0
Amoxicilin/Clavulanic Asit 06	DİRENÇLİ	>=64.0

Açıklama AMA°KASA°N: KarAYA±laAYtA±rmalA± testler sA±rasA±nda direnA§li suAY bulunmadA±AYA±ndan veya vetersiz savÃ±da olduÃŸundan AST kartÃ±nÃ±n direnci tespit etme kabiliveti bilinmemektedir.

Açıklama BMX090

Tıbbi Laboratuvar Yorum : Kolistin : Duyarlı

Böbrek nakil alıcısında yandaki profil ile üriner enfeksiyonda anksiyete yaşamamaktır…


40th ANNIVERSARY
STAR WARS
RETURN OF THE JEDI
RETURNS TO THEATERS APRIL 28

Teşekkürler…..