Tartışmalı Oturum:

Toplum Kökenli Sepsiste Geniş Spektrumlu Antibiyotik Tedavisi: Gerekli !

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Acıbadem ÜTF Maslak Hastanesi, İstanbul

9.Türkiye EKMUD Bilimsel Platformu

22 Mayıs 2021, Online Kongre

Mortaliteye etki eden faktörler

Antimikrobiyal tedavinin uygunluğu ve zamanlaması

Neden geniş spektrumlu antibiyotik?

- Alternatif yaklaşımlar ve riskleri
- İzlem algoritması

Sepsis

Enfeksiyona konağın verdiği düzensiz yanıt sonucu ortaya çıkan hayatı tehdit eden organ yetmezliği

Erken tanı ve tedavi hayati önem taşımakta

Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016

Andrew Rhodes[1*], Laura E. Evans[2], Waleed Alhazzani[3], Mitchell M. Levy[4], Massimo Antonelli[5], Ricard Ferrer[6], Anand Kumar[7], Jonathan E. Sevransky[8], Charles L. Sprung[9], Mark E. Nunnally[2], Bram Rochwerg[3], Gordon D. Rubenfeld[10], Derek C. Angus[11], Djillali Annane[12], Richard J. Beale[13], Geoffrey J. Bellinghan[14], Gordon R. Bernard[15], Jean-Daniel Chiche[16], Craig Coopersmith[8], Daniel P. De Backer[17], Craig J. French[18], Seitaro Fujishima[19], Herwig Gerlach[20], Jorge Luis Hidalgo[21], Steven M. Hollenberg[22], Alan E. Jones[23], Dilip R. Karnad[24], Ruth M. Kleinpell[25], Younsuk Koh[26], Thiago Costa Lisboa[27], Flavia R. Machado[28], John J. Marini[29], John C. Marshall[30], John E. Mazuski[31], Lauralyn A. McIntyre[32], Anthony S. McLean[33], Sangeeta Mehta[34], Rui P. Moreno[35], John Myburgh[36], Paolo Navalesi[37], Osamu Nishida[38], Tiffany M. Osborn[31], Anders Perner[39], Colleen M. Plunkett[25], Marco Ranieri[40], Christa A. Schorr[22], Maureen A. Seckel[41], Christopher W. Seymour[42], Lisa Shieh[43], Khalid A. Shukri[44], Steven Q. Simpson[45], Mervyn Singer[46], B. Taylor Thompson[47], Sean R. Townsend[48], Thomas Van der Poll[49], Jean-Louis Vincent[50], W. Joost Wiersinga[49], Janice L. Zimmerman[51] and R. Phillip Dellinger[22]

Sepsis mortalitesi

- Mortalite oranlarında yıllar içinde gerileme
  - Günümüzde mortalite >%10
    - Şok varsa >%40
- WHO – 2017
  - 48.9 milyon vaka
  - 11 milyon sepsis ilişkili ölüm
    - tüm ölüm nedenlerinin %20'si

Erken dx

- Sepsis için risk faktörlerinin belirlenmesi önemli.
  - YBÜ yatışı
  - Bakteremi
  - İleri yaş (>65 yaş)
  - İmmunsupresyon
  - DM ve obesite
  - Kanser
  - TK pnömoni
  - Önceden hospitalizasyon

Doğru dx önemli

- Acil ünitesinde sepsis tanısı konanların %18'i
- Sepsis ön tanısıyla YBÜ'ne alınanların %13'ü enfeksiyon değil

Heffner AC, et al. Clin Infect Dis 2010;50:814-20.
Klein Klouwenberg PM, et al. Crit Care 2015;19:319.

AB gecikmesi-mortalite

- Uygun antibiyotiğin gecikmesi mortalitiyi arttırır.
- Antibiyotik başlamadan önceki her bir saatte sepsisden septik şoka %8 ilerleme riski var

Empiric Antibiotic Treatment Reduces Mortality in Severe Sepsis and Septic Shock From the First Hour: Results From a Guideline-Based Performance Improvement Program*

Ricard Ferrer, MD, PhD[1]; Ignacio Martin-Loeches, MD, PhD[2]; Gary Phillips, MAS[3]; Tiffany M. Osborn, MD, MPH[4]; Sean Townsend, MD[5]; R. Phillip Dellinger, MD, FCCP, FCCM[6]; Antonio Artigas, MD, PhD[2]; Christa Schorr, RN, MSN[3]; Mitchell M. Levy, MD, FCCP, FCCM[7]

SSC veritabanı üzerinde (Avrupa, ABD ve Güney Amerika'da 165 YBÜ) 18,000'den fazla sepsis and septik şoklu hastanın retrospektif analizinde ilk AB uygulamasındaki gecikme hastanedeki mortalite artışı ile ilişkili;

AB başlanmasındaki her bir saatlik gecikme mortalitede de lineer artışa yol açmakta

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (http://journals.lww.com/ccmjournal).

Initial funding for the Surviving Sepsis Campaign (from 2002 to 2006) was through unrestricted educational grants from Eli Lilly, Edwards Lifesciences, Philips Medical Systems, and the Coalition for Critical Care Excellence (Society of Critical Care Medicine). There was no involvement by the sponsors in the development, data analysis, or manuscript preparation of the current study. No additional funding has been received since that time or during the analysis and development of the current study and manuscript.

Dr. Ferrer served as board member for Laboratorios Ferrer and lectured for Merck, Sharp and Dohme, and Pfizer. His institution received grant

Design: Retrospective analysis of a large dataset collected prospectively for the Surviving Sepsis Campaign.

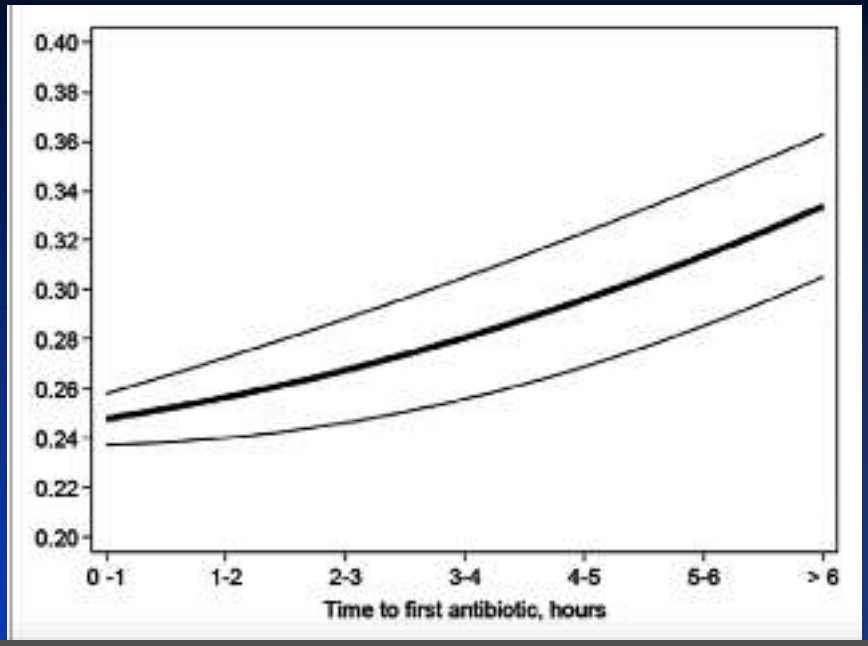
Setting: One hundred sixty-five ICUs in Europe, the United States, and South America.

Patients: A total of 28,150 patients with severe sepsis and septic shock, from January 2005 through February 2010, were evaluated.

Interventions: Antibiotic administration and hospital mortality.

Measurements and Main Results: A total of 17,990 patients received antibiotics after sepsis identification and were included in the analysis. In-hospital mortality was 29.7% for the cohort as a whole. There was a statically significant increase in the probability

Crit Care Med. 2014;42(8):1749.



Time to Antibiotics (Hr)	OR[a]	95% CI	*p*	Probability of Mortality (%)[b]	95% CI
0–1[c]	1.00			24.6	23.2–26.0
1–2	1.07	0.97–1.18	0.165	25.9	24.5–27.2
2–3	1.14	1.02–1.26	0.021	27.0	25.3–28.7
3–4	1.19	1.04–1.35	0.009	27.9	25.6–30.1
4–5	1.24	1.06–1.45	0.006	28.8	25.9–31.7
5–6	1.47	1.22–1.76	< 0.001	32.3	28.5–36.2
> 6	1.52	1.36–1.70	< 0.001	33.1	30.9–35.3

Crit Care Med. 2014;42(8):1749.

Time to Treatment and Mortality during Mandated Emergency Care for Sepsis

Christopher W. Seymour, M.D., Foster Gesten, M.D., Hallie C. Prescott, M.D., Marcus E. Friedrich, M.D., Theodore J. Iwashyna, M.D., Ph.D., Gary S. Phillips, M.A.S., Stanley Lemeshow, Ph.D., Tiffany Osborn, M.D., M.P.H., Kathleen M. Terry, Ph.D., and Mitchell M. Levy, M.D.

ABSTRACT

BACKGROUND

In 2013, New York began requiring hospitals to follow protocols for the early identification and treatment of sepsis. However, there is controversy about whether more rapid treatment of sepsis improves outcomes in patients.

METHODS

We studied data from patients with sepsis and septic shock that were reported to the New York State Department of Health from April 1, 2014, to June 30, 2016. Patients had a sepsis protocol initiated within 6 hours after arrival in the emergency department and had all items in a 3-hour bundle of care for patients with sepsis (i.e., blood cultures, broad-spectrum antibiotic agents, and lactate measurement) completed within 12 hours. Multilevel models were used to assess the associations between the time until completion of the 3-hour bundle and risk-adjusted mortality. We also examined the times to the administration of antibiotics and to the completion of an initial bolus of intravenous fluid.

RESULTS

Among 49,331 patients at 149 hospitals, 40,696 (82.5%) had the 3-hour bundle completed within 3 hours. The median time to completion of the 3-hour bundle was 1.30 hours (interquartile range, 0.65 to 2.35), the median time to the administration of antibiotics was 0.95 hours (interquartile range, 0.35 to 1.95), and the median time to completion of the fluid bolus was 2.56 hours (interquartile range, 1.33 to 4.20). Among patients who had the 3-hour bundle completed within 12 hours, a longer time to the completion of the bundle was associated with higher risk-adjusted in-hospital mortality (odds ratio, 1.04 per hour; 95% confidence interval [CI], 1.02 to 1.05; P<0.001), as was a longer time to the administration of antibiotics (odds ratio, 1.04 per hour; 95% CI, 1.03 to 1.06; P<0.001) but not a longer time to the completion of a bolus of intravenous fluids (odds ratio, 1.01 per hour; 95% CI, 0.99 to 1.02; P=0.21).

CONCLUSIONS

More rapid completion of a 3-hour bundle of sepsis care and rapid administration of antibiotics, but not rapid completion of an initial bolus of intravenous fluids, were associated with lower risk-adjusted in-hospital mortality. (Funded by the National Institutes of Health and others.)

From the Departments of Critical Care Medicine and Emergency Medicine, University of Pittsburgh School of Medicine, and the Clinical Research, Investigation, and Systems Modeling of Acute Illness (CRISMA) Center — both in Pittsburgh (C.W.S.); the New York State Department of Health, Albany (F.G., M.E.F.), and IPRO, Lake Success (G.S.P., K.M.T.) — both in New York; the University of Michigan and the Veterans Affairs Center for Clinical Management Research — both in Ann Arbor (H.C.P., T.J.I.); the Division of Biostatistics, Ohio State University College of Public Health, Columbus (S.L.); Washington University, St. Louis (T.O.); and the Warren Albert Medical School at Brown University, Providence, RI (M.M.L.). Address reprint requests to Dr. Seymour at the Departments of Critical Care Medicine and Emergency Medicine, University of Pittsburgh School of Medicine, 3550 Terrace St., Scaife Hall, Rm. 638, Pittsburgh, PA 15261, or at seymourcw@upmc.edu.

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NEJM 2017;376:2235-44.

The Timing of Early Antibiotics and Hospital Mortality in Sepsis

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Abstract

Rationale: Prior sepsis studies evaluating antibiotic timing have shown mixed results.

Objectives: To evaluate the association between antibiotic timing and mortality among patients with sepsis receiving antibiotics within 6 hours of emergency department registration.

Methods: Retrospective study of 35,000 randomly selected inpatients with sepsis treated at 21 emergency departments between 2010 and 2013 in Northern California. The primary exposure was antibiotics given within 6 hours of emergency department registration. The primary outcome was adjusted in-hospital mortality. We used detailed physiologic data to quantify severity of illness within 1 hour of registration and logistic regression to estimate the odds of hospital mortality based on antibiotic timing and patient factors.

Measurements and Main Results: The median time to antibiotic administration was 2.1 hours (interquartile range, 1.4–3.1 h). The adjusted odds ratio for hospital mortality based on each hour of delay in antibiotics after registration was 1.09 (95% confidence interval [CI], 1.05–1.13) for each elapsed hour between registration and antibiotic administration. The increase in absolute mortality associated with an hour's delay in antibiotic administration was 0.3% (95% CI, 0.01–0.6%; $P = 0.04$) for sepsis, 0.4% (95% CI, 0.1–0.8%; $P = 0.02$) for severe sepsis, and 1.8% (95% CI, 0.8–3.0%; $P = 0.001$) for shock.

Conclusions: In a large, contemporary, and multicenter sample of patients with sepsis in the emergency department, hourly delays in antibiotic administration were associated with increased odds of hospital mortality even among patients who received antibiotics within 6 hours. The odds increased within each sepsis severity strata, and the increased odds of mortality were greatest in septic shock.

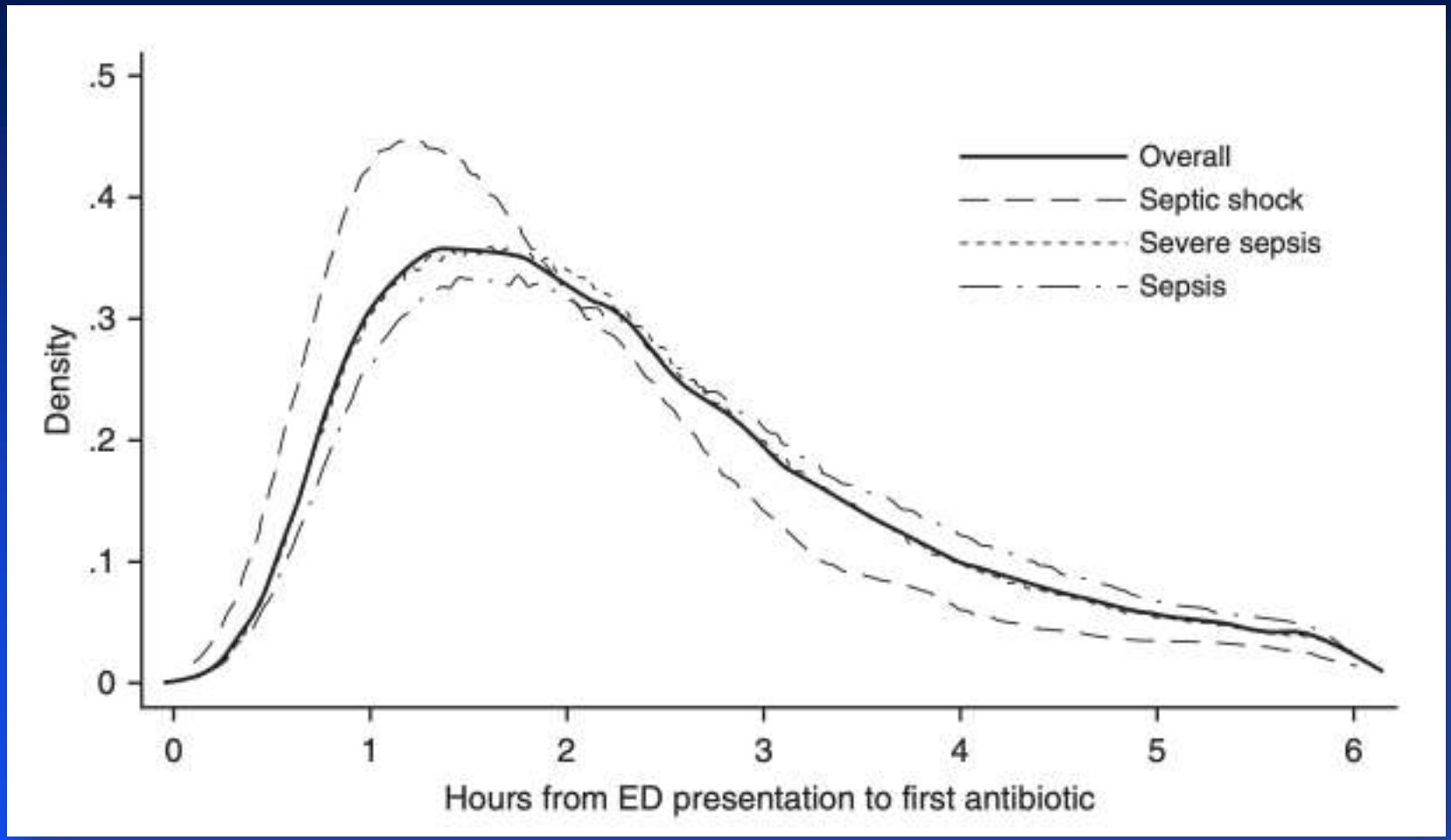
Keywords: sepsis; septic shock; antibacterial agents

At a Glance Commentary

Scientific Knowledge on the Subject: Prior work evaluating antibiotic timing in sepsis has shown mixed results and focused on more severely ill patients, often including patients with long delays in antibiotic administration. This has resulted in clinical equipoise regarding timing thresholds for antibiotic administration in sepsis.

What This Study Adds to the Field: We evaluated 35,000 patients treated within a contemporary multicenter sepsis quality improvement program using granular data including vital signs, laboratory values, and severity of illness indices. Although increased time to antibiotics after emergency department presentation was associated with increased mortality in all sepsis severity groups, the increase in the odds of mortality was greatest in septic shock.

Am J Respir Crit Care Med 2017



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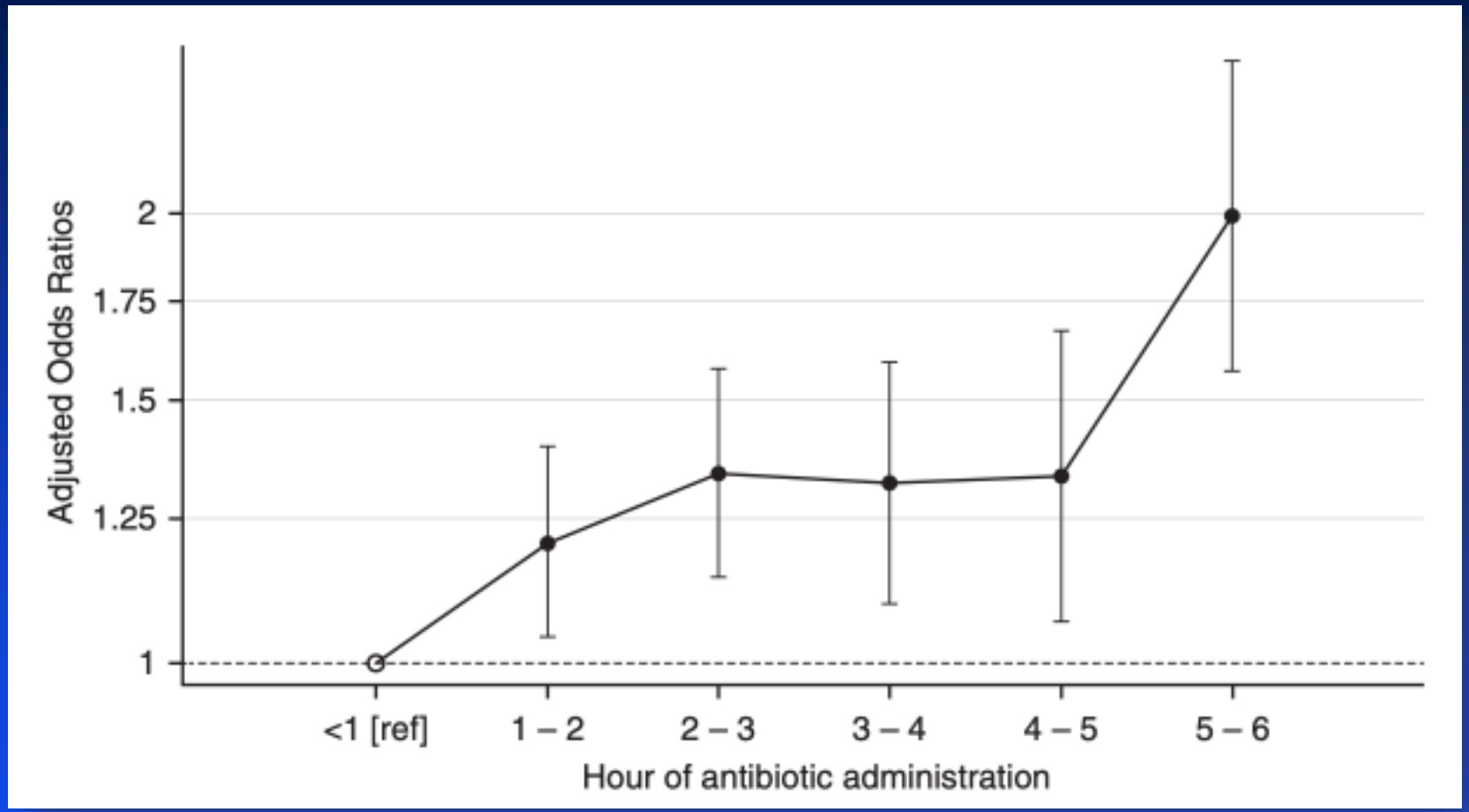


SG-05/2021

Am J Respir Crit Care Med 2017

Increased Time to Initial Antimicrobial Administration Is Associated With Progression to Septic Shock in Severe Sepsis Patients

Bristol B. Whiles, BS[1]; Amanda S. Deis, MS[1]; Steven Q. Simpson, MD[2]

Ciddi sepsisli 3929 hasta, retrospektif kohort

Mortalite %12.8
Septik şoka ilerleme %25

Medyan AB başlama süresi 3.77 saat

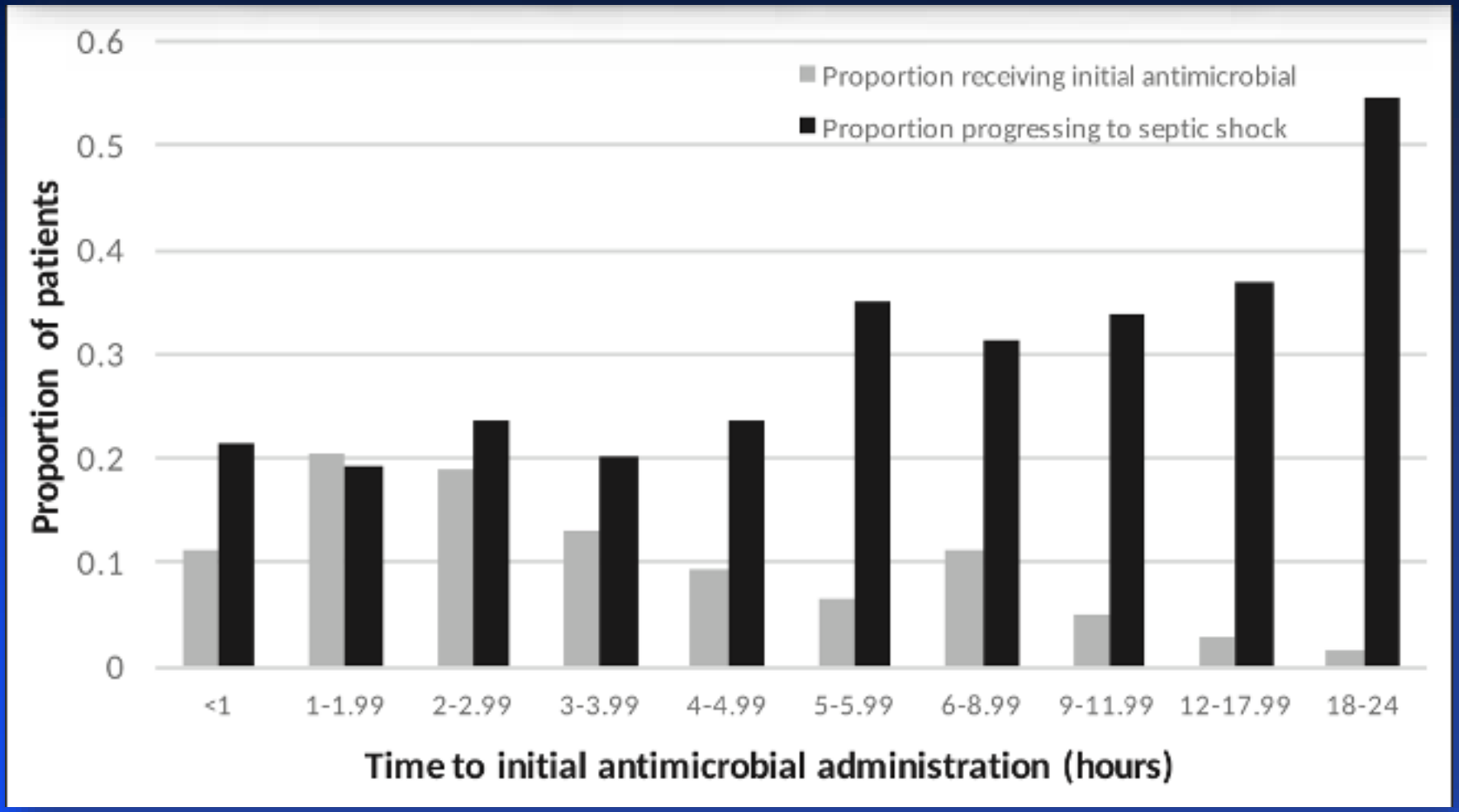
Crit Care Med 2017; 45:623–629

TABLE 2. Most Common Infection International Classification of Diseases, 9th Edition Diagnosis Codes by Code Group for Patients Without Shock on Presentation to the Emergency Department

Infection Site/Type	No. of Patients	Percentage
Infectious and parasitic (including septicemia)	3,921	99.8
Respiratory and lung	1,500	38.2
Genitourinary	1,250	31.8
Intra-abdominal	293	7.5
Bone/joint	151	3.9
Surgical site, device, implant, graft, or central venous catheter	146	3.7
Central nervous system	67	1.7
Cardiovascular	57	1.5
Skin and soft tissue	36	0.9
Bacteremia	12	0.3

Crit Care Med 2017; 45:623–629

Antibiyotik başlamadan önceki her bir saatte sepsisden septik şoka %8 ilerleme riski



Crit Care Med 2017; 45:623–629

Patient and Organizational Factors Associated With Delays in Antimicrobial Therapy for Septic Shock*

Andre C. K. B. Amaral, MD[1]; Robert A. Fowler, MDCM, MS(Epi), FRCPC[1]; Ruxandra Pinto, PhD[1]; Gordon D. Rubenfeld, MD, MSc[1]; Paul Ellis, MD[2]; Brian Bookatz, MD[3]; John C. Marshall, MD, FRCSC, FACS[4]; Greg Martinka, MD[5]; Sean Keenan, MD[6]; Denny Laporta, MD[7]; Daniel Roberts, MD[8]; Anand Kumar, MD[8]; and the Cooperative Antimicrobial Therapy of Septic Shock Database Research Group

Septik şoklu 6720 hasta, retrospektif kohort

İleri yaş, komorbidite varlığı, hipotansiyon öncesi hastanede kalış süresi, pnömoni tanısı AB tedavisi başlama süresini uzatmış.

Toplumdan kazanılmış enfeksiyonlarda, acilden başvurularda ve yüksek ateş varlığında AB daha erken başlanmış.

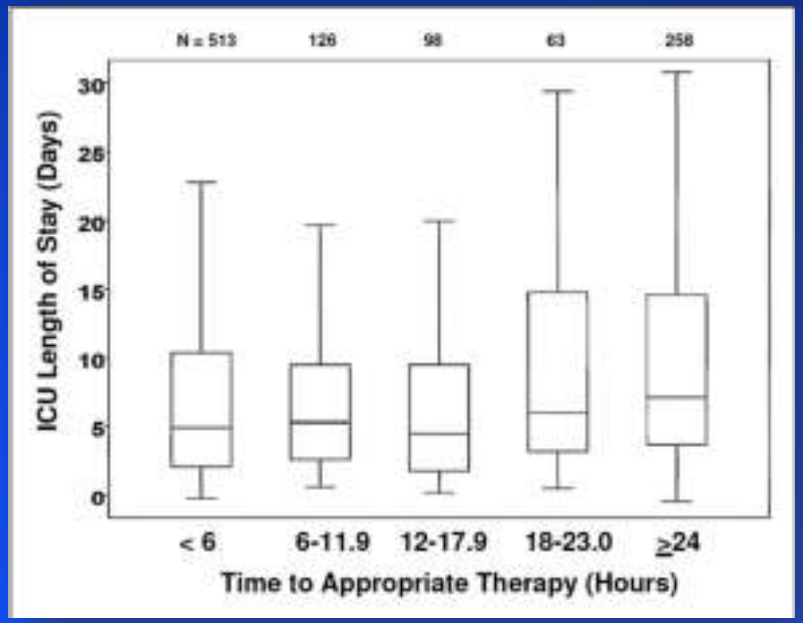
Crit Care Med 2016;44:2145-2153.

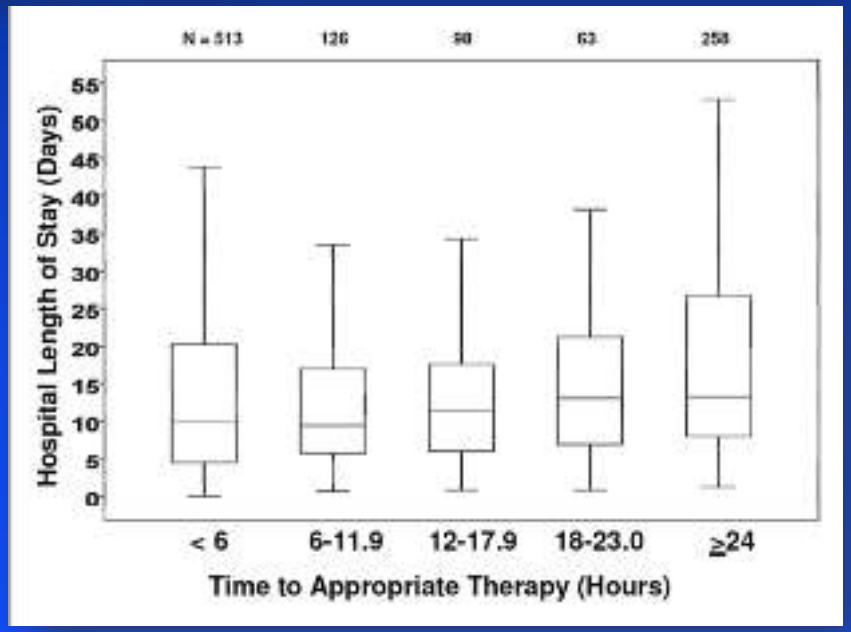
Time to Appropriate Antibiotic Therapy Is an Independent Determinant of Postinfection ICU and Hospital Lengths of Stay in Patients With Sepsis*

David Zhang, MD[1]; Scott T. Micek, PharmD[2]; Marin H. Kollef, MD[3]

Ciddi sepsis veya septik şoklu 1058 hasta, retrospektif kohort

Medyan AB başlama süresi (kan kültürü alınmasından itibaren) 6.7 saat





Crit Care Med 2015; 43:2133–2140

Initiation of Inappropriate Antimicrobial Therapy Results in a Fivefold Reduction of Survival in Human Septic Shock

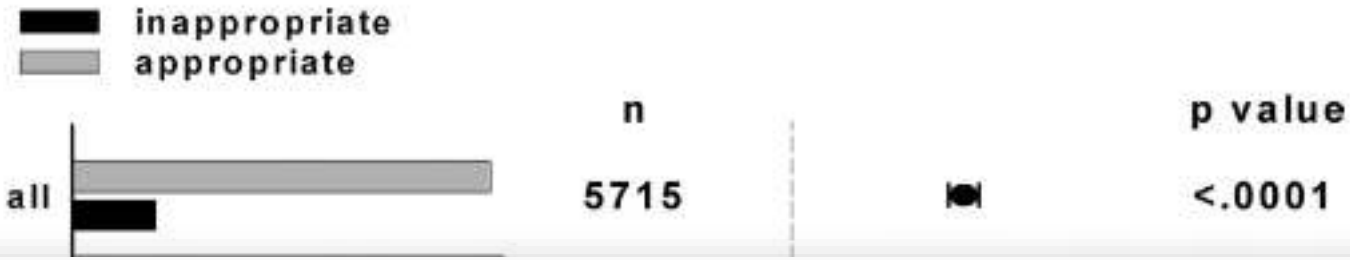
*Anand Kumar, MD; Paul Ellis, MD; Yaseen Arabi, MD, FCCP; Dan Roberts, MD; Bruce Light, MD; Joseph E. Parrillo, MD, FCCP; Peter Dodek, MD; Gordon Wood, MD; Aseem Kumar, PhD; David Simon, MD; Cheryl Peters, RN; Muhammad Ahsan, MD; Dan Chateau, PhD; and the Cooperative Antimicrobial Therapy of Septic Shock Database Research Group**

Septik şoklu 5715 hasta, retrospektif kohort

Uygun AB verilenler %80.1

Genel ölüm oranı %43.7

CHEST 2009; 136:1237–1248



Uygun AB verilenlerde hastanede sağkalım %52 iken uygunsuz AB verilenlerde %10.3 (odds ratio [OR], 9.45; 95% CI, 7.74 to 11.54; p<0.0001).

Uygunsuz AB kullanımı ile;

pnömokokal enfeksiyonda 2.3 kat,

primer bakteremide 17.6 kat mortalitede artış

survival (%)

odds ratio

FIGURE 2. Impact of antimicrobial appropriateness on survival in major epidemiologic subgroups. See the legend of Figure 1 for abbreviations not used in the text.

CHEST 2009; 136:1237–1248

Monotherapy versus β-Lactam–Aminoglycoside Combination Treatment for Gram-Negative Bacteremia: a Prospective, Observational Study

LEONARD LEIBOVICI,[1]* MICHAL PAUL, ODED POZNANSKI, MOSHE DRUCKER, ZMIRA SAMRA, HANNA KONIGSBERGER, AND SILVIO D. PITLIK

Prospektif kohort çalışma, 2124 GN bakteremik hasta

%32'sinde uygunsuz empirik antibiyotik seçimi

Uygun AB verilenlere kıyasla uygunsuz AB verilenlerde mortalite daha yüksek (%18'e karşılık %34, p=0.0001)

AB tedavisi dışında mortalite üzerine etki eden diğer risk faktörlerine göre hastalar gruplandırıldığında nötropenik hastalar dışında kombinasyon tedavisi üstün değil

AAC 1997;41:1127-1133.

Empiric Combination Antibiotic Therapy Is Associated with Improved Outcome against Sepsis Due to Gram-Negative Bacteria: a Retrospective Analysis[▽]

Scott T. Micek,[1] Emily C. Welch,[1] Junaid Khan,[2] Mubashir Pervez,[2] Joshua A. Doherty,[3] Richard M. Reichley,[3] and Marin H. Kollef[2]*

Retrospektif kohort çalışma, GN bakteremi ilişkili 760 ciddi sepsis ve septik şok

%31.3'ünde uygunsuz empirik antibiyotik seçimi

Uygun AB verilenlere kıyasla uygunsuz AB verilenlerde mortalite daha yüksek

(%36.4'e karşılık %51.7, p<0.001)

Kombinasyon tedavisi alanlarda uygunluk daha fazla

AAC 2010;54:1742-1748

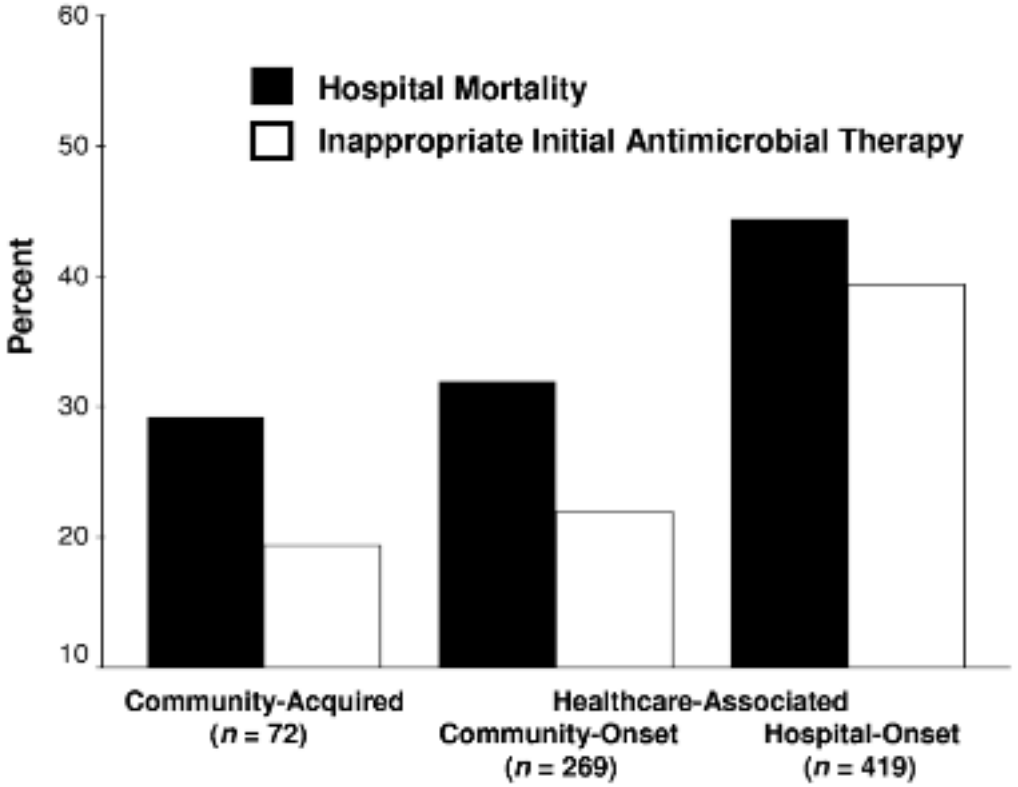


FIG. 2. Hospital mortality and inappropriate initial antimicrobial therapy (IIAT) according to classification of infection source. ($P < 0.001$ for differences in hospital mortality and IIAT).

Gram-negative bacterium	Total no. of isolates
Achromobacter spp.	12
Acinetobacter spp.	63
Burkholderia spp.	2
Citrobacter spp.	12
Enterobacter spp.	76
Escherichia coli	232
Klebsiella spp.	188
Morganella morganii	9
Proteus spp.	37
Providencia spp.	4
Pseudomonas aeruginosa	132
Salmonella spp.	6
Serratia marcescens	30
Stenotrophomonas maltophilia	20
Cumulative	823

AAC 2010;54:1742-1748

Bacteria	Appropriate antibiotic therapy (n = 522)		Inappropriate antibiotic therapy (n = 238)		P^a
	No. of subjects (%)	% Hospital mortality	No. of subjects (%)	% Hospital mortality	
Enterobacteriaceae					
Citrobacter freundii	8 (1.5)	12.5	2 (0.8)	50.0	0.733 (0.378)
Other *Citrobacter* species	1 (0.2)	0.0	1 (0.4)	0.0	0.529 (—)
Enterobacter cloacae	40 (7.7)	32.5	16 (6.7)	37.5	0.765 (0.721)
Enterobacter aerogenes	10 (1.9)	10.0	4 (1.7)	50.0	1.0 (0.176)
Other *Enterobacter* species	3 (0.6)	0.0	3 (1.3)	66.7	0.384 (0.400)
Escherichia coli	188 (36.0)	31.9	37 (15.5)	29.7	<0.001 (0.794)
ESBL *Escherichia coli*	3 (0.6)	66.7	4 (1.7)	25.0	0.214 (0.486)
Klebsiella oxytoca	10 (1.9)	30.0	3 (1.3)	66.7	0.764 (0.510)
Klebsiella pneumoniae	129 (24.7)	36.4	30 (12.6)	50.0	<0.001 (0.170)
ESBL *Klebsiella* species	5 (1.0)	60.0	11 (4.6)	45.5	0.002 (1.0)
Morganella morganii	9 (1.7)	55.6	0 (0)	0.0	0.064 (—)
Proteus mirabilis	30 (5.7)	40.0	7 (2.9)	42.9	0.104 (1.0)
Providencia species	4 (0.8)	0.0	0 (0)	0.0	0.315 (—)
Salmonella species	2 (0.4)	0.0	4 (1.7)	0.0	0.081 (—)
Serratia marcescens	16 (3.1)	37.5	14 (5.9)	28.6	0.072 (0.709)
Nonfermenting Gram-negative rods					
Achromobacter species	3 (0.6)	100.0	9 (3.8)	77.8	0.062 (1.0)
Acinetobacter species	19 (3.6)	26.3	44 (18.5)	61.4	<0.001 (0.011)
Burkholderia species	1 (0.2)	0.0	1 (0.4)	0.0	0.529 (—)
Pseudomonas aeruginosa	91 (17.4)	47.3	41 (17.2)	68.3	1.0 (0.025)
Other *Pseudomonas* species	0 (0)	0.0	2 (0.8)	0.0	0.098 (—)
Stenotrophomonas maltophilia	4 (0.8)	0.0	16 (6.7)	87.5	<0.001 (0.003)

AAC 2010;54:1742-1748

Outcomes in severe sepsis and patients with septic shock: Pathogen species and infection sites are not associated with mortality*

Jean-Ralph Zahar, MD; Jean-Francois Timsit, MD, PhD; Maïté Garrouste-Orgeas, MD; Adrien Français, MG; Aurélien Vesim, MG; Adrien Descorps-Declere, MD; Yohann Dubois, MD; Bertrand Souweine, MD; Hakim Haouache, MD; Dany Goldgran-Toledano, MD; Bernard Allaouchiche, MD; Elie Azoulay, MD, PhD; Christophe Adrie, MD

Prospektif, 10 yıllık gözlemsel çalışma

1562 toplum kaynaklı, 1432 hastane kaynaklı, 1012 YB kaynaklı ciddi sepsis olgusu

Etken organizma, çoklu ilaç direnci, enfeksiyon bölgesi, bakteremi varlığı ile mortalite arasında ilişki yok

Erken uygun AB başlanması sağkalımla ilişkili

Crit Care Med 2011 Vol. 39, No. 8

Impact of previous antibiotic therapy on outcome of Gram-negative severe sepsis*

Michael T. Johnson, PharmD; Richard Reichley, PharmD; Joan Hoppe-Bauer, BA, BS, MT; W. Michael Dunne, PhD; Scott Micek, PharmD; Marin Kollef, MD

Retrospektif kohort çalışma

GN bakteremiye bağlı sepsis ve septik şoku olan 754 hasta

***E.Coli* (%30.8), *K.pneumoniae* (%23.2), *P.aeruginosa* (%17.6)**

Son 3 ay içinde AB kullanımı olanlarda (%41.1);

uygunsuz AB kullanımı %45.4 (%21.2'ye karşılık)

hastanede mortalite %51.3 (%34'e karşılık)

AB kullanım öyküsü dışında hastane mortalitesi ile ilişkili diğer değişkenler;

vazopressor kullanımı, P.aeruginosa enfeksiyonu, organ yetmezliği sayısı

Crit Care Med 2011; 39:1859 –1865

“The Surviving Sepsis Campaign”

- mümkün olduğunca hemen, özellikle ilk bir saatte antimikrobiyal başlanmasını önermekte
- Güncel rehberler orta düzey kanıtla güçlü öneri şeklinde ilk bir saatte geniş spektrumlu antibiyotik başlanmasını önermektedir.
  - Ancak bu yaklaşım antibiyotiklere bağlı istenmeyen etkileri de beraberinde getirmektedir.

SPECIAL EDITORIAL

The Surviving Sepsis Campaign Bundle: 2018 update

Mitchell M. Levy[1*], Laura E. Evans[2] and Andrew Rhodes[3]

- Measure lactate level. Remeasure if initial lactate is >2 mmol/L.
- Obtain blood cultures prior to administration of antibiotics.
- Administer broad-spectrum antibiotics.
- Begin rapid administration of 30ml/kg crystalloid for hypotension or lactate ≥4 mmol/L.
- Apply vasopressors if patient is hypotensive during or after fluid resuscitation to maintain MAP ≥65 mm Hg.

**"Time zero" or "time of presentation" is defined as the time of triage in the Emergency Department or, if presenting from another care venue, from the earliest chart annotation consistent with all elements of sepsis (formerly severe sepsis) or septic shock ascertained through chart review.*

Fig. 1 Hour-1 Surviving Sepsis Campaign Bundle of Care

Intensive Care Med (2018) 44:925–928

Table 1 Bundle elements with strength of recommendations and under-pinning quality of evidence [12, 13]

Bundle element	Grade of recommendation and level of evidence
Measure lactate level. Re-measure if initial lactate is > 2 mmol/L	Weak recommendation, low quality of evidence
Obtain blood cultures prior to administration of antibiotics	Best practice statement
Administer broad-spectrum antibiotics	Strong recommendation, moderate quality of evidence
Rapidly administer 30 ml/kg crystalloid for hypotension or lactate ≥ 4 mmol/L	Strong recommendation, low quality of evidence
Apply vasopressors if patient is hypotensive during or after fluid resuscitation to maintain MAP ≥ 65 mm Hg	Strong recommendation, moderate quality of evidence

Intensive Care Med (2018) 44:925–928

GSAB nedir?

- Geniş spektrumlu antibiyotik tedavisi olası patojenlerin tamamını kapsayacak şekilde bir veya daha fazla antimikrobiyalin verilmesini kapsamakta
- Ancak bu yaklaşım tüm hastalara aynı antibiyotik kombinasyonlarının verilmesi değil !!!
- en potansiyel patojenleri kapsayacak şekilde düşünülmüş daha odaklı antimikrobiyal seçimi anlamına gelir.
  - Hastaya ait faktörler,
  - öngörülen etken patojen ve
  - lokal mikrobiyal direnç paternleri göz önüne alınmalıdır.
  - Özellikle çoklu ilaca dirençli organizma geçmişi olan kişilerde önemlidir.

Hastaya ait özellikler

- Empirik AB tedavisinin seçimi hastanın öyküsü, klinik durumu ve lokal epidemiyolojik faktörlere bağlıdır.
- Enfeksiyon odağı,
- Eşlik eden komorbid hastalıklar,
- Kronik organ yetmezlikleri,
- Kullandığı ilaçlar,
- Kalıcı kateter, implant, cihazlar,
- İmmunsupresyon,
- Spesifik patojenlerle bilinen geçmiş enfeksiyon veya kolonizasyon,
- Son 3 ay içindeki kullanılan antibiyotikler,
- Enfeksiyonun geliştiği lokasyon (toplum, bakım evi, hastane,..),
- Lokal patojen prevalansı ve bu patojenlerin duyarlılık paternleri

Gram-negative bacteraemia; a multi-centre prospective evaluation of empiric antibiotic therapy and outcome in English acute hospitals

J. M. Fitzpatrick[1], J. S. Biswas[2], J. D. Edgeworth[2], J. Islam[3], N. Jenkins[4], R. Judge[5], A. J. Lavery[6], M. Melzer[7], S. Morris-Jones[6], E. E. Nsutebu[8], J. Peters[1], D. G. Pillay[4], E. Pink[7], J. R. Price[9], M. Scarborough[10], G. E. Thwaites[11], R. Tilley[5], A. S. Walker[10,11] and

Prospektif gözlemsel çalışma, 679 hasta, GN bakteremi, 10 hastane, Ekim 2013 - Mart 2014.

Bakteremilerin çoğunluğu toplumdan kazanılmış (70%);

En sık Escherichia coli (65%), Klebsiella spp (15%), Pseudomonas spp (7%).

Enfeksiyon odağı üriner sistem (51%), abdomen/bilier sistem (20%), alt solunum yolu (14%)

Kullanılan antibiyotikler co-amoxiclav (32%), piperacillin-tazobactam (30%), 34% kombinasyon tedavisi

Empirik tedavi 34% uygunsuz.

Mortalite 8% (7.gün) ve 15% (30.gün)

Bağımsız mortalite belirleyicileri ($p<0.05$); ileri yaş, komorbid hastalıklar, başvuruda hastalığın ciddiyeti, inflamatuar yanıt.

Uygunsuz empirik antibiotik tedavisi mortalite ile ilişkili değil.

Clin Microbiol Infect 2016; 22: 244–251

Epidemiology of sepsis in intensive care units in Turkey: a multicenter, point-prevalence study

Nur Baykara[1*], Halis Akalın[2], Mustafa Kemal Arslantaş[3], Volkan Hancı[4], Çiğdem Çağlayan[5], Ferda Kahveci[6], Kubilay Demirağ[7], Canan Baydemir[8], Necmettin Ünal[9] and Sepsis Study Group

Abstract

Background: The prevalence and mortality of sepsis are largely unknown in Turkey, a country with high antibiotic resistance. A national, multicenter, point-prevalence study was conducted to determine the prevalence, causative microorganisms, and outcome of sepsis in intensive care units (ICUs) in Turkey.

Methods: A total of 132 ICUs from 94 hospitals participated. All patients (aged > 18 years) present at the participating ICUs or admitted for any duration within a 24-h period (08:00 on January 27, 2016 to 08:00 on January 28, 2016) were included. The presence of systemic inflammatory response syndrome (SIRS), severe sepsis, and septic shock were assessed and documented based on the consensus criteria of the American College of Chest Physicians and Society of Critical Care Medicine (SEPSIS-I) in infected patients. Patients with septic shock were also assessed using the SEPSIS-III definitions. Data regarding demographics, illness severity, comorbidities, microbiology, therapies, length of stay, and outcomes (dead/alive during 30 days) were recorded.

Results: Of the 1499 patients included in the analysis, 237 (15.8%) had infection without SIRS, 163 (10.8%) had infection with SIRS, 260 (17.3%) had severe sepsis without shock, and 203 (13.5%) had septic shock. The mortality rates were higher in patients with severe sepsis (55.7%) and septic shock (70.4%) than those with infection alone (24.8%) and infection + SIRS (31.2%) ($p < 0.001$). According to SEPSIS-II, 101 (6.9%) patients had septic shock (mortality rate, 75.9%). The respiratory system (71.6%) was the most common site of infection, and *Acinetobacter* spp. (33.7%) were the most common isolated pathogen. Approximately, 74.9%, 39.1%, and 26.5% of *Acinetobacter*, *Klebsiella*, and *Pseudomonas* spp. isolates, respectively, were carbapenem-resistant, which was not associated with a higher mortality risk. Age, acute physiology and chronic health evaluation II score at ICU admission, sequential organ failure assessment score on study day, solid organ malignancy, presence of severe sepsis or shock, *Candida* spp. infection, renal replacement treatment, and a nurse-to-patient ratio of 1:1 (compared with a nurse-to-patient ratio of 1:2) were independent predictors of mortality in infected patients.

Conclusions: A high prevalence of sepsis and an unacceptably high mortality rate were observed in Turkish ICUs. Although the prevalence of carbapenem resistance was high in Turkish ICUs, it was not associated with a higher risk for mortality.

Trial registration: ClinicalTrials.gov ID: NCT03249246. Date: August 15, 2017. Retrospectively registered.

Keywords: Intensive care, Sepsis, Carbapenem resistance, Point prevalence, Turkey

Critical Care (2018) 22:93

Table 3 Origin and type of infection in infected patients

	All infected patients n = 863	Infection n = 237	Infection + SIRS n = 163	Severe sepsis without shock n = 260	Septic shock (SEPSIS I) n = 203	Septic shock[a] (SEPSIS-III) n = 104
Origin of infection, n (%)						
Community-acquired	285 (32.8)	85 (35.8)	52 (31.9)	86 (33)	62 (30.5)	30 (28.8)
Hospital-acquired	259 (30)	59 (24.8)	52 (31.9)	75 (28.8)	73 (35.9)	38 (36.5)
ICU-acquired	211 (24.4)	62 (26.1)	44 (26.9)	64 (24.6)	41 (20.1)	21 (20.1)
Unknown	108 (12.5)	31 (13.0)	15 (9.2)	35 (13.4)	27 (13.3)	15 (14.4)
Type of infection[b], n (%)						
Respiratory	618 (71.6)	158 (66.6)	118 (72.3)	188 (72.3)	154 (75.9)	85 (81.7)
Bloodstream	77 (8.9)	28 (11.8)	15 (9.2)	22 (8.5)	12 (5.9)	9 (8.6)
Renal/urinary	67 (7.8)	21 (8.8)	12 (7.4)	19 (7.3)	15 (7.3)	7 (6.7)
Catheter-related	56 (6.5)	17 (7.1)	8 (4.9)	18 (6.9)	13 (6.4)	6 (5.7)
Intra-abdominal	49 (5.6)	10 (4.2)	9 (5.5)	12 (4.6)	18 (8.8)	13 (12.5)
Surgical	32 (3.7)	6 (2.5)	5 (3.0)	9 (3.4)	12 (5.9)	3 (2.8)
Skin/soft tissue	24 (2.7)	6 (2.5)	8 (4.9)	10 (3.8)	0 (0)[*]	0 (0)
Others	22 (2.5)	2 (0.8)	6 (3.7)	9 (3.4)	5 (2.5)	3 (2.9)

Critical Care (2018) 22:93

Table 4 Distribution of microorganisms isolated from culture positive infected patients according to clinical condition

	All (n = 863)	Infection (n = 237)	Infection + SIRS (n = 163)	Severe sepsis without shock (n = 260)	Septic shock (n = 203)
Culture positive infected patients, n (%)	506 (58.6)	131(55.3)	86 (52.8)	154 (59.2)	135 (66.5)
Isolated microorganisms[a], n (%)	686(100)	161(100)	126(100)	213(100)	186(100)
Gram negative	540 (78.7)	124 (77)	99 (78.5)	162 (76)	155 (83.3)
Acinetobacter spp.	231 (33.7)	56 (34.7)	42 (33.3)	70 (32.8)	63 (33.9)
Carbapenem-resistant	173 (25.2)	37 (22.9)	32 (25.3)	51 (23.9)	53 (28.5)
Colistin-resistant	5 (0.7)	1 (0.6)	1 (0.8)	1(0.5)	2 (1.0)
Pseudomonas spp.	113 (16.4)	22 (13.6)	22 (17.4)	39 (18.3)	30 (16.1)
Carbapenem-resistant	30 (4.4)	6 (3.7)	8 (6.3)	10 (4.7)	6 (3.2)
Colistin-resistant	3 (0.4)	0 (0.0)	1 (0.8)	0 (0.0)	2 (1.0)
Klebsiella spp.	110 (16)	23 (14.2)	20 (15.8)	26 (12.2)	41 (22.0)
Carbapenem-resistant	43 (6.3)	10 (6.2)	8 (6.3)	7 (3.3)	18 (9.7)
Colistin-resistant	3 (0.4)	0 (0.0)	1 (0.8)	0 (0.0)	2 (1.0)
Escherichia coli	37 (5.4)	12 (7.4)	6 (4.7)	8 (3.7)	11 (5.9)
Serratia marcescens	12 (1.7)	3 (1.9)	2 (1.5)	6 (2.8)	1 (0.5)
Proteus spp.	10 (1.4)	3 (1.8)	0 (0)	6 (2.8)	1 (0.5)
Enterobacter spp.	8 (1.1)	2 (1.2)	0 (0)	4 (1.8)	2 (1.0)
Others	19 (2.7)	3 (1.8)	7 (5.5)	3 (1.4)	6 (3.2)
Gram positive	107 (15.5)	26 (16.1)	21 (16.6)	41 (19.2)	19 (10.2)
Staphylococcus aureus	61 (8.8)	16 (9.9)	13 (10.3)	20 (9.3)	12 (6.4)
MRSA	46 (6.7)	13 (8.0)	12 (9.5)	12 (5.6)	9 (4.8)
Enterococcus spp.	38 (5.5)	9 (5.6)	8 (6.3)	14 (6.5)	7 (3.7)
VRE	3 (0.4)	1 (0.6)	0 (0)	2 (0.9)	0 (0)
Others	8 (1.2)	1 (0.6)	0 (0)	7 (3.3)	0 (0)
Fungi	34 (4.9)				
Candida spp.	32 (4.7)	8 (4.9)	6 (4.7)	8 (3.7)	10 (5.4)
Aspergillus spp.	2 (0.3)	0 (0)	0 (0)	0 (0)	2 (1.0)
Virus	5 (0.7)				
H1N1	5 (0.7)	3 (1.9)	0 (0)	2 (0.9)	0 (0)

Critical Care (2018) 22:93

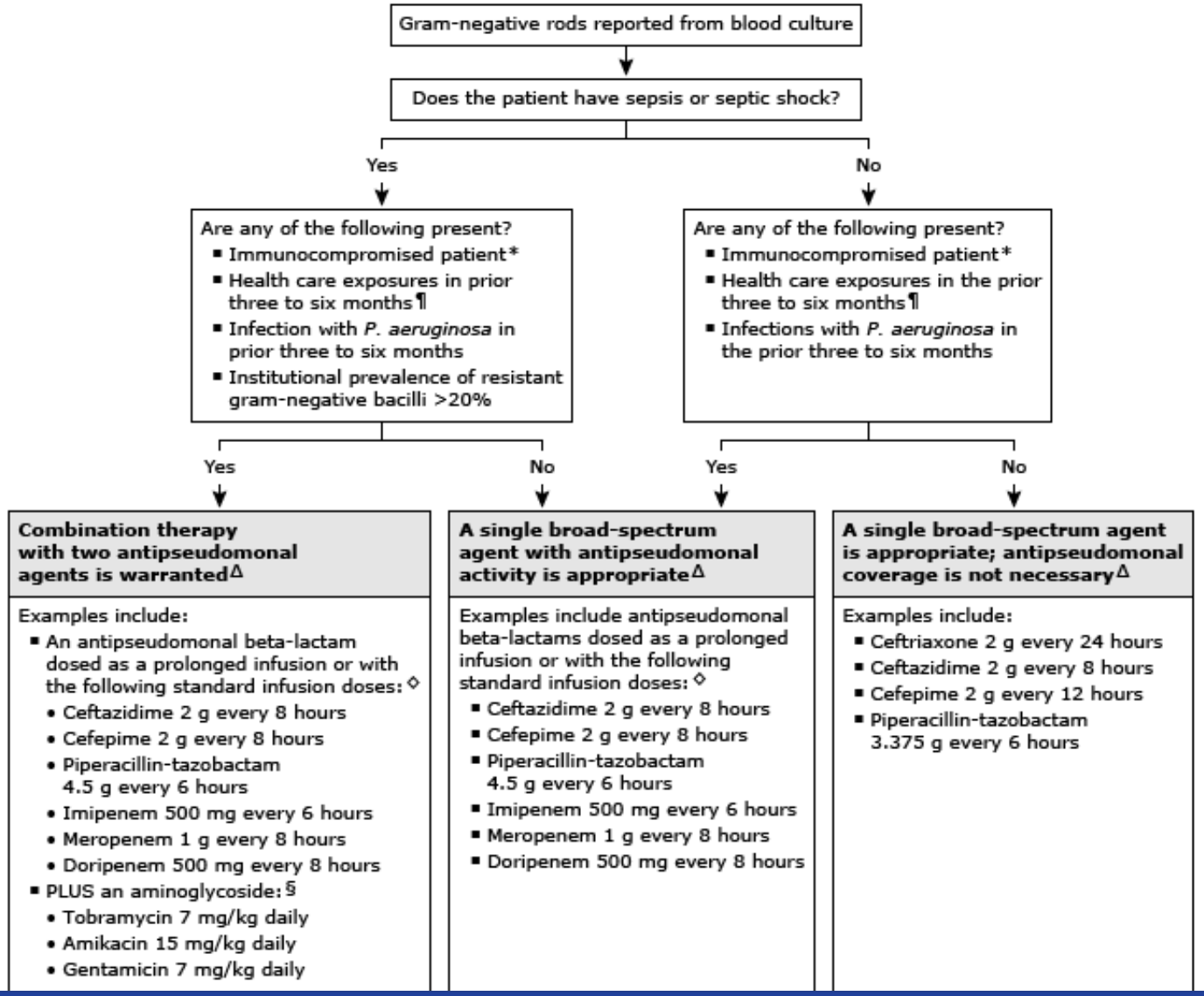
- **Sepsis ve septik şok için spesifik bir rejim önerisi mümkün değil**
- **Enfeksiyon odağına veya spesifik immun defekte dayanan potansiyel rejimler önerilebilir**

MDR risk faktörleri

- Uzun süreli hastane/bakım merkezinde kalma
- Öncesinde antimikrobiyal kullanımı
- Öncesinde hastane yatışı
- Öncesinde MDR organizma ile kolonizasyon veya enfeksiyon
- Ciddi sepsis veya septik şok

- **Ciddi sepsis ve septik şoklu hastaların çoğunda bir vaya daha fazla immunsupresyonu olduğunu düşünürsek başlangıç rejim SBİE patojenlerini kapsayacak şekilde geniş olmalı.**
  - **Karbapenem (meropenem, imipenem) (en sık)**
  - **Genişletilmiş spektrumlu penisilin/beta-laktamaz inhibitörü (piperacillin/tazobactam)**
  - **Üçüncü veya dördüncü jenerasyon sefalosproinler**

Algorithm for empiric antimicrobial selection for gram-negative bacillary bacteremia



Candida risk faktörleri

- Immunkompromize (nötropeni, KT, transplant, DM, KBH,,….)
- Uzun süreli IV kateterler (HD, SVK,..)
- TPN
- Yakın zamanda cerrahi girişim (öz.abdomen)
- Uzamış geniş spektrumlu AB kullanımı
- Uzamış hastane/YBÜ yatışı
- Yakın zamanda fungal enfeksiyon, çoklu kolonizasyon

- Enfeksiyon konsültasyonu
- Kısıtlama (başlangıç tx.de??)

Geniş spektrumlu AB devamı

- MDR artışı
- Fungal enfeksiyonlarda artış
- Cl.difficile
- Maliyet ve hastanede yatışda artış

Erken GSAB başlamaya alternatif;

- hastanın klinik kötüleşmesine kadar veya
- kültür sonuçlanıncaya kadar beklemek olabilir
- fakat klinik kötüleşmeyi beklemek mortaliteyi arttırır!
- Ayrıca, kültür sonuçlarını beklemek riskli olabilir çünkü sepsisli hastaların %28-89'unda etken patojen ortaya konamamakta

AB stewardship

- Yatan hastalarda uygunsuz antibiyotik kullanımı %40'a kadar çıkmakta
- Amaç; uygun AB arttırmak, gereksiz kullanımı azaltmak

Erken GSAB devamı nasıl olmalı??

- Başlangıçta geniş spektrumlu antibiyotik kullanılması günlerce geniş spektrumlu olarak devam edilmesi anlamına gelmemekte
- Kültür ve duyarlılık sonuçlarına veya 48-72.saatte hastanın klinik ve laboratuvar değerlerine göre spektrumu daraltmak (de-escalation)
  - (kültür alınması önemli)
- Hatta, enfeksiyon kanıtı ortaya konamazsa antimikrobiyallerin tamamen kesilmesi en uygun yaklaşım olacaktır.
- Böylece, istenmeyen etkiler ve antibiyotik direncinin yayılması önlenmiş olabilir.

ADE sayesinde

- MDR azalıyor
- C.diff azalıyor
- Maliyet düşüyor
- Yatış süresi kısalıyor

A Systematic Review of the Definitions, Determinants, and Clinical Outcomes of Antimicrobial De-escalation in the Intensive Care Unit

Alexis Tabah,[1,2,a] Menino Osbert Cotta,[1,2,3,a] Jose Garnacho-Montero,[4] Jeroen Schouten,[2] Jason A. Roberts,[1,2,3] Jeffrey Lipman,[1,2,4] Mark Tacey,[5] Jean-François Timsit,[6,7] Marc Leone,[8] Jean Ralph Zahar,[9] and Jan J. De Waele[10]; for the Working Group for Antimicrobial Use in the ICU

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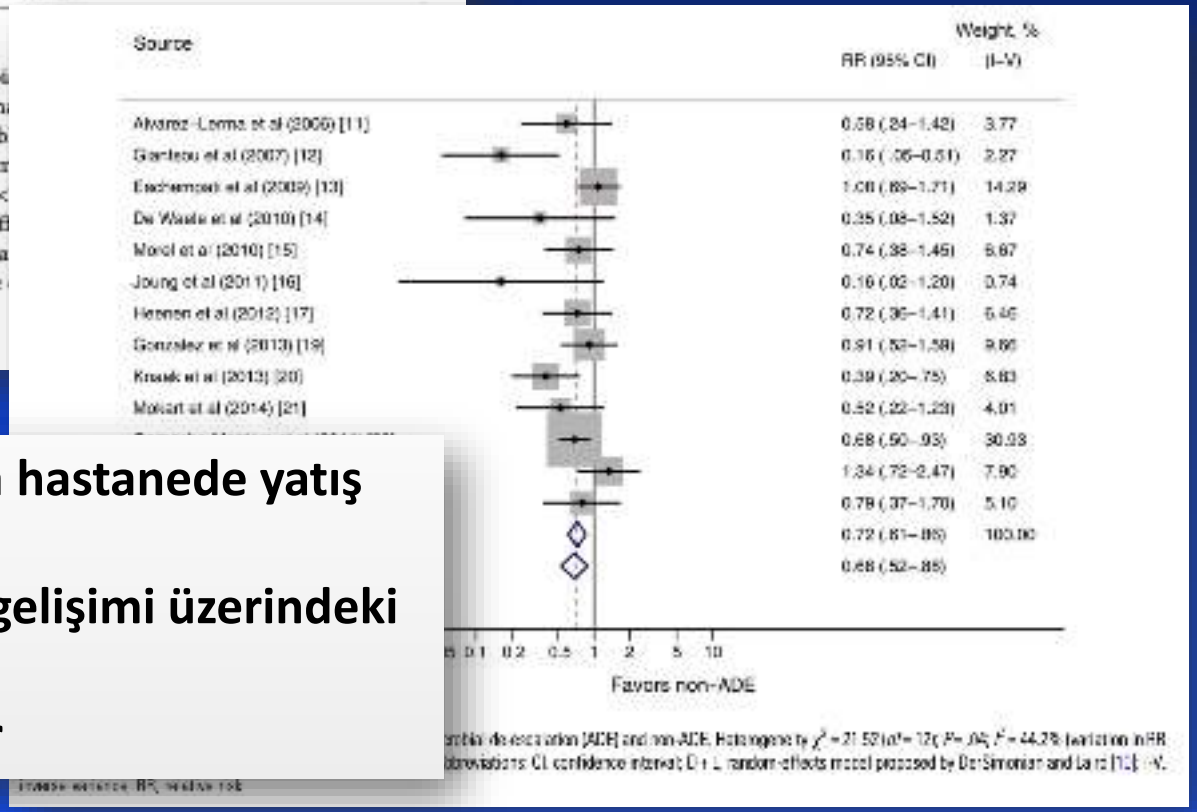
(See the Editorial Commentaries by Kollef and Micek on pages 1018–20.)

Antimicrobial de-escalation (ADE) is a strategy to reduce the spectrum of antimicrobi
terial resistance. We present a systematic review describing the definitions, determin
included 2 randomized controlled trials and 12 cohort studies. There was considerab
more frequently performed in patients with broad-spectrum and/or appropriate antim
agents were used ($P = .002$), and in the absence of multidrug-resistant pathogens ($P <$
severity scores were consistently associated with ADE ($P = .04$ to $<.001$). The pooled ef
risk, 0.68; 95% confidence interval, .52–.88). Because the determinants of ADE are ma
risk of treatment failure this effect on mortality cannot be retained as evidence. None
effect of ADE on antimicrobial resistance.

Keywords. de-escalation; stewardship; streamlining; resistance.



ADE total AM tedavi maliyetini veya hastanede yatış süresini azaltmamış.
ADE yaklaşımının bakteriyel direnç gelişimi üzerindeki etkileri yeterli araştırılmamış.
Mortalite üzerinde olumlu etkisi var

Clinical Infectious Diseases 2016;62(8):1009–17

Antibiotic de-escalation for bloodstream infections and pneumonia: systematic review and meta-analysis

M. Paul [1,*,3], Y. Dickstein [1,3], A. Raz-Pasteur [1,2]

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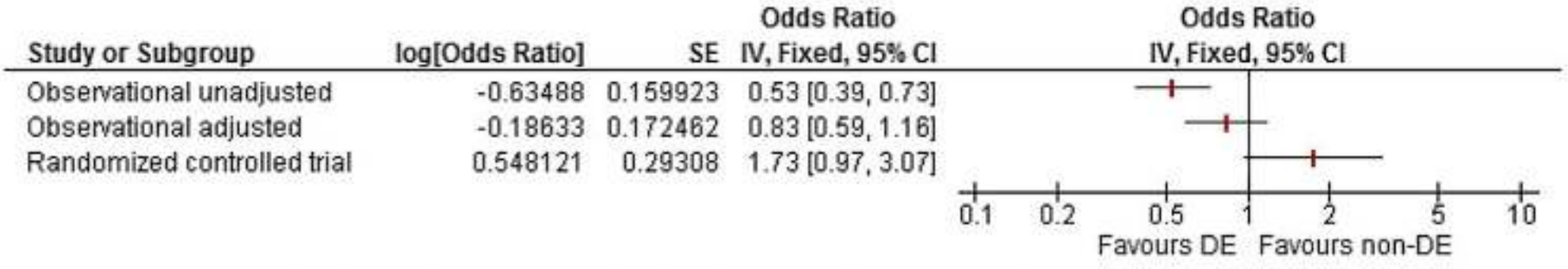

Fig. 5. Pooled odds ratios for all-cause mortality with de-escalation (DE) versus non-de-escalation (non-DE) by study design.

Gözlemsel çalışmalar bakteremi, VİP ve ciddi sepsisde AB duyarlılık testlerine dayalı ADE ile daha düşük mortalite görüldüğünü göstermekte. Randomize kontrollü çalışmalarda bu doğrulanamamış.

Clinical Microbiology and Infection 2016;22: 960e967

De-escalation versus continuation of empirical antimicrobial treatment in severe sepsis: a multicenter non-blinded randomized noninferiority trial

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Karine Baumstarck
Jean-Yves Lefrant
Jacques Albanèse
Samir Jaber
Alain Lepape
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Karine Béziller
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Abstract *Background:* In patients with severe sepsis, no randomized clinical trial has tested the concept of de-escalation of empirical antimicrobial therapy. This study aimed to compare the de-escalation strategy with the continuation of an appropriate empirical treatment in those patients. *Methods:* This was a multicenter non-

were assigned to de-escalation ($n = 59$) or continuation of empirical antimicrobial treatment ($n = 57$). The primary outcome was to measure the duration of ICU stay. We defined a noninferiority margin of 2 days. If the lower boundary of the 95 % confidence interval (CI) for the difference in patients assigned to the de-escalation group was less than 2 days, as compared with that of patients assigned to the continuation group, de-escalation was considered to be noninferior to the continuation strategy. Secondary outcomes included mortality at 90 days, occurrence of organ failure, number of superinfections, and number of days with antibiotics during the ICU stay. *Results:* The median duration of ICU stay was 9 [interquartile range (IQR) 5–22] days in the de-escalation group and 8 [IQR 4–15] days in the continuation group, respectively ($P = 0.71$). The mean difference was 3.4 (95 %

Empirik AB tedavisinin devamına kıyasla ADE stratejisi YBÜ'nde kalış süresini uzatmış. Fakat, mortalite oranını etkilememiş. AB süresini de kısaltmamış.

Intensive Care Med 2014;40:1399–1408

ADE riskleri

- GSAB DSAB ile yer değiştirmesi;
  - Birikmiş ekolojik etki
  - Daha fazla AB maruziyeti
  - Erken direnç gelişimi
  - Erken mik.tanı önemli olabilir

Emergence of Imipenem-Resistant Gram-Negative Bacilli in Intestinal Flora of Intensive Care Patients

Laurence Armand-Lefèvre,[a,b] Cécile Angebault,[a,b] François Barbier,[b,c] Emilie Hamelet,[a] Gilles Defrance,[a] Etienne Ruppé,[a,b] Régis Bronchard,[d] Raphaël Lepeule,[b] Jean-Christophe Lucet,[e] Assiya El Mniai,[a] Michel Wolff,[c] Philippe Montravers,[d] Patrick Plésiat,[f] Antoine Andremont[a,b]

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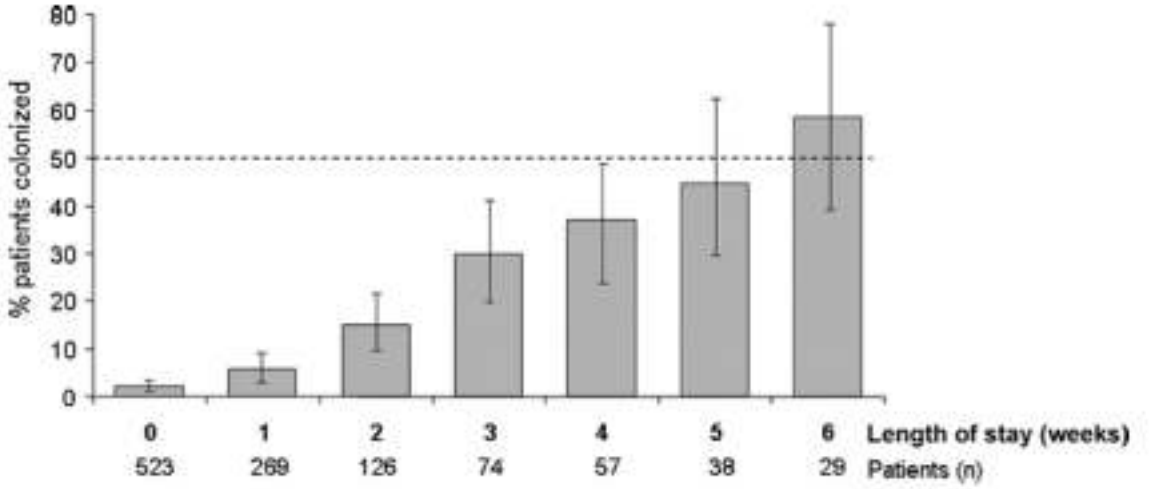

FIG 1 Rates of intestinal colonization by imipenem-resistant gram-negative bacilli in intensive care patients. Bars indicate observed rates ± standard deviation (SD) (error bars).

Intestinal flora … hich are potentially pathogenic for intensive ca… e of carbapenem resistance is a major concern … enem-resistant GNB (IR-GNB) in intens… tal IR-GNB colonization upon admission and … nd a case control study was performed to i… rly from 5.6% after 1 week to 58.6% after 6 w… *omonas aeruginosa* strains, 12 *Stenotrophomo… nii* strains. In *P. aeruginosa*, imipenem resis… production (4 strains). In the *Enterobacteria… m β-lactamase production with porin loss… ns (4 VIM-2 carbapenemase-producing *P. a… e main risk factor for IR-GNB colonization w… 5.9 (95% confidence interval [95% CI], 1.5 t… fter. In conclusion, even brief exposure to imipenem is a major risk factor for IR-GNB carriage.

Antimicrobial Agents and Chemotherapy 2013;57:1488–1495

Emergence of Imipenem-Resistant Gram-Negative Bacilli in Intestinal Flora of Intensive Care Patients

Laurence Armand-Lefèvre,[a,b] Cécile Angebault,[a,b] François Barbier,[b,c] Emilie Hamelet,[a] Gilles Defrance,[a] Etienne Ruppé,[a,b] Régis Bronchard,[d] Raphaël Lepeule,[b] Jean-Christophe Lucet,[e] Assiya El Mniai,[a] Michel Wolff,[c] Philippe Montravers,[d] Patrick Plésiat,[f] Antoine Andremont[a,b]

Imipenem exposure	28 (77.8)	14 (38.9)	5.4 (1.8–17.8)	<0.01
Days of imipenem exposure				<0.01
0	8 (22.2)	22 (61.1)	1.0	
1 to 3	10 (27.8)	6 (16.7)	4.4 (1.1–20.5)	
4 to 21	18 (50.0)	8 (22.2)	6.0 (1.7–23.3)	

AMD gelişimi antibiyotik tedavisinde çok erken (ilk 2-3 gün) meydana geliyor;
Çok kısa IP maruziyeti bile direnç oluşturmak için yetiyor.
GSAB kesilmesi veya daraltılması (ADE) AMD gelişimini azaltmada daha az etkili olabilir.

Antimicrobial Agents and Chemotherapy 2013;57:1488–1495

Antimicrobial de-escalation in critically ill patients: a position statement from a task force of the European Society of Intensive Care Medicine (ESICM) and European Society of Clinical Microbiology and Infectious Diseases (ESCMID) Critically Ill Patients Study Group (ESGCIP)

Alexis Tabah[1*], Matteo Bassetti[2], Marin H. Kollef[3], Jean-Ralph Zahar[4], José-Artur Paiva[5], Jean-Francois Timsit[6,7], Jason A. Roberts[8,9,10], Jeroen Schouten[11], Helen Giamarellou[12], Jordi Rello[13,14], Jan De Waele[15], Andrew F. Shorr[16], Marc Leone[17], Garyphallia Poulakou[18], Pieter Depuydt[12] and Jose Garnacho-Montero[19]

Abstract

Background: Antimicrobial de-escalation (ADE) is a strategy of antimicrobial stewardship, aiming at preventing the emergence of antimicrobial resistance (AMR) by decreasing the exposure to broad-spectrum antimicrobials. There is no high-quality research on ADE and its effects on AMR. Its definition varies and there is little evidence-based guidance for clinicians to use ADE in the intensive care unit (ICU).

Methods: A task force of 16 international experts was formed in November 2016 to provide with guidelines for clinical practice to develop questions targeted at defining ADE, its effects on the ICU population and to provide clinical guidance. Groups of 2 experts were assigned 1–2 questions each within their field of expertise to provide draft statements and rationale. A Delphi method, with 3 rounds and an agreement threshold of 70% was required to reach consensus.

Results: We present a comprehensive document with 13 statements, reviewing the evidence on the definition of ADE, its effects in the ICU population and providing guidance for clinicians in subsets of clinical scenarios where ADE may be considered.

Conclusion: ADE remains a topic of controversy due to the complexity of clinical scenarios where it may be applied and the absence of evidence to the effects it may have on antimicrobial resistance.

Keywords: Antimicrobial de-escalation, De-escalation, Antimicrobial resistance, Stewardship

Efficacy and safety of antimicrobial de-escalation as a clinical strate

Calypso Mathieu[a], Bruno Pastene[a], Nadim Cassir[b], Ignacio Martin-Loeches[c] and Marc Leone[a,b]

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ABSTRACT

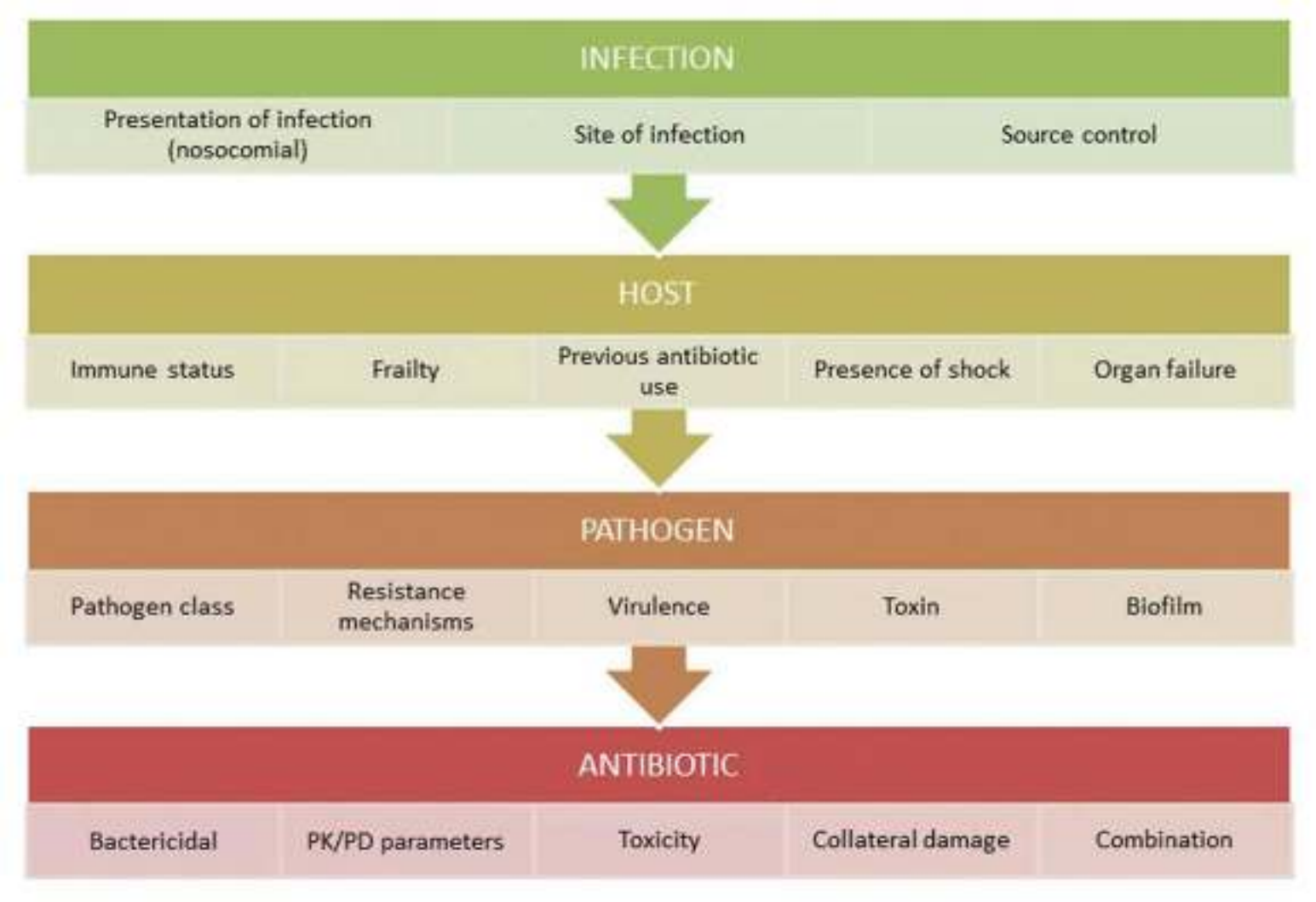
Introduction: De-escalation is a widely recommended strategy in regard to guidelines, with an associated adherence to guidelines being around 50%. This review discusses data supporting de-escalation and possible obstacles for its implementation.

Areas covered: Although it does not have a consensual definition, de-escalation consists of reducing the spectrum of empirical antimicrobial treatment based on the microbiological findings. Many observational studies have suggested that this strategy is likely safe and efficient for treating various types of infection. However, randomized controlled trials published as of now have not shown any improvement on the outcomes. Regarding the adverse effects of de-escalation on ecological pressure and multidrug resistance emergence, the data are contradictory. The implementation of new techniques, such as rapid diagnosis, can help guide clinicians.

Expert opinion: De-escalation should be included as part of a large antibiotic stewardship program to balance the risk and benefit of each administration, and each physician prescribing antibiotics should be challenged for the quality of her/his prescription on a daily basis. In the future, one of our duties will involve determining whether a delay of antimicrobial treatment – making it possible to improve diagnostic performance and obtain the first laboratory results – is either safe or unsafe for our patients.

Expert Rev Anti Infect Ther 2019;17:79-88.

ADE Belirleyiciler



Expert Rev Anti Infect Ther 2019;17:79-88.

Annals of Internal Medicine ORIGINAL RESEARCH

Blood Culture Results Before and After Antimicrobial Administration in Patients With Severe Manifestations of Sepsis

A Diagnostic Study

Matthew P. Cheng, MD; Robert Stenstrom, MD, PhD; Katryn Paquette, MD; Sarah N. Stabler, PharmD; Murtaza Akhter, MD; Adam C. Davidson, MD; Marko Gavric, BSc; Alexander Lawandi, MD; Rehman Jinah, BSc; Zahid Saeed, MD; Koray Demir, MD; Kelly Huang, BSc; Amirali Mahpour, MD; Chris Shamatutu, BSc; Chelsea Caya, MSc; Jean-Marc Troquet, MD; Greg Clark, MD; Cedric P. Yansouni, MD; and David Sweet, MD; for the FABLED Investigators*

Ciddi sepsisli 3164 hastada

AB başlanmadan önce alınan kan kültürlerinde pozitiflik oranı %31.4,

AB başlandıktan sonra 120 dk içersinde alınan kan kültürlerinde pozitiflik oranı %19.4.

Ann Intern Med. 2019;171:547-554

What Is the More Effective Antibiotic Stewardship Intervention: Preprescription Authorization or Postprescription Review With Feedback?

Pranita D. Tamma,[1] Edina Avdic,[2] John F. Keenan,[3] Yuan Zhao,[4] Gobind Anand,[5] James Cooper,[6] Rebecca Dezube,[7] Steven Hsu,[8] and Sara E. Cosgrove[9]

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Erken müdaheleden ziyade geç müdahele (ADE) AB kullanımını azaltmada daha etkili.

Empirik AB uygunsa kısa süre için (≤ 5 gün) devam edilmeli, farklı antibiyotiğin ardışık kullanımı ile hastaların mikrobiyomunda tekrarlanan değişiklik yaratılmasından kaçınılmalı

and 6 DOT per 1000 PD, respectively ($P = .03$). Antibiotic therapy was guideline-noncompliant in 54% and 41% of patients on days 1 and 3 in the PPA group ($P < .01$) and in 57% and 36% of patients on days 1 and 3 in the PPRF group ($P = .03$).

Conclusions. PPRF may have more of an impact on decreasing antibiotic DOTs compared with PPA. This information may be useful for institutions without sufficient resources to incorporate both stewardship approaches.

Keywords. antibiotics; ASP; days of therapy; antimicrobial stewardship.

Clinical Infectious Diseases 2017;64(5):537–43

AB süresi de önemli!

- Antimikrobiyallerin süresi de hastalığın ciddiyetine, enfeksiyon tipine ve kaynak kontrolünün yapılıp yapılmamasına göre belirlenir.
- Genel olarak 7-10 günlük süre tedavi için yeterlidir.

- **Toplumdan kazanılmış pnömoni, VİP, üriner sistem enfeksiyonları, komplike intraabdominal enfeksiyonlar ve diğer bakteremileri olan YBÜ hastalarında kısa süreli (5 - 7 gün) antibiyotik tedavisi etkili ve güvenli**

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- **AB tedavisinin erken sonlandırılmasında prokalsitoninin yararı ??**

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Sonuç olarak..

Yaşamı tehdit eden bir enfeksiyon karşısında

- hızlı olarak
- olası tüm patojenleri kapsayacak şekilde
- kişiye özel geniş spektrumlu antibiyotik başlanmalı…

Any Questions