

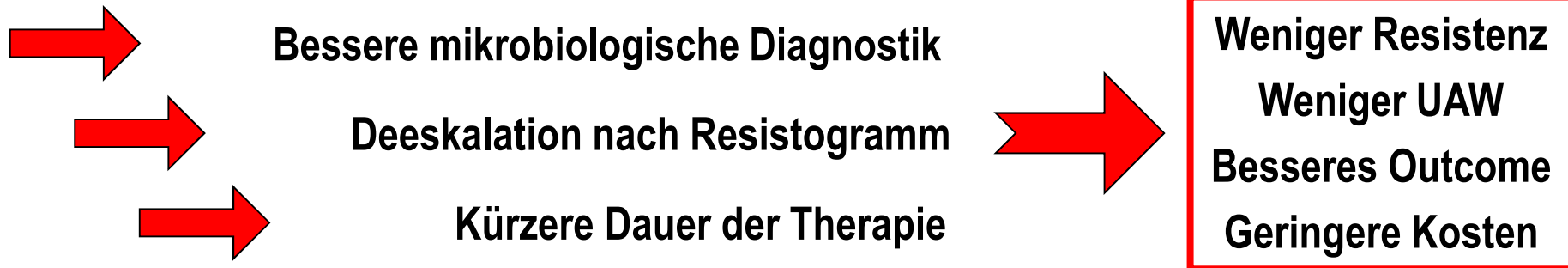
# Therapiestrategien: Deeskalation

Dr. med. Christian Lanckohr, EDIC

Antibiotic Stewardship (ABS) –Team  
Institut für Hygiene



- Interdisziplinäre Visite auf Station: Verordnungen werden gemeinsam überprüft und Verbesserungsvorschläge gemacht („*audit and feedback*“).
- Vielleicht auch: bestimmte Substanzen sind nur nach vorheriger Autorisierung erhältlich („*restriction and pre-approval*“).
- Und auf jeden Fall: kontinuierliche Weiterbildung zum Thema Antibiotika, Resistenz, Hygiene (Seminare, Erstellung von Standards, etc.).



# DEESKALATION – DIE RATIONALE

- Die Exposition mit Antibiotika ist der wichtigste Induktor für die Resistenzentwicklung.
- Wenn man weniger Erreger unter Resistenzdruck setzt, ist die Chance zur Resistenzentwicklung geringer.
- Ein schmaleres Behandlungsspektrum hat einen geringeren Einfluss auf die verschiedenen Mikrobiome, die jeweils auch eine protektive Funktion haben.



## **Die Bereitschaft, antiinfektive Therapien zu verändern, ist gering.**

- Es existiert keine allgemeine Definition für „Deeskalation“.
  - Der Zeitrahmen für die Deeskalation ist nicht klar umrissen.
  - Ist Ende der Therapie auch Deeskalation?
  - Die Intervention ist eigentlich nicht gut untersucht.
  - Studien-Endpunkte sind schwierig: besseres Outcome vs. Nicht-Unterlegenheit?
  - Wie berücksichtigt man Kollateralschäden: Mikrobiom, Clostridien, Resistenzentwicklung etc.?
-

# UNTERSCHIEDLICHE DEFINITIONEN

Authors	Year	Initial Broad-Spectrum Therapy (If Specific Antimicrobials Described)	Definition of ADE			Negative Cultures Included in ADE	Ranking of Agents	ADE to Occur on or Before Specified Day of Therapy
			Decrease No. of Antimicrobials	Narrow Spectrum	Shorten (or Cease) Therapy			
Alvarez-Lerma [11]	2006	Imipenem ± aminoglycoside ± glycopeptide	Yes	Yes	No	No	Not ranked	Between 3rd and 5th d
Giantsou et al [12]	2007	No specific antimicrobials described	Yes	Yes	No	No	Carbapenem > extended-spectrum penicillin > fluoroquinolone + aminoglycoside > nonantipseudomonal β-lactam	3 <sup>rd</sup> d
Eachempati et al [13]	2009	Monthly rotation of empiric therapy (cefepime, levofloxacin, imipenem or meropenem, piperacillin-tazobactam)	Yes	Yes	No	No	Not ranked	Between 2nd and 3rd d
De Waele et al [14]	2010	Meropenem	No	Yes	No	No	Not ranked	3 <sup>rd</sup> d
Morel et al [15]	2010	No specific antimicrobials described	Yes	Yes	Yes	No	Not ranked	Before 5th d for reducing number of antibiotics, before 3rd d for early cessation
Joung et al [16]	2011	No specific antimicrobials described	Yes	Yes	Yes	Yes	Carbapenem > piperacillin-tazobactam > cefepime or 3rd generation cephalosporin	Specified for negative cultures: discontinuation before 5th d if >48 h of defervescence
Heenen et al [17]	2012	No specific antimicrobials described	Yes (including antifungal)	Yes	No	No	Not ranked	5 <sup>th</sup> d after diagnosis
Kim et al [18]	2012	ADE group: imipenem + vancomycin; non-ADE group: empiric antimicrobials according to national guidelines for nosocomial pneumonia	Yes	Yes	No	Yes	Not ranked	3 <sup>rd</sup> to 5th d
Gonzalez et al [19]	2013	No specific antimicrobials described	Yes	Yes	Yes	Yes	Not ranked	Specified when no obvious infectious site: discontinuation before 4th d if favorable clinical evolution/ alternative diagnosis

Tabah A. *Clin Infect Dis* (2016); 62(8): 1009-17

CMI  
CLINICAL MICROBIOLOGY  
AND INFECTION

## Elaboration of a consensual definition of de-escalation allowing a ranking of $\beta$ -lactams

E. Weiss<sup>1</sup>, J.-R. Zahar<sup>2</sup>, P. Lesprit<sup>3</sup>, E. Ruppe<sup>4</sup>, M. Leone<sup>5</sup>, J. Chastre<sup>6</sup>, J.-C. Lucet<sup>7</sup>, C. Paugam-Burtz<sup>1</sup>, C. Brun-Buisson<sup>8</sup> and J.-F. Timsit<sup>9</sup>, on behalf of the 'De-escalation' Study Group

- 28 französische „Spezialisten“ (Intensivmediziner, Infektiologen, Mikrobiologen) einigen sich in Delphi-Runden auf ein paar Dinge.
- Eine Zustimmung von >70% bei einer Frage wird als Konsens gewertet.

# WELCHE FRAGEN?

Question 1 Do you think that de-escalation consists in:

Reducing antimicrobial activity spectrum ☐

Reducing ecological consequences of antimicrobials on microbiota ☐

Reducing both antimicrobial activity spectrum and ecological consequences of antimicrobials on microbiota ☐

Question 2 On the basis of your answer to question 1, do you think that switching from Imipenem, Meropenem or Doripenem to one of the following molecule is a de-escalation?

Ertapenem

☐yes ☐no

Fourth-generation cephalosporin

☐yes ☐no

Question 9 Do you think that switching from combination to monotherapy is a de-escalation?

Regardless of the molecule withdrawn? ☐yes ☐no

In case of aminoglycoside discontinuation? ☐yes ☐no

In case of ciprofloxacin discontinuation? ☐yes ☐no

In case of glycopeptide discontinuation? ☐yes ☐no

Question 10 To qualify for de-escalation, do you think that the change in antibiotic regimen should be performed?

Before day 3 ☐

Before day 5 ☐

At any time during therapy ☐

Cefotaxime or Ceftriaxone

☐yes ☐no

Amoxicillin/Clavulanate

☐yes ☐no

Amoxicillin

☐yes ☐no

Weiss E. *Clin Microbiol Infect* (2015); 21(7): 649.e1-10



- 84% sehen zwei Ziele für Deeskalation:
  - Reduktion des Spektrums
  - Reduktion des Resistenzdrucks auf das Mikrobiom
- 92% werten Ende einer Kombinationstherapie als Deeskalation.
- Oralisierung ≠ Deeskalation
- Verkürzung ≠ Deeskalation
- Der Zeitrahmen wird als unerheblich eingeschätzt.

Rank	Molecule(s)	Similar response rate (%) <sup>a</sup>	Consensus reaching round number <sup>b</sup>
1	Amoxicillin	100	2
2	Amoxicillin + Clavulanic Acid	88	3
3	Third-generation cephalosporin Ureido/carboxy-penicillin	81	3
4	Piperacilin + Tazobactam Ticarcilin + Clavulanic Acid Fourth-generation cephalosporin, Antipseudomonal third-generation cephalosporin	71	4
5	Ertapenem	81	3
6	Imipenem Meropenem Doripenem	85	2

<sup>a</sup>Indicates the proportion of the Expert Panel members that agreed with the molecules included in each rank of the classification.

<sup>b</sup>Indicates how many rounds of the Delphi process were necessary to reach a consensus.



# DEESKALATION – EVIDENZ?



## De-escalation of antimicrobial treatment for adults with sepsis, severe sepsis or septic shock

Brenda NG Silva<sup>1</sup>, Régis B Andriolo<sup>2</sup>, Álvaro N Atallah<sup>3</sup>, Reinaldo Salomão<sup>4</sup>

### Objectives

To evaluate the effectiveness and safety of de-escalation antimicrobial treatment for adult patients diagnosed with sepsis, severe sepsis or septic shock caused by any micro-organism.

### Included studies

We did not include any studies in this updated review.

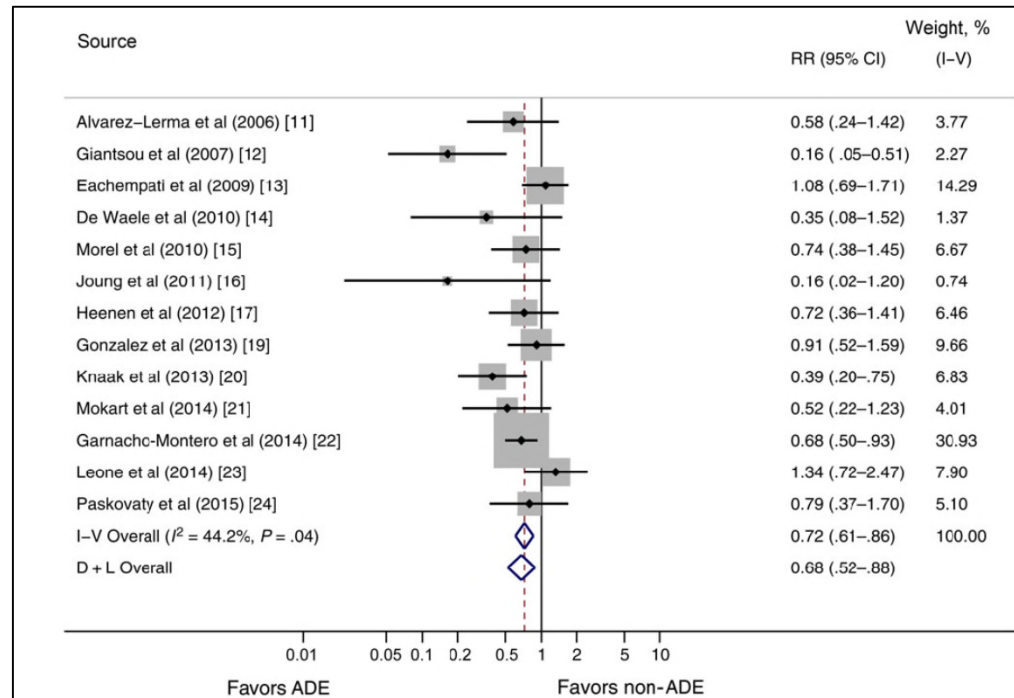
### Authors' conclusions

There is no adequate, direct evidence as to whether de-escalation of antimicrobial agents is effective and safe for adults with sepsis, severe sepsis or septic shock. This uncertainty warrants further research via RCTs and the authors are awaiting the results of an ongoing RCT testing the de-escalation of empirical antimicrobial therapy for severe sepsis.

# DEESKALATION – EVIDENZ?

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

Alexis Tabah,<sup>1,2,a</sup> Menino Osbert Cotta,<sup>1,2,3,a</sup> Jose Garnacho-Montero,<sup>6</sup> Jeroen Schouten,<sup>7</sup> Jason A. Roberts,<sup>1,2,3</sup> Jeffrey Lipman,<sup>1,2,4</sup> Mark Tacey,<sup>5</sup> Jean-François Timsit,<sup>8,9</sup> Marc Leone,<sup>10</sup> Jean Ralph Zahar,<sup>11</sup> and Jan J. De Waele<sup>12</sup>; for the Working Group for Antimicrobial Use in the ICU



Tabah A. *Clin Infect Dis* (2016); 62(8): 1009-17

# DEESKALATION – VIELE PROBLEME

- Ein Vergleich der Studien ist schwierig.
- Fast alle Studien sind retrospektiv und beobachtend: Entscheidung zur Deeskalation lag letztlich bei den behandelnden Ärzten (Bias?).
- Deeskalation ist mit besserem Outcome „assoziiert“, aber nur fraglich kausal dafür verantwortlich.
- Der Einfluss auf Kollateralschäden ist unklar.

**Table 3. Factors Associated With Antimicrobial De-escalation**

Factors Associated With ADE

Positively associated

- Initially appropriate empiric antimicrobial therapy
- Broad-spectrum empiric therapy
- Compliance with national prescribing guidelines
- Treatment with multiple and “companion” antimicrobials
- Positive microbiological cultures
- Lower severity of illness scores at

Baseline

Time of ADE

Day 5 of therapy

Negatively associated

- Isolation of a multiresistant pathogen
- Polymicrobial infections
- Intra-abdominal infections

Abbreviation: ADE, antimicrobial de-escalation.

Tabah A. *Clin Infect Dis* (2016); 62(8): 1009-17

- Deeskalation ist nicht immer möglich und als „Strategie“ selektiv:
  - Ohne Probengewinnung gibt es keine mikrobiologischen Ergebnisse.
  - Nicht jede Probe ist am Ende wegweisend.
  - Bei hoher Prävalenz resistenter Erreger wird man seltener deeskalieren können.
  - Wenn die kalkulierte Therapie gut an der lokalen Resistenzlage ausgerichtet ist, wird man seltener „zu breit“ therapieren; Deeskalation ist dann nicht nötig bzw. möglich.
- Deeskalation greift meist in eine funktionierende („adäquate“) Therapie ein:
  - „*Never change a winning team*“
  - Schmaleres Spektrum wird als schwächere Wirkung wahrgenommen.
  - Ob der Mikrobiologe wohl auch alle relevanten Erreger gefunden hat...?

*Clinical Infectious Diseases*

**EDITORIAL COMMENTARY**

 **IDSA**  
Infectious Diseases Society of America

 **hivma**  
hiv medicine association

 **OXFORD**

## Antimicrobial De-escalation: What's in a Name?

**Marin H. Kollef<sup>1</sup> and Scott T. Micek<sup>2</sup>**

<sup>1</sup>Division of Pulmonary and Critical Care Medicine, Washington University School of Medicine, and <sup>2</sup>St Louis College of Pharmacy, Missouri

(See the Review Article by Tabah et al on pages 1009–17.)

In summary, we should consider ADE to be part of broader ASPs. The ultimate rationale or justification for the use of ADE and ASPs in the intensive care unit is that antibiotic therapy affects not only the treated patient but also patients in the surrounding environment by promoting resistance. However, we need to continue to develop more cost-effective and widely applicable tools that facilitate clinicians' and hospitals' ability to successfully carry out these important processes.

Es besteht Einigkeit, dass man  
Deeskalation machen soll.  
Es ist Teil einer Gesamtstrategie.

Kollef MH. *Clin Infect Dis* (2016); 62(8): 1018-20



# Current evidence on hospital antimicrobial stewardship objectives: a systematic review and meta-analysis

Emelie C Schuts, Marlies E J L Hulscher, Johan W Mouton, Cees M Verduin, James W T Cohen Stuart, Hans W P M Overdiek, Paul D van der Linden, Stephanie Natsch, Cees M P M Hertogh, Tom F W Wolfs, Jeroen A Schouten, Bart Jan Kullberg, Jan M Prins

Definitions		<b><u>Letalität</u></b>
<u>Empirical therapy according to the guidelines</u>	Empirical systemic antibiotic therapy prescribed according to local guide or national guidelines*	<b>-35%</b>
Blood cultures	Take at least two sets of blood cultures before starting systemic antibiotic therapy	
Cultures from the site of infection	Take cultures from suspected sites of infection, preferably before starting systemic antibiotic therapy	<b>-56%</b>
<u>De-escalation of therapy</u>	Change to narrow-spectrum antibiotic or stop antibiotics as soon as culture results are available <sup>10-13</sup>	
Adjustment of therapy to renal function	Adjustment of dose and dosing interval of systemic antibiotics	
Switch from intravenous to oral therapy	Switch after 48-72 h, when the clinical condition of the patient is stable, oral intake and gastrointestinal absorption are adequate, and when sufficiently high concentrations in blood with a suitable oral antibiotic can be achieved <sup>10,14,15</sup>	
Documented antibiotic plan	Documented antibiotic plan should include indication, drug name and dose, and administration route and interval, and should be included in the case notes at the start of systemic antibiotic treatment	<b>-40- 60%</b>
Therapeutic drug monitoring	NA	
Discontinuation of antibiotic therapy if infection is not confirmed	Discontinuation of empirical treatment based on lack of clinical or microbiological evidence of infection†	
Presence of a local antibiotic guide	Local antibiotic guide present in the hospital and assessed for update every 3 years	
Local antibiotic guide in agreement with national antibiotic guidelines	Corresponds for all features but can deviate on the basis of local resistance patterns	
List of restricted antibiotics	Removal of specific antibiotics from the formulary or restriction of use by requiring preauthorisation by a specialist (infectious diseases or medical microbiology) or allowing use for only 72 h with mandatory approval for further use; studies in outbreak settings excluded	
<u>Bedside consultation</u>	Formal consultation by an infectious disease specialist leading to written comments and advice on treatment based on physical examination and review of medical records (informal consultation, for example by telephone, does not count as bedside consultation)	
Assessment of patients' adherence	NA	

Schuts EC. *Lancet Infect Dis* (2016) 16:847-56

# DIE TARRAGONA-STRATEGIE

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**Hit Early!**

**Look at your  
patient!**

**Listen to your  
hospital!**

**Hit hard!**

**Get to the point!**

**Focus, focus, focus!**

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- Wir haben kaum Einblick in pharmakokinetische Aspekte der Therapie:
  - Manche Antibiotika kann man messen (z.B. Glykopeptide); wenn ich eine „kontrollierbare“ Therapie deeskaliere und dann unterdosiert weitermache, habe ich nichts gewonnen.
  - Viele (breite) Antibiotika sind schwierig zu dosieren (z.B. Linezolid); wenn ich von einer suboptimalen Therapie zu Substanzen deeskaliere, die ich empirisch „besser“ dosiere (z.B. 12g Flucloxacillin), wird das gut sein.
  - Wie lange dauert es eigentlich, bis ein Antibiotikum „wirkt“? Vielleicht nur ein paar Gaben? Ist die Infektion ggf. schon „mikrobiologisch“ geheilt, wenn man typischerweise deeskaliert?

**Ohne TDM wird es nicht gehen!**

**Wir brauchen Studien, die diese Aspekte berücksichtigen!**

## A Simulation Study Reveals Lack of Pharmacokinetic/Pharmacodynamic Target Attainment in De-escalated Antibiotic Therapy in Critically Ill Patients

Mieke Carlier,<sup>a,b</sup> Jason A. Roberts,<sup>c,d,e</sup> Veronique Stove,<sup>a,f</sup> Alain G. Verstraete,<sup>a,f</sup> Jeffrey Lipman,<sup>c,d</sup> Jan J. De Waele<sup>b</sup>

TABLE 1 Simulated intravenous dosages of antibiotics

Antibiotic	Dosage simulation
Meropenem	1 g every 8 h as an intermittent infusion 1 g every 8 h as a 4-h extended infusion 3 g/day as a continuous infusion
Piperacillin	4 g every 8 h as an intermittent infusion 4 g every 8 h as a 4-h extended infusion 12 g/day as a continuous infusion 4 g every 6 h as an intermittent infusion 4 g every 6 h as a 3-h extended infusion 16 g/day as a continuous infusion
Cefepime	1 g every 12 h as an intermittent infusion 2 g every 12 h as an intermittent infusion for <i>S. aureus</i> infections
Amoxicillin	1 g every 6 h as an intermittent infusion
Cefuroxime	1.5 g every 8 h as an intermittent infusion
Flucloxacillin	1 g every 6 h as an intermittent infusion
Cefazolin	1 g every 8 h as an intermittent infusion

TABLE 2 Simulated dosages for the de-escalation antibiotics using higher dosages and alternative dosing strategies

Antibiotic	Dosage simulation
Amoxicillin	1 g every 4 h as an intermittent infusion 1 g every 4 h as a 2-h extended infusion 6 g/day as a continuous infusion
Cefuroxime	1.5 g every 6 h as an intermittent infusion 1.5 g every 6 h as a 3-h extended infusion 6 g/day as a continuous infusion
Flucloxacillin	2 g every 6 h as an intermittent infusion 2 g every 6 h as a 3-h extended infusion 8 g/day as a continuous infusion
Cefazolin	1 g every 6 h as an intermittent infusion 1 g every 6 h as a 3-h extended infusion 4 g/day as a continuous infusion
Cefepime	2 g every 8 h as an intermittent infusion 1 g every 4 h as an intermittent infusion 4 g/day as a continuous infusion

Carlier M. *Antimicrob Agents Chemother.* (2015); 59(8): 4689-94

		FTA (%)															
Antibiotic	Dosing	Oxacillin-susceptible <i>S. aureus</i>		<i>Streptococcus</i> spp.		<i>K. pneumoniae</i>		<i>H. influenzae</i>		<i>C. freundii</i>		<i>M. morganii</i>		<i>P. mirabilis</i>		<i>E. coli</i>	
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Meropenem	3 g, CI	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1 g q8h, EI	99	87	100	100	100	93	100	93	99	92	99	89	100	92	100	97
	1 g q8h, II	99	64	100	100	100	72	100	73	99	70	99	66	100	70	100	88
Piperacillin- tazobactam	16 g, CI	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	4 g q6h, EI	100	94	100	100	100	87	100	100	100	88	100	96	100	96	100	91
	4 g q6h, II	98	87	100	100	95	76	100	100	96	78	99	91	99	91	97	81
	12 g, CI	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	4 g q8h, EI	100	88	100	100	100	77	100	100	100	79	100	100	100	92	100	82
	4 g q8h, II	95	78	100	100	89	62	100	100	90	65	97	83	97	84	92	69
Cefepime	1 g q12h, II	76	54	100	97	100	99	100	99	100	100	100	100	100	100	100	100
	2 g q12h, II	88	69	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	2 g q8h, II	98	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1 g q4h, II	99	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	4 g, CI	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Amoxicillin- clavulanic acid	1 g q6h, II	96 <sup>b</sup>	83 <sup>b</sup>	100 <sup>b</sup>	100 <sup>b</sup>	90	77	98 <sup>b</sup>	89 <sup>b</sup>	91	74	89 <sup>b</sup>	73 <sup>b</sup>	98	87	85	66
	1 g q4h, II	99 <sup>b</sup>	92 <sup>b</sup>	100 <sup>b</sup>	100 <sup>b</sup>	95	86	99 <sup>b</sup>	97 <sup>b</sup>	96	86	95 <sup>b</sup>	85 <sup>b</sup>	99	95	92	80
	1 g q4h, EI	100 <sup>b</sup>	95 <sup>b</sup>	100 <sup>b</sup>	100 <sup>b</sup>	95	90	100 <sup>b</sup>	98 <sup>b</sup>	100	90	100 <sup>b</sup>	89 <sup>b</sup>	100	97	100	85
	6 g, CI	100 <sup>b</sup>	100 <sup>b</sup>	100 <sup>b</sup>	100 <sup>b</sup>	99	99	100 <sup>b</sup>	100 <sup>b</sup>	99	99	98 <sup>b</sup>	98 <sup>b</sup>	100	100	98	98
Cefuroxime	1.5 g q8h, II	86	61	100	100	73	53	88	71	66	46			83	64	65	45
	1.5 g q6h, II	94	81	100	100	84	67	95	84	79	61			92	78	78	60
	1.5 g q6h, EI	99	90	100	100	95	79	100	92	93	73			99	88	92	72
	6 g CI	100	100	100	100	99	99	100	100	98	98			99	99	98	98

Carlier M. *Antimicrob Agents Chemother.* (2015); 59(8): 4689-94



# DEESKALATION – VIELLEICHT DOCH NICHT?

Intensive Care Med (2014) 40:1399–1408  
DOI 10.1007/s00134-014-3411-8

## SEVEN-DAY PROFILE PUBLICATION

Marc Leone  
Carole Bechis  
Karine Baumstark  
Jean-Yves Lefrant  
Jacques Albanèse  
Samir Jaber  
Alain Lepape  
Jean-Michel Constantin  
Laurent Papazian  
Nicolas Bruder  
Bernard Allaouchiche  
Karine Bézulier  
François Antonini  
Julien Textoris  
Claude Martin  
For the AZUREA Network Investigators

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

In conclusion, for the first time, this multicenter trial randomly assigned de-escalation or continuation strategy. In terms of duration of ICU stays, de-escalation was inferior to continuation of the appropriate empirical treatment. De-escalation was associated with an increased number of superinfections, but it did not affect mortality.

- Multizentrische, randomisierte „Nicht-Unterlegenheitsstudie“ bei 116 Intensivpatienten
- Deeskalation durch mikrobiologische Ergebnisse gesteuert
- Primärer Outcomeparameter: Tage zwischen Studieneinschluss und ICU-Entlassung (tot oder lebendig)
- Sekundäre Outcomeparameter: Intensivaufenthalt, 90-Tage Sterblichkeit, Beatmungsdauer, Katecholaminpflicht, Antibiotikafreiheit, Superinfektionen, Inzidenz von *Clostridium difficile*

Leone M. *Intensive Care Med* (2014); 40(1): 1399-1408

## De-escalation strategy

After the results of the antibiogram of the suspected causative bacteria were available, the “pivotal” antibiotic used for empirical treatment was switched to an antibiotic with a spectrum as narrow as possible according to the targeted pathogens [4]. The companion drug (aminoglycoside or fluoroquinolone or macrolide) was stopped at day 3. The choice of antibiotics was based on international guidelines [3, 15–18]. The empirical antibiotics directed against methicillin-resistant *Staphylococcus aureus* (MRSA) were stopped if MRSA was not identified in microbiological cultures. For the purpose of this study, de-escalation was considered if the pivotal antibiotic was switched for an antibiotic with a narrower spectrum than the empirical treatment, according to a ranking of molecules provided in Electronic Supplementary Material Table 2. The companion drug and the antibiotic used against MRSA were eliminated after inclusion.

- Was haben die Kollegen gemacht:
  - 90% der Patienten wurden mit einer (synergistischen) Kombinationstherapie versorgt
  - 42% der Patienten erhielten zusätzlich nach Maßgabe der behandelnden Ärzte ein *MRSA*-wirksames Antibiotikum
  - An Tag 3 wurde die Kombinationstherapie beendet
  - An Tag 3 wurde die *MRSA*-Therapie beendet (wenn möglich)
  - Dann ging die eigentliche Studie los...

**Praktisch alle Patienten wurden deeskaliert.**

**Es wurden Grenzen der Deeskalation getestet: „*how low can you go..?*“**

# ES GIBT EIN BISSCHEN STREIT

Intensive Care Med (2014) 40:1583–1585  
DOI 10.1007/s00134-014-3488-0

EDITORIAL

Jan J. De Waele  
Matteo Bassetti  
Ignacio Martin-Loeches

## Impact of de-escalation on ICU patients' prognosis

The current study by Leone et al. [8] casts significant doubt whether the reduction of the spectrum of the antibiotic can be considered safe as a routine measure. In their

Intensive Care Med (2014) 40:1580–1582  
DOI 10.1007/s00134-014-3485-3

EDITORIAL

Jean-Francois Timsit  
Stephan Harbarth  
Jean Carlet

## De-escalation as a potential way of reducing antibiotic use and antimicrobial resistance in ICU

Given the absence of difference in mortality between groups, the repeated results of observational studies showing de-escalation and reduced treatment duration as proper ways to reduce antibiotic use, and the serious flaws of this RCT, de-escalation should remain recommended and be carefully evaluated in further studies.

- Mikrobiologische Materialien sind eine gute Argumentationshilfe bei der Deeskalation.
  - Breites Wirkspektrum  $\neq$  Starke Wirksamkeit
  - Wenn kein *MRSA* da ist, muss man den nicht therapieren.
  - Anaerobier muss man nicht doppelt behandeln.
  - Kombinationstherapien sind insgesamt auf dem Rückzug.
  - Bei Deeskalation lässt die „Evidenz“ zu wünschen übrig, trotzdem besteht breiter Konsens, dass man es machen soll.
  - Deeskalation ist Teil eines Maßnahmenbündels zur Optimierung des Antibiotikaeinsatzes (ABS).
-



# Vielen Dank!

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