Gruppenarbeit Regensburg

Gruppe 1

Oralisierung Allgemein

Checkliste: Umstellung von parenteraler auf orale Antibiotika-Therapie		
Einschlusskriterien für die Umstellung		
Dauer der parenteralen Therapie mind. 24 Std.	JA	NEIN
Temperatur unter 38 °C seit 24 Std.	JA	NEIN
Zeichen der klinischen Besserung	JA	NEIN
Patient/-in trinkt reichlich	JA	NEIN
Ausschlusskriterien für die Umstellung		
Bestehende/beginnende GI-Probleme	JA	NEIN
Neutropenie, Leukose, Tumor	JA	NEIN
Abszess, schwere Weichteilinfektion	JA	NEIN
Endokarditis, Meningitis	JA	NEIN
Osteomyelitis	JA	NEIN
Entscheidung		
Erfüllt der Patient/die Patientin ALLE Einschlusskriterien und KEINE der Ausschlusskriterien ist eine Umstellung von parenteral auf oral möglich.		

Abbildung 7.23: Vorschlag - Organisationsanweisung zur Umstellung der Antibiotika-Therapie (Quelle: Laing, R.B.S. et al. (1998): Journal of Antimicrob. Chemotherapy, 1998; 42: 107-111)

TABLE I. Criteria used to determine patient eligibility for intravenous to oral antimicrobial switch therapy

Criteria
Temperature <38°C or >36°C for 24–48 h; normalizing body temperature; afebrile for at least 8–24 h [5,9,12,14,16–18,20,21,23,25]
No unexplained tachycardia, haemodynamic instability [7,9,14,16,21,23,25]
Clinical improvement, no clinical indication for intravenous therapy [5,7,9,12,17–20,23,25]
Oral fluids/food tolerated, no reason to believe oral absorption of antimicrobials may be poor; may be by nasogastric/gastric feeding tube [5,7,9,12,14–20,22,23,25]
Improving white blood cell count [5,9,12,14,16,17,20,23,25]
Improving C-reactive protein [5,9]
Suitable oral antimicrobial therapy [9,12,23,24,33]
No surgery scheduled within next 24–36 h [16,25]

Clin Microbiol Infect 2015; **21:** S47–S55

Australian Prescriber
VOLUME 43 : NUMBER 2 : APRIL 2020

Oral or intravenous antibiotics?

SUMMARY

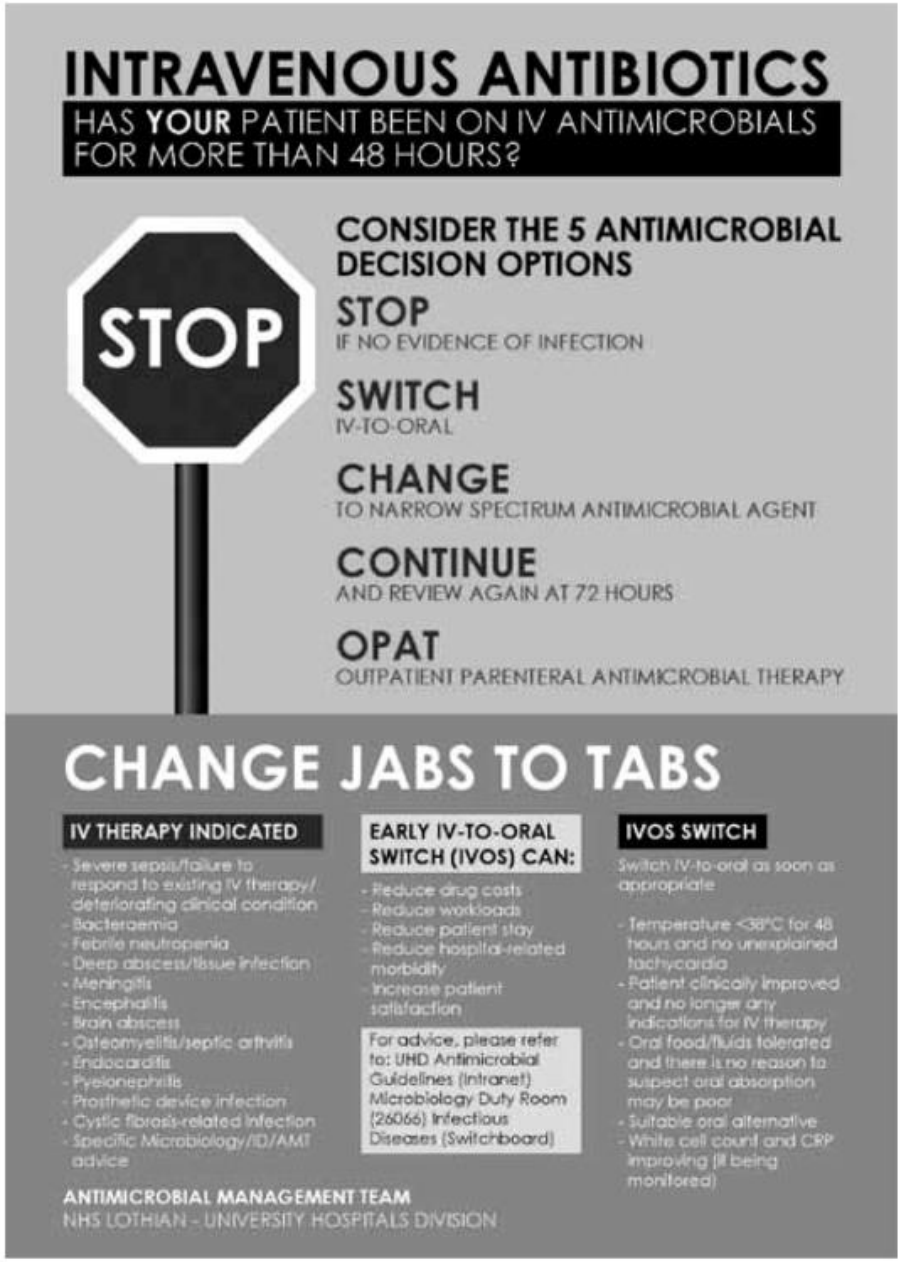
Intravenous antibiotics are overused in hospitals. Many infections can be managed with oral antibiotics.

Oral antibiotics avoid the adverse effects of intravenous administration. They are also usually less expensive.

When intravenous antibiotics are indicated, it may be possible to switch to oral therapy after a short course. There are guidelines to aid the clinician with the timing of the switch so that there is no loss of efficacy.

Infections that may be suitable for a short course of intravenous antibiotic include pneumonia, complicated urinary tract infections, certain intra-abdominal infections, Gram-negative bacteraemia, acute exacerbations of chronic lung disease, and skin and soft tissue infections.

Bone and joint infections and infective endocarditis are managed with prolonged courses of intravenous antibiotics. However, there is research looking at the feasibility of an earlier switch to oral antibiotics in these conditions.



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Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Narrative review

Transition from intravenous to oral antimicrobial therapy in patients with uncomplicated and complicated bloodstream infections

M.N. Al-Hasan [1, 2, *], H. Rac [3]

ARTICLE IN PRESS

Table 1
Summary of studies evaluating transition from intravenous to oral antimicrobial therapy in Gram-positive bloodstream infections

First author (year), study type [reference]	Number of patients	Microbiology	Study arms (% of study population)	Primary end point (rates for oral switch vs. IV therapy)	Adjusted results, if reported
Studies primarily focused on BSI					
Jorgensen (2018), cohort [15]	492	MRSA (uncomplicated 172, complicated 320)	IV to oral switch (14%) vs. IV only (86%)	90-day clinical failure (7.1% vs. 14.9%, p 0.08)	HR 0.4 (95% CI 0.1 −1.1)
Willekens (2018), propensity-matched cohort [16]	135	*Staphylococcus aureus* (MSSA 118, MRSA 17)	IV to oral linezolid (33%) vs. IV only (67%)	90-day relapse (2.2% vs. 4.4%, p 0.87)	OR 0.6 (95% CI 0.1 −5.4)

In press, CMI September 2019

ANTIBIOTIKA-Liste KRAGES (Stand Februar 2018)

KRAGES BURGENLÄNDISCHE KRANKENANSTALTEN GESELLSCHAFT M.B.H.

Entsprechend der klinischen Situation ist bei vielen Antibiotika sowohl die intravenöse als auch die perorale Verabreichung möglich
Diese Liste ist eine Orientierungshilfe für den gezielten und kostengünstigen Einsatz von Antibiotika

Wirksubstanz		Handelsname	Gen. Stufe	iv/ po	Richtdosis (Erw./Tag)	Tagestherapie-kosten (€/Einheit)	Resorption und Einnahme d. oralen Präparate sonstige Anmerkungen
BETA-LACTAM ANTIBIOTIKA, PENICILLINE							
Penicilline mit erweitertem Spektrum							
Ampicillin		**STANDACILLIN TRSTAMP 1G**	01	i.v.	3 x 2g	€€	
Ampicillin		**STANDACILLIN TRSTAMP 2G**	01	i.v.	3 x 2g	€€	
Amoxicillin		**AMOXICILLIN RTP FTBL 1000MG**	01	p.o	3 x 1g	€	Resorption: 90%, unabh. v. Mahlzeit
Pivmecillinam		**SELEXID FTBL**	01	p.o.	3 x 2 Tbl	€	Resorption: gut; Ind. HWI
Beta-Laktamase empfindliche Penicilline			01				
Benzylpenicillin		**PEN-G-NA TRSTAMP 1MEGA**	01	i.v.	3 x 10MIO	€€	
Benzylpenicillin		**PEN-G-NA TRSTAMP 5MEGA**	01	i.v.	3 x 10MIO	€€	
Benzylpenicillin		**PEN-G-NA TRSUB 10MEGA**	01	i.v.	3 x 10MIO	€€	
Phenoxymethylpenicillin		**OSPEN-1500 FTBL**	01	p.o	3 x 1,5g	€	Resorption: 60%, 1/2 Std. vor Mahlzeit
Beta-Laktamase resistente Penicilline			01				
Flucloxacillin		**FLOXAPEN 500 mg - Kps.**	01	p.o	3 x 2 St	€	Resorption: 70-80%, 1 Std. vor Mahlzeit
Flucloxacillin		**FLUCLOXACILLIN GSB DFL 1G, 2G ODER 4G**	01	i.v.	3-4 x tgl 2-4G	€€	TMD: 12G
Kombination v Penicillinen mit Betalaktamase Inhibitoren			01				
~~Sultamicillin~~		~~**UNASYN FTBL**~~	~~01~~	~~p.o~~	~~2 x 2 Tbl~~	~~€~~	~~Resorption: 80%~~
Ampicillin und Sulbactam		**UNASYN TRSTAMP 3G**	01	i.v.	2-3 x 3g	€€	
~~Amoxicillin und Clavulansäure~~		~~**XICLAV FTBL 1G**~~	~~01~~	~~p.o~~	~~2 x 1 g~~	~~€~~	~~Resorption: 80%, zu Beginn d. Mahlzeit~~
Amoxicillin und Clavulansäure		**XICLAV QUICKTAB TBL 1G**	01	i.v.	2 x 1 g	€	Resorption: 70%, zu Beginn d. Mahlzeit
Piperacillin und Tazobactam		**PIPERA/TAZO.KAB 4/0,5G DFL**	01	i.v.	3 x 4/0,5g	€€€	bei NI: Dosisintervallverlängerung
Andere BETALAKTAM ANTIBIOTIKA			01				
Cephalosporine			01				
Cefalexin	1.Gen.	**OSPEXIN FTBL 1000MG**	01	p.o	3 x 1g	€	Resorption: 90%, unabh. v. Mahlzeit
Cefazolin	1.Gen.	**KEFZOL TRSUB IBER 2G IFL**	01	i.v.	1 x periop.	€	
Cefuroximaxetil	2.Gen	**ZINNAT FTBL 500MG**	01	p.o	2 x 0,5g	€	Resorption: 55%, kurz n. d. Mahlzeit
Cefuroxim	2.Gen	**CEFUROXIM FRE 1500MG/50ML**	01	i.v.	3 x 1,5g	€€	
Cefpodoxim-proxetil	3.Gen	**BIOCEF FTBL 200MG**	03	p.o	2 x 1	€	Resorption: 50%, zu einer Mahlzeit
Cefotaxim	3.Gen	**CEFOTAXIM MIP PLV DFL 2G**	01	i.v.	3 x 2g	€	
Ceftazidim	3.Gen	**FORTUM TRSTAMP 2G**	01	i.v.	3 x 2g	€€€	
Ceftriaxon	3.Gen	**CEFTRIAXON KAB 2G DFL**	01	i.v.	1 x 2g	€€	
Cefepime	4.Gen	**CEFEPIM MIP PLV DFL 2G**	01	i.v.	2 x 2g	€€	

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JANUARY 31, 2019 VOL. 380 NO. 5

Partial Oral versus Intravenous Antibiotic Treatment of Endocarditis

Kasper Iversen, M.D., D.M.Sc., Nikolaj Ihlemann, M.D., Ph.D., Sabine U. Gill, M.D., Ph.D., Trine Madsen, M.D., Ph.D., Hanne Elming, M.D., Ph.D., Kaare T. Jensen, M.D., Ph.D., Niels E. Bruun, M.D., D.M.Sc., Dan E. Høfsten, M.D., Ph.D., Kurt Fursted, M.D., D.M.Sc., Jens J. Christensen, M.D., D.M.Sc., Martin Schultz, M.D., Christine F. Klein, M.D., Emil L. Fosbøll, M.D., Ph.D., Flemming Rosenvinge, M.D., Henrik C. Schønheyder, M.D., D.M.Sc., Lars Køber, M.D., D.M.Sc., Christian Torp-Pedersen, M.D., D.M.Sc., Jannik Helweg-Larsen, M.D., D.M.Sc., Niels Tønder, M.D., D.M.Sc., Claus Moser, M.D., Ph.D., and Henning Bundgaard, M.D., D.M.Sc.

- In a randomized, noninferiority, multicenter trial; 400 adults in stable condition -endocarditis on the left side: streptococcus, Enterococcus faecalis, Staphylococcus aureus, or coagulase-negative staphylococci; continue intravenous treatment (199 patients) or to switch to oral antibiotic treatment (201 patients).
- All patients: antibiotic treatment was administered intravenously for at least 10 days. The primary outcome was a composite of all-cause mortality, unplanned cardiac surgery, embolic events, or relapse of bacteremia with the primary pathogen, from the time of randomization until 6 months after antibiotic treatment was completed.
- RESULTS
- Treatment was completed after a median of 19 days iv group and 17 days orally treated group (P = 0.48).
- Primary composite outcome: 24 patients (12.1%) in the iv group and in 18 (9.0%) in the oral group which met noninferiority criteria.

Penicillin and methicillin sensitive *Staphylococcus aureus* and coagulase-negative staphylococci:

1) Amoxicillin 1 g x 4 and fusidic acid 0.75 g x 2
2) Amoxicillin 1 g x 4 and rifampicin 0.6 g x 2
3) Linezolid 0.6 g x 2 and fusidic acid 0.75 g x 2
4) Linezolid 0.6 g x 2 and rifampicin 0.6 g x 2

Methicillin sensitive *Staphylococcus aureus* and coagulase-negative staphylococci

1) Dicloxacillin 1 g x 4 and fusidic acid 0.75 g x 2
2) Dicloxacillin 1 g x 4 and rifampicin 0.6 g x 2
3) Linezolid 0.6 g x 2 and fucidic acid 0.75g x 2
4) Linezolid 0.6 g x 2 and rifampicin 0.6 g x 2

Methicillin resistant coagulase-negative staphylococci

1) Linezolid 0.6 g x 2 and fusidic acid
2) Linezolid 0.6 g x 2 and rifampicin 0.6 g x2

Enterococcus faecalis:

1) Amoxicillin 1 g x 4 and rifampicin 0.6 g x 2
2) Amoxicillin 1 g x 4 and moxifloxacin 0.4 g x 1
3) Linezolid 0.6 g x 2 and rifampicin 0.6 g x 2
4) Linezolid 0.6 g x 2 and moxifloxacin 0.4 g x 1

Streptococci with a minimal inhibitory concentration for penicillin of <1 mg/L:

1) Amoxicillin 1 g x 4 and rifampicin 0.6 g x 2
2) Linezolid 0.6 g x 2 and rifampicin 0.6 g x 2
3) Linezolid 0.6 g x 2 and moxifloxacin 0.4 g x1

Streptococci with a minimal inhibitory concentration for penicillin of ≥1 mg/L:

1) Linezolid 0,6 g x2 and rifampicin 0.6 g x 2
2) Moxifloxacin 0.4 g x 1 and rifampicin 0.6 g x 2
3) Moxifloxacin 0.4 g x 1 and clindamycin 06 g x3

Gruppe 2

Perioperative Prophylaxe

The New England
Journal of Medicine

Volume 307 DECEMBER 30, 1982 Number 27

RISK FACTORS FOR INFECTION AT THE OPERATIVE SITE AFTER ABDOMINAL OR VAGINAL HYSTERECTOMY

MERVYN SHAPIRO, M.B., CH.B., ALVARO MUÑOZ, PH.D., IRA B. TAGER, M.D., M.P.H., STEPHEN C. SCHOENBAUM, M.D., M.P.H., AND B. FRANK POLK, M.D., M.S.

Abstract We studied risk factors for postoperative infections at the operative site after hysterectomies. Data were collected prospectively on all women undergoing vaginal hysterectomies (323 patients) or abdominal hysterectomies (1125 patients) at the Boston Hospital for Women between February 1976 and April 1978. Logistic-regression analysis indicated that factors significantly associated ($P<0.05$) with a higher risk of infection at the operative site were increased duration of operation, lack of antibiotic prophylaxis, younger age, being a clinic patient, and an abdominal approach. After these variables were accounted for, the variables of obesity, preoperative functional and anatomical diagnoses, postoperative anatomical and pathological diagnoses, estimated blood loss, menopausal status, and operation by a specific surgeon did not add predictive power. An increasing duration of operation was associated with a decreasing effect of antibiotic prophylaxis, the preventive fraction of which diminished from 80 per cent at one hour to an unmeasurable effect at 3.3 hours. (N Engl J Med. 1982; 307:1661-6.)

Risikoreduktion durch Antibiotikaprophylaxe

	OR ⇩	NNT
Senkung der SSI		
„Sauber-kontaminierte“ Eingriffe		
Offene Gallenchirurgie	0.30	10
Colorectale Chirurgie	0.37	5
„Saubere“ Eingriffe		
Schrittmacher	0.26	34
Offene Herzchirurgie	0.20	14
Craniotomie	0.18	14
Senkung der Letalität		
Colorectale Chirurgie	0.38	17

SIGN 2000

Prinzipielle Indikationen für AB-Prophylaxe (POP)

- Wundkategorie sauber:
  NEIN außer bei hoher Morbidität/Letalität nach einer Wundinfektion
  - Neurochirurgie
  - Orthopädie
  - Gefäß- und Cardiochirurgie
  - Fremdkörperimplantationen
  - Adjuvante Chirurgie bei Onkologischen Patienten
  - Revisionen
- Wundkategorien sauber/kontaminiert & kontaminiert: JA
- Wundkategorie schmutzig/infiziert: NEIN, AB = THERAPIE!

Wahrscheinliche Erreger bei SSI

Operations	Likely Pathogens[†‡]
Placement of all grafts, prostheses, or implants	*Staphylococcus aureus;* coagulase-negative staphylococci
Cardiac	*S. aureus;* coagulase-negative staphylococci
Neurosurgery	*S. aureus;* coagulase-negative staphylococci
Breast	*S. aureus;* coagulase-negative staphylococci
Ophthalmic	*S. aureus;* coagulase-negative staphylococci; streptococci
Limited data; however, commonly used in procedures such as anterior segment resection, vitrectomy, and scleral buckles	gram-negative bacilli
Orthopedic	*S. aureus;* coagulase-negative staphylococci; gram-negative bacilli
Total joint replacement	
Closed fractures/use of nails, bone plates, other internal fixation devices	
Functional repair without implant/device	
Trauma	
Noncardiac thoracic	*S. aureus;* coagulase-negative staphylococci; *Streptococcus pneumoniae;* gram-negative bacilli
Thoracic (lobectomy, pneumonectomy, wedge resection, other noncardiac mediastinal procedures)	
Closed tube thoracostomy	
Vascular	*S. aureus;* coagulase-negative staphylococci
Appendectomy	Gram-negative bacilli; anaerobes
Biliary tract	Gram-negative bacilli; anaerobes
Colorectal	Gram-negative bacilli; anaerobes
Gastroduodenal	Gram-negative bacilli; streptococci; oropharyngeal anaerobes (e.g., peptostreptococci)
Head and neck (major procedures with incision through oropharyngeal mucosa)	*S. aureus;* streptococci; oropharyngeal anaerobes (e.g., peptostreptococci)
Obstetric and gynecologic	Gram-negative bacilli; enterococci; group B streptococci; anaerobes
Urologic	Gram-negative bacilli
May not be beneficial if urine is sterile	

CDC Guideline Prevention of SSI Malgram ICHE 2009

JAMA Surgery | Original Investigation
JAMA Surg. doi:10.1001/jamasurg.2019.0569
Published online April 24, 2019.

Association of Duration and Type of Surgical Prophylaxis With Antimicrobial-Associated Adverse Events

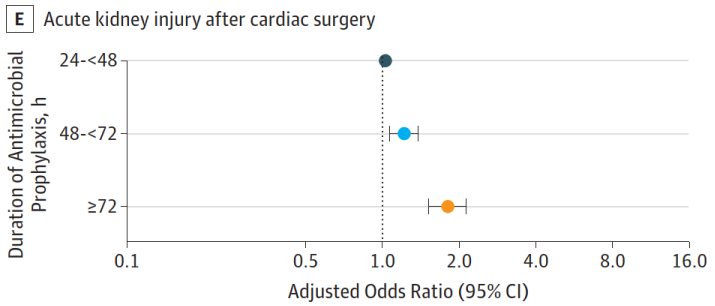
Westyn Branch-Elliman, MD, MMSc; William O'Brien, MS; Judith Strymish, MD; Kamal Itani, MD; Christina Wyatt, MD; Kalpana Gupta, MD, MPH

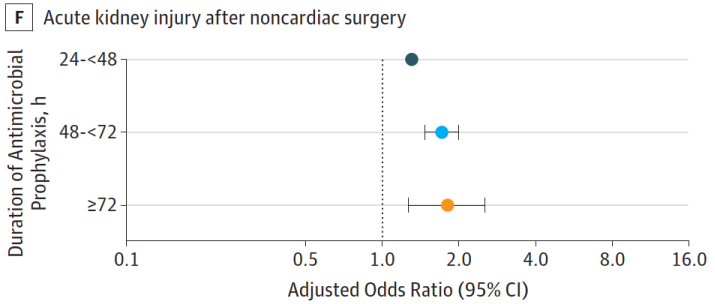
- VA, multicenter retrospektive Kohortenstudie, n= 79058
- Herz & Gefäße, Colon, Orthopädie
- SSI: Keine Abnahme bei verlängerter Gabe
- AKI: Zunahme mit jedem zusätzlichen Tag AB
- CDI: Ähnliche Zeit-abhängige Assoziation

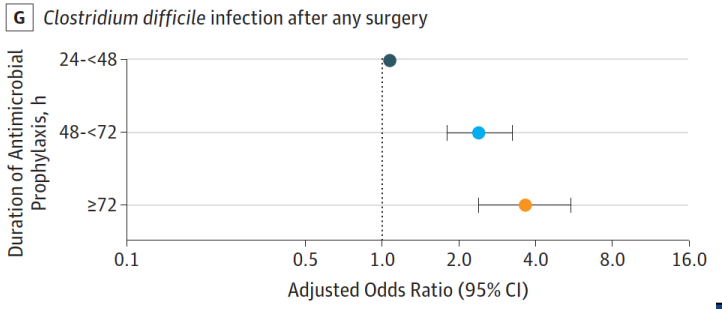
- NNT to Harm für

	AKI	CDI
• 24 < 48 h	9	2000
• 48 < 72 hs	6	90
• 72 hs or >	4	50

Jeder Tag — und jede Dosis — zählt







foerdoes.antibioticstewardship@gmail.com

A single antibiotic dose is enough to cause CDAD

Volunteers undergoing elective clean surgery randomized to receive a single 2 g dose of various antibiotics and then cultured for *C. difficile* on post-op days 4, 7, 14 (Privitera *AAC* 1991)

Antibiotic	*n*	% *C. difficile* +
none	15	0
mezlocillin	30	3
cefoxitin	12	8
cefazolin	14	14
cefotetan	20	20
ceftriaxone	12	25
cefoperazone	16	44

Gruppe 3

Tab. 7 Interpretation von Sputumkulturen. Häufige und seltene Erreger ambulant erworbener Pneumonien bei Diagnostik aus dem Sputum.

Häufige und mögliche Erreger	Seltene Erreger	Keine Erreger
– *Streptococcus pneumoniae* – *Haemophilus influenzae* – *Staphylococcus aureus*	– Enterobakterien (*E. coli*, *K. pneumoniae*, *Proteus mirabilis*) – *Pseudomonas aeruginosa*	– vergrünend wachsende Streptokokken – *Staphylococcus epidermidis* und andere koagulase-negative Staphylokokken – Enterokokken – Corynebakterien – Neisserien (außer (sehr selten) *N. meningitidis*) – *Haemophilus spp.* (außer *H. influenzae*)[1] – *Candida spp.*

[1] *H. parainfluenzae* kann in seltenen Fällen Erreger der ambulant erworbenen Pneumonie sein.

Tab. 9 Die definierten Zeichen der klinischen Stabilität [186].

Zeichen der klinischen Stabilität	
Herzfrequenz	≤ 100/min
Atemfrequenz	≤ 24/min
systolischer Blutdruck	≥ 90 mmHg
Körpertemperatur	≤ 37,8 °C
gesicherte Nahrungsaufnahme	oral oder sichere Zugänge
Bewusstseinszustand	normal bzw. Wiedererreichen des vorbestehenden Zustands bei ZNS-Erkrankungen
keine Hypoxämie	$pO_2 \geq 60$ mmHg bzw. $SaO_2 \geq 90$ % unter Raumluft bzw. (bei Patienten mit Sauerstoffpflichtigkeit) unter Sauerstoffgabe

E25 Patienten mit mittelschwerer Pneumonie sollen als initiale kalkulierte antimikrobielle Therapie eine Aminopenicillin/BLI-Kombination oder ein Cephalosporin der Klasse 2 oder 3a, ggf. mit Makrolid erhalten. Werden bei klinischer Stabilisierung keine atypischen bakteriellen Erreger nachgewiesen, soll die ggf. begonnene Makrolidtherapie nach 3 Tagen beendet werden. Alternativ kann bei Patienten mit moderater ambulant erworbener Pneumonie eine Therapie mit einem Fluorchinolon (Moxifloxacin, Levofloxacin) erfolgen. Starke Empfehlung, Evidenz B.

E27 Patienten mit schwerer Pneumonie sollen initial kalkuliert eine intravenöse Kombinationstherapie aus einem β-Laktam mit breitem Spektrum (Piperacillin/Tazobactam, Cefotaxim oder Ceftriaxon) und einem Makrolid erhalten. Bei klinischer Stabilisierung und fehlendem Nachweis eines atypischen bakteriellen Erregers soll die Makrolidtherapie nach 3 Tagen beendet werden. Die Monotherapie mit einem Fluorchinolon (Moxifloxacin, Levofloxacin) ist eine mögliche Alternative, dies gilt jedoch nur für Patienten ohne septischen Schock. Starke Empfehlung, Evidenz B.

Tab. 11 Empfehlungen zur initialen kalkulierten antimikrobiellen Therapie von Patienten mit ambulant erworbener Pneumonie.

Schweregradklasse	Primärtherapie		Alternativtherapie
leichte Pneumonie ohne Komorbidität (orale Therapie)	Amoxicillin		Moxifloxacin, Levofloxacin Clarithromycin, Azithromycin Doxycyclin
leichte Pneumonie mit Komorbidität (orale Therapie) – chronische Herzinsuffizienz – ZNS-Erkrankungen mit Schluckstörungen – schwere COPD, Bronchiektasen – Bettlägerigkeit, PEG	Amoxicillin/Clavulansäure		Moxifloxacin, Levofloxacin
mittelschwere Pneumonie (in der Regel Sequenztherapie)	Amoxicillin/Clavulansäure Ampicillin /Sulbactam Cefuroxim Ceftriaxon Cefotaxim	+/− Makrolid für 3 Tage +/− Makrolid für 3 Tage +/− Makrolid für 3 Tage +/− Makrolid für 3 Tage +/− Makrolid für 3 Tage	Moxifloxacin, Levofloxacin
schwere Pneumonie (Beginn immer i. v., Sequenztherapie prinzipiell möglich)	Piperacillin/Tazobactam Ceftriaxon Cefotaxim	jeweils + Makrolid für 3 Tage	Moxifloxacin, Levofloxacin (Monotherapie nicht bei septischem Schock)

The NEW ENGLAND JOURNAL of MEDICINE

N ENGL J MED 372;14 NEJM.ORG APRIL 2, 2015

ORIGINAL ARTICLE

Antibiotic Treatment Strategies for Community-Acquired Pneumonia in Adults

Douwe F. Postma, M.D., Cornelis H. van Werkhoven, M.D., Leontine J.R. van Elden, M.D., Ph.D., Steven F.T. Thijsen, M.D., Ph.D., Andy I.M. Hoepelman, M.D., Ph.D., Jan A.J.W. Kluytmans, M.D., Ph.D., Wim G. Boersma, M.D., Ph.D., Clara J. Compaijen, M.D., Eva van der Wall, M.D., Jan M. Prins, M.D., Ph.D., Jan J. Oosterheert, M.D., Ph.D., and Marc J.M. Bonten, M.D., Ph.D., for the CAP-START Study Group*

CONCLUSIONS

Among patients with clinically suspected CAP admitted to non-ICU wards, a strategy of preferred empirical treatment with beta-lactam monotherapy was noninferior to strategies with a beta-lactam–macrolide combination or fluoroquinolone monotherapy with regard to 90-day mortality. (Funded by the Netherlands Organization for Health Research and Development; CAP-START ClinicalTrials.gov number, NCT01660204.)

5.3 Therapiedauer

E34 Bei der leichten bis mittelschweren Pneumonie soll die Dauer der antimikrobiellen Therapie 5 – 7 Tage betragen. Kürzere Therapien sind möglich bei rascher klinischer Stabilisierung. Vor Therapieende soll eine klinische Stabilisierung für mindestens 2 Tage erfolgt sein. Starke Empfehlung, Evidenz A.

E35 Bei schwerer Pneumonie sollte ebenfalls eine klinische Stabilisierung für mindestens 2 Tage erfolgt sein, bevor die antimikrobielle Therapie beendet wird – entsprechend einer Behandlungsdauer, die in der Regel nicht länger als 7 Tage sein sollte. Moderate Empfehlung, Evidenz B.

E36 Bei der mittelschweren Pneumonie soll nach klinischer Besserung (besserer Allgemeinzustand, Entfieberung, Reduktion Entzündungsparameter) eine orale Sequenztherapie durchgeführt werden. Starke Empfehlung, Evidenz A.

E37 Bei der schweren Pneumonie sollte initial für mindestens 3 Tage eine parenterale Behandlung erfolgen, eine anschließende Sequenztherapie ist auch hier möglich. Moderate Empfehlung, Evidenz B

E38 Eine PCT-gesteuerte Strategie zur Bestimmung der Therapiedauer im individuellen Fall kann in erfahrenen Zentren eingesetzt werden. Schwache Empfehlung, Evidenz A.

Tab. 15 Ergebnisse wichtiger Studien zur Biomarker-gesteuerten Bestimmung der Therapiedauer.

Autor	Pneumonieschweregrad	Protokoll	Stopp-Empfehlung	Ergebnis
[269]	leicht ambulant behandelt	PCT-Bestimmung an Tagen 1, kurzfristige Kontrolle binnen 6 – 24 h sowie 4, 6, 8	Therapieende bei Spiegeln ≤ 0,25 µg/L	mediane Verkürzung der Therapiedauer von 7 auf 5 Tage kein Unterschied im Therapieergebnis
[270]	leicht bis mittelschwer hospitalisiert	PCT-Bestimmung an Tagen 1, kurzfristige Kontrolle binnen 6 – 24 h sowie 4, 6, 8	Therapieende bei Spiegeln ≤ 0,25 µg/L bei hohen Spiegeln Abfall ≥ 90 %	mediane Verkürzung der Therapiedauer von 12 auf 5 Tage kein Unterschied im Therapieergebnis
[271]	schwer	PCT-Bestimmung täglich	Therapieende bei Spiegeln < 0,5 µg/L oder Spiegelabfall > 80 % des höchsten Spiegels	Verkürzung der Therapiedauer von 10,5 auf 5,5 Tage kein Unterschied im Therapieergebnis

Gruppe 4

Concise Communication

Improved mortality in *Staphylococcus aureus* bacteremia with the involvement of antimicrobial stewardship team and infectious disease consultation

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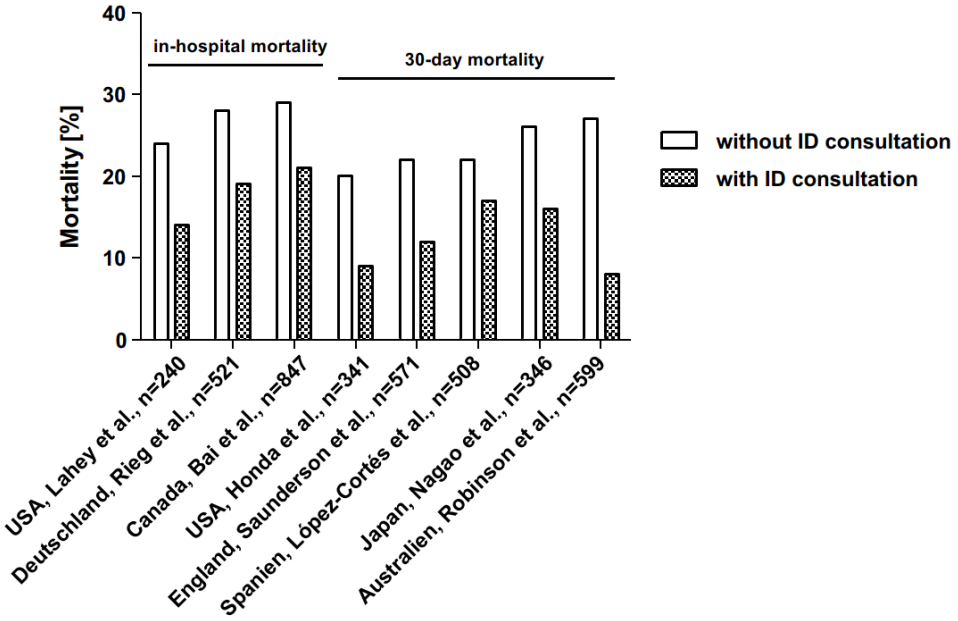
Abstract

A retrospective study was conducted to evaluate the value of the antimicrobial stewardship team (AST) combined with infectious diseases consultation (IDC) on management and outcomes of *Staphylococcus aureus* bacteremia (SAB) in a tertiary-care academic center. Involvement of AST or IDC was associated with reduced mortality of SAB.

S. Rieg, M. F. Küpper

Fig. 1 Impact of infectious diseases (ID) consultations on all-cause mortality of patients with *S. aureus* bacteremia in cohort studies of different countries. Significantly reduced all-cause mortality of SAB patients that were consulted by ID physicians. Lahey et al. [5], Rieg et al. [8] and Bai et al. [3] analysed in-hospital mortality; Honda et al. [4], Saunderson et al. [10], López-Cortés et al. [6], Nagao et al. [7] and Robinson et al. [9] day-30 mortality (or day-28 mortality)



Infection
DOI 10.1007/s15010-016-0883-1

Clinical Infectious Diseases

MAJOR ARTICLE

IDSA Infectious Diseases Society of America | hivma hiv medicine association | OXFORD

Clinical Infectious Diseases® **2019;69(3):381–7**

Early Oral Switch to Linezolid for Low-risk Patients With *Staphylococcus aureus* Bloodstream Infections: A Propensity-matched Cohort Study

Rein Willekens,[1,2] Mireia Puig-Asensio,[1,2] Isabel Ruiz-Camps,[1,2] Maria N. Larrosa,[3] Juan J. González-López,[3] Dolors Rodríguez-Pardo,[1,2] Nuria Fernández-Hidalgo,[1,2] Carles Pigrau,[1,2] and Benito Almirante[1,2]

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Background. Oral switch to linezolid is a promising alternative to standard parenteral therapy (SPT) in *Staphylococcus aureus* bacteremia (SAB).

Results. After propensity score matching, we included 45 patients from the linezolid group and 90 patients from the SPT group. Leading SAB sources were catheter related (49.6%), unknown origin (20.0%), and skin and soft tissue (17.0%). We observed no difference in 90-day relapse between the linezolid group and the SPT group (2.2% vs 4.4% respectively; $P = .87$). No statistically significant difference was observed in 30-day all-cause mortality between the linezolid group and the SPT group (2.2% vs 13.3%; $P = .08$). The median length of hospital stay after onset was 8 days in the linezolid group and 19 days in the SPT group ($P < .01$). No drug-related events leading to discontinuation were noted in the linezolid group.

Conclusions. Treatment of SAB in selected low-risk patients with an oral switch to linezolid between days 3 and 9 of treatment until completion yielded similar clinical outcomes as SPT, allowing earlier discharge from the hospital.

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- Standard parenterale Therapie (n=45) vs oraler Switch d 3-9 (n=90)
- Outcome 90d Relapse & Dauer der Hospitalisation

Table 2. Outcomes in Adult Patients With *Staphylococcus aureus* Bacteremia Comparing Treatment With Early Oral Switch to Linezolid and Standard Parenteral Treatment

	Whole Cohort			Propensity Score–matched Cohort		
Outcome	Oral Linezolid (n = 45)	Standard Treatment (n = 107)	*P* Value	Oral Linezolid (n = 45)	Standard Treatment (n = 90)	*P* Value
90-d relapse in survivors	1 (2.2)	4 (3.7)	1.00	1 (2.2)	4 (4.4)	.87
14-d mortality	0 (0.0)	10 (9.3)	.08	0 (0.0)	6 (6.7)	.18
30-d mortality	1 (2.2)	17 (15.9)	.04	1 (2.2)	12 (13.3)	.08
Length of hospital stay after index culture, d, median (IQR)[a]	8 (7–10)	19 (15–32)	<.01	8 (7–10)	19 (15–30)	<.01

Dalbavancin

EINSATZ ALS EINMALGABE MIT 1500MG

Einsatz als **Einmalgabe 1500mg**	A Randomized Clinical Trial of Single-Dose Versus Weekly Dalbavancin for Treatment of Acute Bacterial Skin and Skin Structure Infection Michael W. Dunne,[1] Sailaja Puttagunta,[1] Philip Giordano,[2] Dainis Krievins,[3] Michael Zelasky,[1] and James Baldassarre[4] [1]Allergan plc, Branford, Connecticut; [2]Orlando Health, Florida; [3]Stradins University Hospital, Riga, Latvia; and [4]Janssen Pharmaceuticals, Springhouse, Pennsylvania

objective: dalbavancin 1500 mg either as a single intravenous (IV) infusion or 1000 mg IV on day 1 followed 1 week later by 500 mg IV

→ single 1500-mg infusion of dalbavancin **is noninferior** to a 2-dose regimen with a similar safety profile

	Dalbavancin Treatment Group	
Timepoint	Single-Dose, no./No. (%)	2-Dose, no./No. (%)
48–72 h		
Treatment response (ITT)	284/349 (81.4)	294/349 (84.2)
Day 14		
Clinical success (ITT)	293/349 (84.0)	296/349 (84.8)
Clinical success (CE)	267/302 (88.4)	270/302 (89.4)

Quelle: Dunne et al CID 2016;62:545

Efficacy and Safety of Weekly Dalbavancin Therapy for Catheter-Related Bloodstream Infection Caused by Gram-Positive Pathogens

Clinical Infectious Diseases 2005; 40:374–80

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[1]The M. D. Anderson Cancer Center and [2]Veterans Affairs Medical Center, Houston, Texas; [3]Harper University Hospital, Detroit, Michigan; [4]Wellstar/Kennestone Hospital, Marietta, Georgia; and [5]Vicuron Pharmaceuticals, King of Prussia, Pennsylvania

Background. Catheter-related bloodstream infections (CR-BSIs) are associated with substantial mortality, prolongation of hospital stay, and increased cost of care. Dalbavancin, a new glycopeptide antibiotic with unique pharmacokinetic properties that have allowed clinical development of a weekly dosing regimen, possesses excellent activity against clinically important gram-positive bacteria, suggesting utility in the treatment of patients with CR-BSIs.

Methods. A phase 2, open-label, randomized, controlled, multicenter study of 75 adult patients with CR-BSIs compared treatment with intravenous dalbavancin, administered as a single 1000-mg dose followed by a 500-mg dose 1 week later, with intravenous vancomycin, administered twice daily for 14 days. Gram-positive bacteria isolated in this study included coagulase-negative staphylococci (CoNS) and *Staphylococcus aureus*, including methicillin-resistant *S. aureus* (MRSA).

Results. Infected patients who received weekly dalbavancin ($n = 33$) had an overall success rate (87.0%; 95% confidence interval [CI], 73.2%–100.0%) that was significantly higher than that of those who received vancomycin ($n = 34$) (50.0%; 95% CI, 31.5%–68.5%). Adverse events and laboratory abnormalities were generally mild and were comparable for the 2 drugs.

Conclusions. Dalbavancin thus appears to be an effective and well-tolerated treatment option for adult patients with CR-BSIs caused by CoNS and *S. aureus*, including MRSA.