Therapiedauer bei wichtigen Infektionen

PEG Frühjahrstagung, 28.4.2025

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hoch Health Ostschweiz

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Kurze Antibiotikatherapie

Vorteile

- ✓↓ Risiko für Antibiotika-Resistenz
- ✓↑ Adhärenz
- ✓↓ Kosten
- ✓↓ Nebenwirkungen
- ✓↓ Auswirkungen auf Mikrobiom

Nachteile, Risiken

- – Therapieversagen?
- – Mortalität?
- – Relaps?

Was beeinflusst die Therapiedauer?

-Pathogen -Schweregrad -Komorbiditäten

-Antibiotikum -Dosis/Applikation -Source control -Therapieansprechen

***Traditionell* eher längere Therapiedauer bevorzugt, *modern* eher kürzer**

Wie kurz ist lang genug?

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Kurze Therapiedauer der Pneumonie (CAP)? Was war vor PubMed?

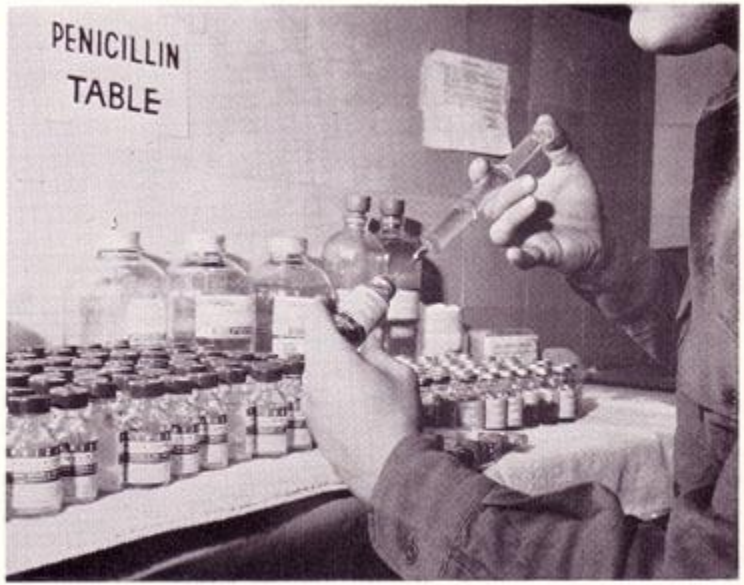


FIGURE 112.—Standard preparation of penicillin for use. Distilled water, 10 cc., is added to sealed vials containing 100,000 Oxford units of sodium penicillin.

monia with penicillin. In a 1943 report on treating 500 patients with penicillin, Keefer et al. [22], referring to the subset of patients with pneumococcal pneumonia, stated, "It is plain from the reported cases that…many patients have recovered on less than 100,000 units given over a period of two to three days." Dawson and Hobby [23], in their 1944 report on treating 100 patients with penicillin, stated that "In general, the results were satisfactory with doses of 10,000 units every four hours for one and a half to two days." In another 1944 report, Tillett et al. [24] stated that it may be seen that "most of the patients, 31, were treated for 3 to 4 days. Among this group, when no complicating factors [primarily empyema an underlying chronic obstructive pulmonary disease] existed, the initial improvement persisted as permanent cure."

Rice. CID 2008;46:491-6

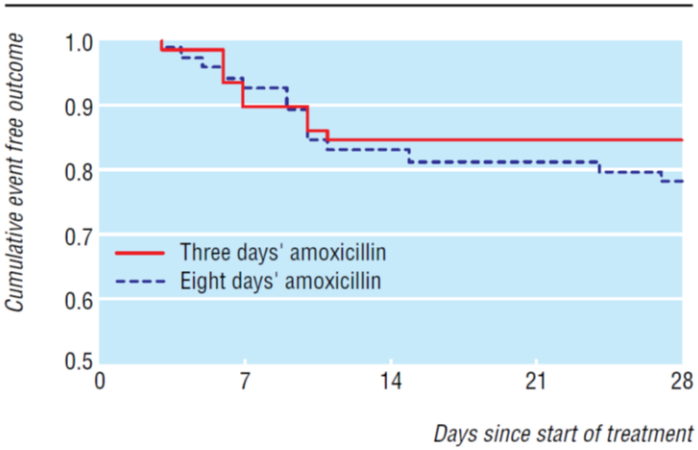
Kurze Therapie: berechtigte Zweifel ?
Beginn einer *"langen" Geschichte* ...

In 1945, Meads and Finland [25] treated patients with pneumococcal pneumonia "until there was definite clinical improvement and the temperature had remained below 100°F for 12 hours…then given for another two or three days." Forty-four of 54 patients in this study survived. Of the 44 who survived, 2 relapsed. One relapsed with the same pneumococcal serotype after receiving only 24 h of therapy. The other relapsed 10 days after treatment, with an organism of a different serotype. Despite this remarkable success, these relapses weighed heavily on the authors, leading them to suggest, "The need for continuing treatment even after the fever and symptoms subside is suggested by the relapses that have occurred in this series."

Rice. CID 2008;46:491-6

Therapiedauer CAP: 3d ~ 8d

- 2 Multizentr., plazebo-kontrollierte, doppelblinde RCT: NL, F:
- Erwachsene, hospitalisiert mit mittelschwerer CAP (keine ICU), **nach 3 d iv β-Lactam stabil**, randomisiert:
  - Amoxicillin oder Co-Amoxicillin po x 5d vs.
  - Placebo
- **1° EP: Heilung 15 d nach Therapiestart (afebril, Resolution od. Besserung von resp. Symptome, keine Antibiotika)**



El Moussaoudi et al. BMJ 2006;332:1355-60

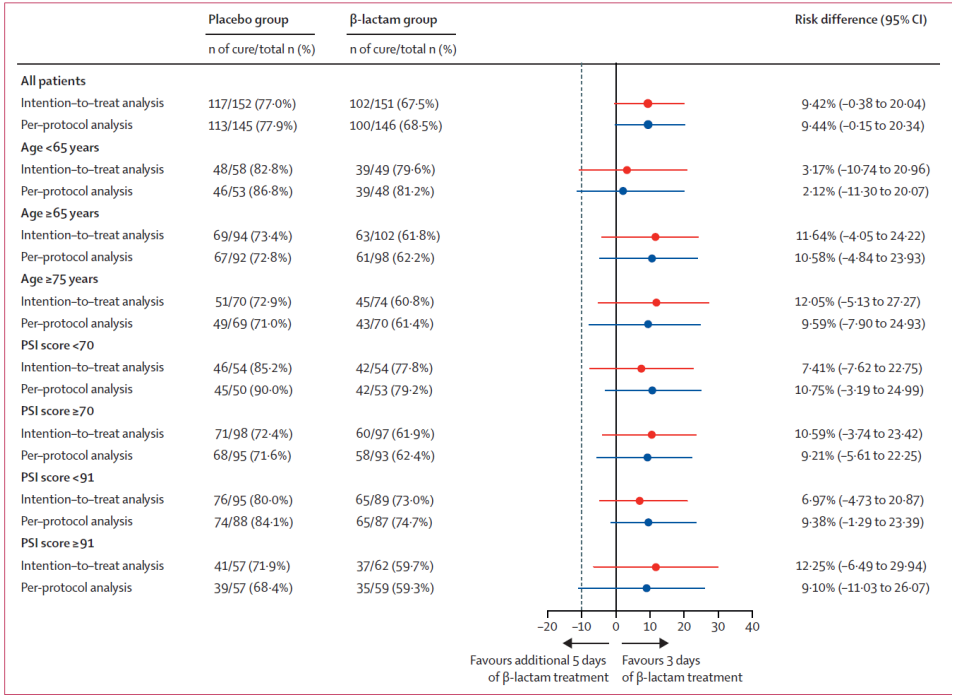
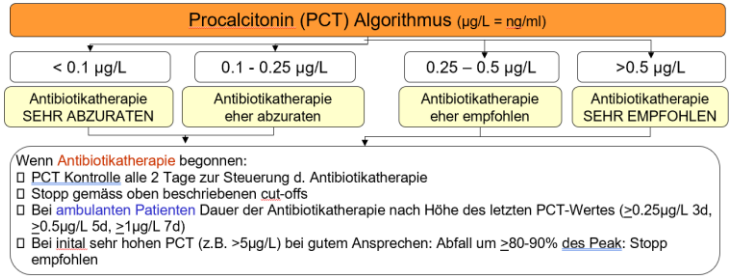


Figure 2: Primary outcome of cure at day 15, in the intention-to-treat and per-protocol population, and post-hoc subgroup analyses

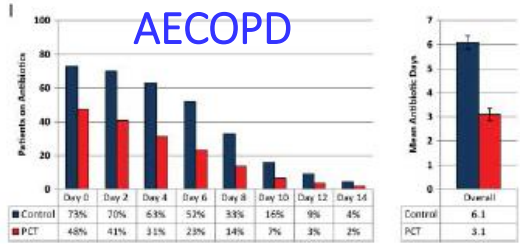
	Placebo group	β-lactam group	Difference	p value
Cure at day 30				
ITT analysis	109/152 (72%)	109/151 (72%)	–0·47 (–11·31 to 9·98)	>0·99
Per-protocol analysis	105/141 (74%)	107/141 (76%)	–1·42 (–12·08 to 9·20)	0·89
Mortality at day 30	3/152 (2%)	2/151 (1%)	0·60 (–3·50 to 4·40)	>0·99

Dinh et al. Lancet 2021;397:1195-203

PCT bei RTI



- Individuelle Patienten Meta-Analyse:
- Kein Unterschied
  - Mortalität
  - Therapieversagen
- Weniger AB Gebrauch



Schuetz et al. CID 2012;55:651-62

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Therapiedauer CAP

S3-Leitlinie, 2021 (D, A, CH)

- Leicht - mittelschwer: **5d und ≥ 2d stabil**
- Kürzere Therapie möglich bei gutem klin. Ansprechen
- Schwer (> 2 Minorkriterien od. system. Hypotonie m. Vasopressoren, Beatmung): ≥ 3d iv; total 7d und ≥ 2d stabil
- PCT-Steuerung (erfahrene Zentren)

✓ Wechsel auf po wenn stabil

- Orale Ernährung und Medikamenteneinnahme möglich
- BD syst. ≥ 90mmHg
- Puls ≤ 100/min
- Atemfrequenz ≤ 24/min
- O2-Sättigung ≥ 90% oder pO2 ≥ 60mmHg
- Kognitive Fähigkeiten wie vor CAP

IDSA (2019)	ERS/ESCMID (2011) ERS/ESICM/ESCMID/ALAT: schwere CAP (2023)	BTS (2015) / NICE (2019)	Schwedisch (2025)
• ≥ 5d • 48-72h lang afebril • Länger bei Komplikationen • Wechsel auf po wenn stabil	• ≤ 8d • Kürzer je nach Biomarker, v.a. PCT • po wenn afebril / stabil • Schwer (ICU): nach klin. Stabilität (i.d.R. 5-7d)	• 5d • Schwer: 7-10d • *S. aureus*, Gram-neg.: 14-21d	• 5-7d • Schwer: 7d

CHEST Original Research
CRITICAL CARE

Short- vs Long-Duration Antibiotic Regimens for Ventilator-Associated Pneumonia

A Systematic Review and Meta-analysis

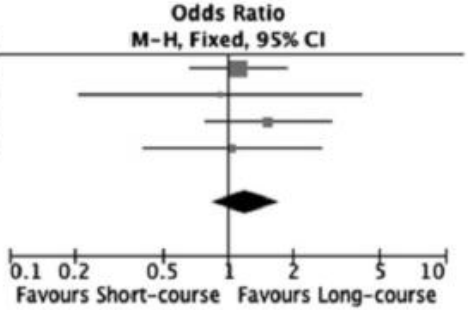
Dimopoulos et al. Chest 2013;144:1759-67

OR for mortality

7-8d **10-15d**

Study or Subgroup	Short-course Events	Total	Long-course Events	Total	Weight	Odds Ratio M-H, Fixed, 95% CI	Year
Chastre et al	37	197	35	204	51.6%	1.12 [0.67, 1.86]	2003
Fekih Hassen et al	5	14	6	16	6.7%	0.93 [0.21, 4.11]	2009
Kollef et al	26	115	18	112	26.1%	1.53 [0.78, 2.97]	2012
Capellier et al	10	116	9	109	15.7%	1.05 [0.41, 2.69]	2012
Total (95% CI)		442		441	100.0%	1.20 [0.84, 1.72]	
Total events	78		68				

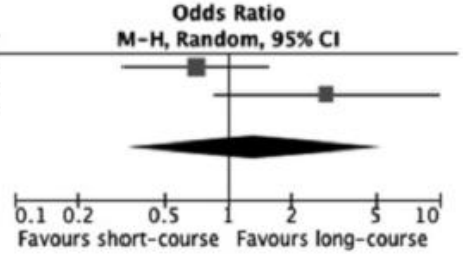
Heterogeneity: $Chi^2 = 0.77$, df = 3 (P = 0.86); $I^2 = 0\%$
Test for overall effect: Z = 0.99 (P = 0.32)



OR for mortality in patients with Gram-neg. non-Fermenters

Study or Subgroup	Short-course Events	Total	Long-course Events	Total	Weight	Odds Ratio M-H, Random, 95% CI	Year
Chastre et al	15	64	19	63	55.7%	0.71 [0.32, 1.56]	2003
Kollef et al	12	47	4	38	44.3%	2.91 [0.86, 9.93]	2012
Total (95% CI)		111		101	100.0%	1.33 [0.33, 5.26]	
Total events	27		23				

Heterogeneity: $Tau^2 = 0.73$; $Chi^2 = 3.62$, df = 1 (P = 0.06); $I^2 = 72\%$
Test for overall effect: Z = 0.40 (P = 0.69)



Short therapy: mehr AB-freie Tage (3.4d, p<0.001), Trend für mehr mikrobiolog. Rezidive (OR 1.7, p=0.06), **kein Unterschied für Mortalität, LOS / Beatmung**

Clinical Infectious Diseases

IDSA GUIDELINE

Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases Society of America and the American Thoracic Society

Andre C. Kalil,[1,a] Mark L. Metersky,[2,a] Michael Klompas,[3,4] John Muscedere,[5] Daniel A. Sweeney,[6] Lucy B. Palmer,[7] Lena M. Napolitano,[8] Naomi P. O'Grady,[9] John G. Bartlett,[10] Jordi Carratalà,[11] Ali A. El Solh,[12] Santiago Ewig,[13] Paul D. Fey,[14] Thomas M. File Jr,[15] Marcos I. Restrepo,[16] Jason A. Roberts,[17,18] Grant W. Waterer,[19] Peggy Cruse,[20] Shandra L. Knight,[20] and Jan L. Brozek[21]

XXI. Should Patients With VAP Receive 7 Days or 8–15 Days of Antibiotic Therapy?

Recommendation

1. For patients with VAP, we recommend a 7-day course of antimicrobial therapy rather than a longer duration *(strong recommendation, moderate-quality evidence)*.

Update der S3-Leitlinie:

Epidemiologie, Diagnostik und Therapie erwachsener Patienten mit nosokomialer Pneumonie

Epidemiology, diagnosis and treatment of adult patients with nosocomial pneumonia

Langversion 3.0- Januar 2024, AWMF-Registernummer: 020-013

Fördernummer beim Gemeinsamen Bundesausschuss (G-BA): 01VSF22007

Autoren: Jessica Rademacher, Santiago Ewig, Béatrice Grabein, Irit Nachtigall, Mathias Pletz, Marianne Abele-Horn, Maria Deja, Martina Gaßner, Sören Gatermann, Christine Geffers, Herwig Gerlach, Stefan Hagel, Claus Peter Heußel, Stefan Kluge, Martin Kolditz, Evelyn Kramme, Hilmar Kühl, Markus Panning, Peter-Michael Rath, Gernot Rohde, Bernhard Schaaf, Helmut Salzer, Dierk Schreiter, Hans Schweisfurth, Susanne Unverzagt, Markus A. Weigand, Tobias Welte

International ERS/ESICM/ESCMID/ALAT guidelines for the management of hospital-acquired pneumonia and ventilator-associated pneumonia

Guidelines for the management of hospital-acquired pneumonia (HAP)/ventilator-associated pneumonia (VAP) of the European Respiratory Society (ERS), European Society of Intensive Care Medicine (ESICM), European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and Asociación Latinoamericana del Tórax (ALAT)

Antoni Torres[1,16], Michael S. Niederman[2,16], Jean Chastre[3], Santiago Ewig[4], Patricia Fernandez-Vandellos[5], Hakan Hanberger[6], Marin Kollef[7], Gianluigi Li Bassi[1], Carlos M. Luna[8], Ignacio Martin-Loeches[9], J. Artur Paiva[10], Robert C. Read[11], David Rigau[12], Jean François Timsit[13], Tobias Welte[14] and Richard Wunderink[15]

We suggest using a 7–8-day course of antibiotic therapy in patients with VAP without immunodeficiency, cystic fibrosis, empyema, lung abscess, cavitation or necrotising pneumonia and with a good clinical response to therapy. (Weak recommendation, moderate quality of evidence.)

Die Therapiedauer **sollte** bei gutem Ansprechen des Patienten 7-8 Tage betragen. Im Einzelfall sind längere Therapiedauern erforderlich (z.B. *S. aureus* Bakteriämie, nicht sanierbares Empyem, Abszess).

Schwache Empfehlung, Empfehlungsgrad B

Individualised, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia (REGARD-VAP): a multicentre, individually randomised, open-label, non-inferiority trial

Yin Mo, Suchart Booraphun, Andrew Yunkai Li, Pornanan Domthong, Gyan Kayastha, Yie Hui Lau, Ploenchan Chetchotisakd, Direk Limmathurotsakul, Paul Anantharajah Tambyah, Ben S Cooper, on behalf of the REGARD-VAP investigators

- Open-label RCT, 39 ICUs, Nepal, Singapur, Thailand
- Randomisiert nach Entfieberung und hämodyn. Stabilität
- Erwachsene mit VAP, beatmet ≥ 48h

Short: mind 3-5 aber ≤ 7d: Ø 6 [5-7] d
Usual: ≥ 8d: Ø 14 [10-21] d

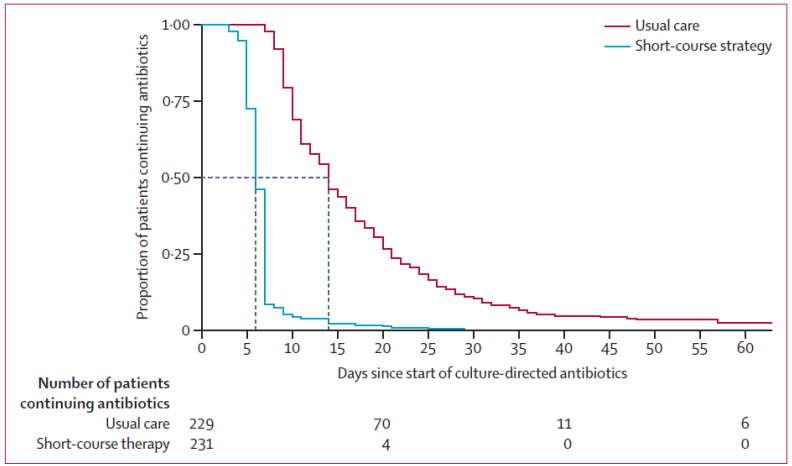


Figure 2: Duration of antibiotics received by study participants for the index episodes of VAP by allocation groups (intention-to-treat population)

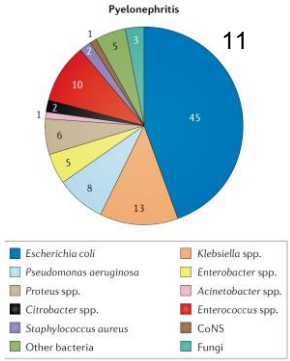
	Mortality (%)	Recurrence of pneumonia (%)	Primary outcome (%)	Unadjusted absolute risk difference (one-sided 95% CI)	Adjusted absolute risk difference (one-sided 95% CI)
Intention-to-treat (n=460)	..	..	..	−3%(−∞ to 5%)	−2%(−∞ to 5%)
Short-course group (n=231)	81 (35%)	33 (14%)	95 (41%)	..	..
Usual care group (n=229)	88 (38%)	30 (13%)	100 (44%)	..	..
Per-protocol (n=435)	..	..	..	−3%(−∞ to 5%)	−2%(−∞ to 4%)
Short-course group (n=211)	76 (36%)	29 (14%)	87 (41%)	..	..
Usual care group (n=224)	87 (39%)	30 (13%)	99 (44%)	..	..

Data are n (%) unless otherwise stated.

Table 2: Primary outcome: the composite endpoint of death or pneumonia recurrence within 60 days of enrolment

Mo et al. Lancet Resp Med 2024;12:399-408

Dauer der Antibiotikatherapie: Pyelonephritis



- Random. doppelblinde multizentr. Placebo-kontrollierte Studie
- Nicht-schwangere ♀ ≥ 18J., Fieber (≥ 38.0°C) und ≥ 1 Symptom eines HWI
- 26% Bakteriämien
- Ciprofloxacin 7 vs. 14 Tage

(per protocol)	Cipro 7d	Cipro 14d	Differenz (90% CI)	P (non-inferiority)
Kurzfristig (10-14d)				
Heilung	97%	96%	-0.9% (-6.5, 4.8%)	0.004
Klin. Versagen oder Rezidiv	3%	4%		
Langfristig (42-63d)				
Heilung	93%	93%	-0.3	0.015
Klin. Versagen oder Rezidiv	7%	7%		

Sandberg et al. Lancet 2012;380:484-90

7 Tage vermutlich auch mit den meisten Antibiotika möglich, auch bei Männern, auch bei Bakteriämie

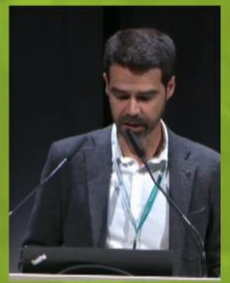
Eliakim-Raz et al. JAC 2013;68:2183-91

Febriler HWI beim Mann

Duration

Prostate is complicated…

	2021 JAMA, Drekonja	2017 BMC Med, Nieuwkoop	2023 CID, Lafaurie
Design	Non-inferiority double-blind RCT	Non-inferiority double-blind RCT	Non-inferiority double-blind RCT
Patients	Males with non-febrile UTI (culture not required)	Subgroup analysis of males with febrile UTI (culture not required)	Males with febrile UTI culture-proven, susceptible to FQ and 3GC
N	272 patients	86 patients	240 patients
Intervention	Ciprofloxacin or TMP/SMX 7d Ciprofloxacin or TMP/SMX 14d	Ciprofloxacin 7d Ciprofloxacin 14d	Ofloxacin 200mg bd 7d Ofloxacin 200mg bd 14d
Primary Endpoint	Resolution of symptoms at 14d after treatment completion	Clinical cure at 14d after treatment completion (no fever, resolution of symptoms, and no further need of antibiotics)	Treatment success at week+6: - Clinical success (no fever), and: - Negative urine culture, and: - No further need of antibiotics.
Results	Clinical cure (7d vs 14d): 93.1% vs 90.2% (CI95% -5.2 to +∞)	Clinical cure (7d vs 14d): 86% vs 98% (CI90% -20.6 to -1.8%) * But no differences in cumulative clinical cure at week+12.	Treatment success (7d vs 14d): 55.7 vs 77.6% (CI95% -33.3 to -10.1%) * But clinical success occurred in 95.6% vs 100% (-9.8 to -1.3)
Conclusion	7d treatment non-inferior than 14d	7d treatment inferior than 14d for short-term clinical cure.	7d treatment inferior than 14d for treatment success



José Molina Gil-Bermejo
Spain

2023 CID study: problem with study design:

- too low FQ dose, affects mainly short courses
- Evaluation of f/u was longer in short term group
- But no difference in long-term outcome
- Clinical effectiveness is above 95%

ECCMID 2023

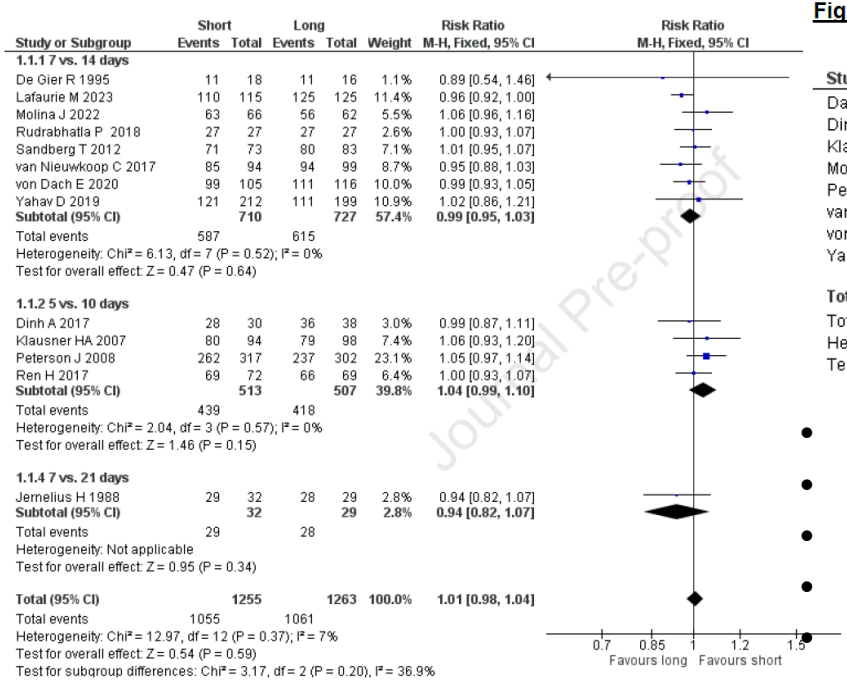
- Wenn **Prostatitis nicht auszuschliessen: 2 Wochen**
- **Akute Prostatitis: 2 Wochen** (iv oder FQ, Bactrim)
- **Chron. Prostatitis: 4-6 Wochen**

Lam et al. CMI 2023;29:32e37

Short versus long antibiotic treatment for pyelonephritis and complicated urinary tract infections: a living systematic review and meta-analysis of RCTs

- 16 RCTs, 4643 Pat.

Figure 2 - Clinical success for short versus long antibiotic treatment duration (RR >1 favors short treatment)*



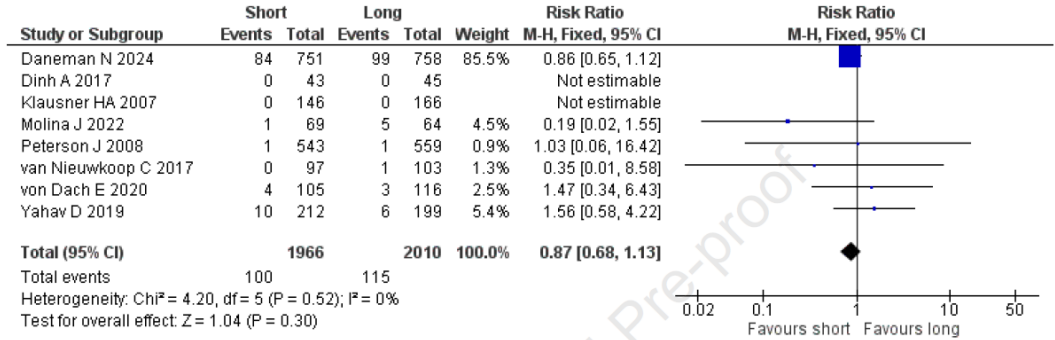
Study or Subgroup	Short Events	Short Total	Long Events	Long Total	Weight	Risk Ratio M-H, Fixed, 95% CI
1.1.1 7 vs. 14 days						
De Gier R 1995	11	18	11	16	1.1%	0.89 [0.54, 1.46]
Lafaurie M 2023	110	115	125	125	11.4%	0.96 [0.92, 1.00]
Molina J 2022	63	66	56	62	5.5%	1.06 [0.96, 1.16]
Rudrabhatla P 2018	27	27	27	27	2.6%	1.00 [0.93, 1.07]
Sandberg T 2012	71	73	80	83	7.1%	1.01 [0.95, 1.07]
van Nieuwkoop C 2017	85	94	94	99	8.7%	0.95 [0.88, 1.03]
von Dach E 2020	99	105	111	116	10.0%	0.99 [0.93, 1.05]
Yahav D 2019	121	212	111	199	10.9%	1.02 [0.86, 1.21]
Subtotal (95% CI)		**710**		**727**	**57.4%**	**0.99 [0.95, 1.03]**
Total events	587		615			
Heterogeneity: Chi² = 6.13, df = 7 (P = 0.52); I² = 0%						
Test for overall effect: Z = 0.47 (P = 0.64)						
1.1.2 5 vs. 10 days						
Dinh A 2017	28	30	36	38	3.0%	0.99 [0.87, 1.11]
Klausner HA 2007	80	94	79	98	7.4%	1.06 [0.93, 1.20]
Peterson J 2008	262	317	237	302	23.1%	1.05 [0.97, 1.14]
Ren H 2017	69	72	66	69	6.4%	1.00 [0.93, 1.07]
Subtotal (95% CI)		**513**		**507**	**39.8%**	**1.04 [0.99, 1.10]**
Total events	439		418			
Heterogeneity: Chi² = 2.04, df = 3 (P = 0.57); I² = 0%						
Test for overall effect: Z = 1.46 (P = 0.15)						
1.1.4 7 vs. 21 days						
Jernelius H 1988	29	32	28	29	2.8%	0.94 [0.82, 1.07]
Subtotal (95% CI)		**32**		**29**	**2.8%**	**0.94 [0.82, 1.07]**
Total events	29		28			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.95 (P = 0.34)						
Total (95% CI)		**1255**		**1263**	**100.0%**	**1.01 [0.98, 1.04]**
Total events	1055		1061			
Heterogeneity: Chi² = 12.97, df = 12 (P = 0.37); I² = 7%						
Test for overall effect: Z = 0.54 (P = 0.59)						
Test for subgroup differences: Chi² = 3.17, df = 2 (P = 0.20), I² = 36.9%						

Risk Ratio M-H, Fixed, 95% CI

0.7 0.85 1 1.2 1.5

Favours long Favours short

Figure 3 - Death for short versus long antibiotic treatment duration (RR<1 favors short treatment)



Study or Subgroup	Short Events	Short Total	Long Events	Long Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Daneman N 2024	84	751	99	758	85.5%	0.86 [0.65, 1.12]
Dinh A 2017	0	43	0	45		Not estimable
Klausner HA 2007	0	146	0	166		Not estimable
Molina J 2022	1	69	5	64	4.5%	0.19 [0.02, 1.55]
Peterson J 2008	1	543	1	559	0.9%	1.03 [0.06, 16.42]
van Nieuwkoop C 2017	0	97	1	103	1.3%	0.35 [0.01, 8.58]
von Dach E 2020	4	105	3	116	2.5%	1.47 [0.34, 6.43]
Yahav D 2019	10	212	6	199	5.4%	1.56 [0.58, 4.22]
Total (95% CI)		**1966**		**2010**	**100.0%**	**0.87 [0.68, 1.13]**
Total events	100		115			
Heterogeneity: Chi² = 4.20, df = 5 (P = 0.52); I² = 0%						
Test for overall effect: Z = 1.04 (P = 0.30)						

Risk Ratio M-H, Fixed, 95% CI

0.02 0.1 1 10 50

Favours short Favours long

- Clinical success: RR: 1.01 (0.98-1.04)
- Clinical success in men: 0.97 (0.91-1.04)
- Clinical success FQ: 1.01 (0.97-1.05)
- Clinical success any AB: 1.01 (0.94-1.08)

No diff: microbiol. cure, relapse, reinfection, adverse events, mortality

Zahavi et al. CMI 2025; https://doi.org/10.1016/j.cmi.2025.04.008

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Therapiedauer bei Gram-negativer Bakteriämie: 7d vs 14d vs CRP

JAMA Network

QUESTION Does antibiotic treatment with C-reactive protein (CRP)-guided duration or fixed 7-day duration, vs fixed 14-day duration, provide noninferior clinical failure rates in patients with uncomplicated gram-negative bacteremia?

CONCLUSION This trial found that CRP-guided and 7-day treatment were noninferior to 14-day treatment in gram-negative bacteremia, but interpretation is limited by the large noninferiority margin compared with the low event rate and lower adherence in the CRP group.

POPULATION

306 Females
197 Males

Adults hospitalized with gram-negative bacteremia without complicated infection or immunosuppression

Median age: 79 years

LOCATIONS

3 Tertiary care hospitals in Switzerland

INTERVENTION

503 Patients randomized
493 Patients analyzed

169	169	165
CRP-guided treatment	**7-Day treatment**	**14-Day treatment**
Discontinuation of antibiotics once CRP (measured every 1-2 days) decreased 75% from peak	Fixed 7-day duration of antibiotic treatment	Fixed 14-day duration of antibiotic treatment

PRIMARY OUTCOME

Clinical failure rate at day 30, defined as recurrent bacteremia, local or distant complication, reinitiation of antibiotic due to clinical worsening, or all-cause mortality

FINDINGS

Clinical failure at day 30

CRP-guided treatment	**2.4%** 4 of 164 patients
7-Day treatment	**6.6%** 11 of 166 patients
14-Day treatment	**5.5%** 9 of 163 patients

The CRP and 7-day findings were noninferior:

CRP vs 14 day: **−3.1%** (1-sided 97.5% CI, −∞ to 1.1)

7 day vs 14 day: **1.1%** (1-sided 97.5% CI, −∞ to 6.3)

von Dach E, Albrich WC, Brunel AS, et al. Effect of C-reactive protein-guided antibiotic treatment duration, 7-day treatment, or 14-day treatment on 30-day clinical failure rate in patients with uncomplicated gram-negative bacteremia: a randomized clinical trial. *JAMA*. Published June 2, 2020. doi:10.1001/jama.2020.6348

7 vs 14d Antibiotics for Gram-Negative Bloodstream Infection – A Systematic Review and Noninferiority Meta-Analysis

- Individuelle Patienten-Metaanalyse aus RCTs: 3729 Pat aus 4 RCTs
- 1°EP: 90d all-cause mortality

Figure 2. Forest Plot of Included Studies

Source	Deaths/total No. of patients: 7 d of Therapy	14 d of Therapy	RR (95% CrI)
Intention to treat			
Yahav et al,[4] 2019	36/306	32/298	1.10 (0.70-1.72)
von Dach et al,[5] 2020	14/169	9/165	1.52 (0.68-3.41)
Molina et al,[3] 2022	10/117	15/127	0.72 (0.34-1.55)
BALANCE Investigators,[7] 2024	166/1292	197/1255	0.82 (0.68-0.99)
Bayesian	226/1884	253/1845	0.91 (0.69-1.22)
τ = 0.13 (95% CrI, 0.02-0.33)			
Probability of noninferiority, 97.8%			
Per protocol			
Yahav et al,[4] 2019	33/280	26/276	1.25 (0.77-2.03)
von Dach et al,[5] 2020	9/141	5/143	1.83 (0.63-5.31)
Molina et al,[3] 2022	5/92	9/108	0.65 (0.23-1.88)
BALANCE Investigators,[7] 2024	120/1014	159/1072	0.82 (0.68-0.99)
Bayesian	167/1527	199/1599	0.93 (0.68-1.32)
τ = 0.15 (95% CrI, 0.02-0.38)			
Probability of noninferiority, 95.1%			

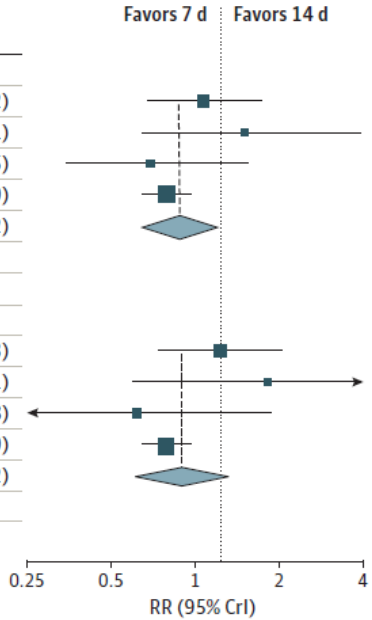
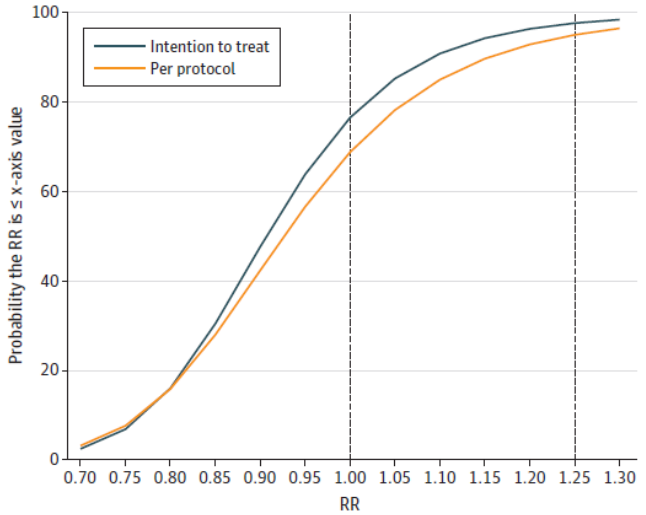


Figure 3. Probability of Noninferiority (or Superiority) as a Function of the Upper Bound



The dashed line at 1.00 represents superiority (RR is1.00);
the dashed line at 1.25 represents noninferiority.

Lee et al. JAMA Network Open 2025;8(3):e251421. doi:10.1001/jamanetworkopen.2025.1421

hoch Health Ostschweiz

- RCT: 7d vs. 14d Antibiotika bei Bakteriämie
- Excl.: *S. aureus*, Kontaminanten, schwere Immunsuppr.
- 3608 Pat., 55% ICU, 45% Station
- 42% HWI, 19% abdominal, 13% pulmonal, 6% Katheter, 5% SSTI
- 1° Outcome: 90d Mortalität: **Non-inferior** (konsistent in Subgr.)

ORIGINAL ARTICLE

Antibiotic Treatment for 7 versus 14 Days in Patients with Bloodstream Infections

The BALANCE Investigators, for the Canadian Critical Care Trials Group, the Association of Medical Microbiology and Infectious Disease Canada Clinical Research Network, the Australian and New Zealand Intensive Care Society Clinical Trials Group, and the Australasian Society for Infectious Diseases Clinical Research Network

Table 2. Primary and Secondary Outcomes.

	7-Day Group (N=1814)	14-Day Group (N=1794)	Difference (95% CI)*
			percentage points
Primary outcome, death from any cause by 90 days — no./total no. (%)			
Primary analysis, intention-to-treat population	261/1802 (14.5)	286/1779 (16.1)	−1.6 (−4.0 to 0.8)
Secondary analysis, per-protocol population	178/1370 (13.0)	222/1483 (15.0)	−2.0 (−4.5 to 0.6)
Modified intention-to-treat analysis, survival ≥7 days	247/1788 (13.8)	272/1765 (15.4)	−1.6 (−3.9 to 0.7)

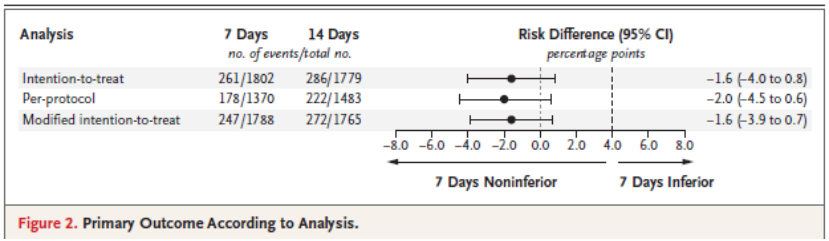
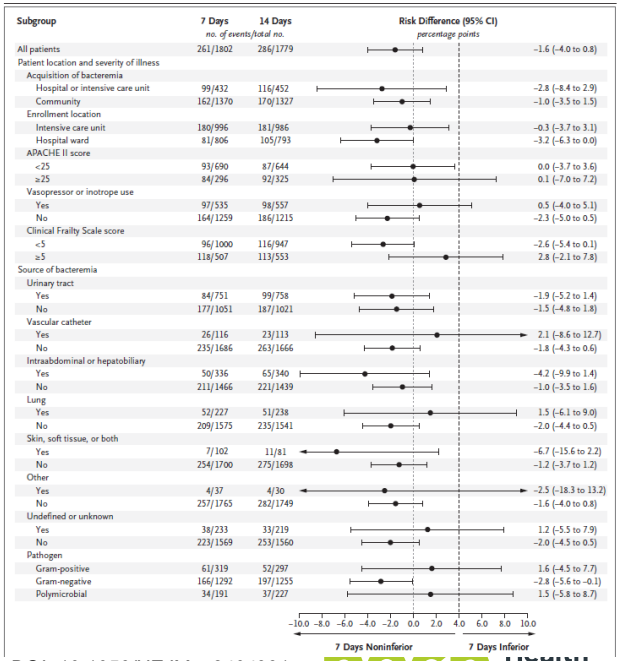


Figure 2. Primary Outcome According to Analysis.



BALANCE NEJM 2024; DOI: 10.1056/NEJMoa2404991

Systematic review

Long versus short course anti-microbial therapy of uncomplicated *Staphylococcus aureus* bacteraemia: a systematic review

Martin Schnizer [1], Paul Schellong [1], Norman Rose [1], Carolin Fleischmann-Struzek [1], Stefan Hagel [1], Mohamed Abbas [2,3], Brendan Payne [4,5], Rebecca N. Evans [6], Mathias W. Pletz [1], Sebastian Weis [1,7,*]

- No RCTs… evidence is lacking
- Low-risk, uncomplicated SABSI: 2-weeks
- High-risk complicated SABSI: 4-6 weeks or longer
- Largely based on observational data.

Schnizer et al. CMI 2024, 1254e1260

Tong et al. JAM 2025; doi:10.1001/jama.2025.4288

Haut- und Weichteilinfekte

- **Erysipel, Cellulitis:**
  - Antibiotika iv wenn systemisch entzündet, po wenn afebril & "gebessert"
  - Gesamtdauer: **~ 5 d** (10 d nicht besser)
  - Länger falls Infektion noch nicht abgeklungen (**"nach Klinik"**, **bis kein Schmerz, keine Überwärmung**)
  - 7-14 d falls immunsupprimiert
- **Abszess:**
  - Inzision & Drainage
  - Antibiotika nur bei fehlendem Ansprechen, Umgebungsrötung, system. Entzündungszeichen, multiplen Abszessen, Immunsuppression

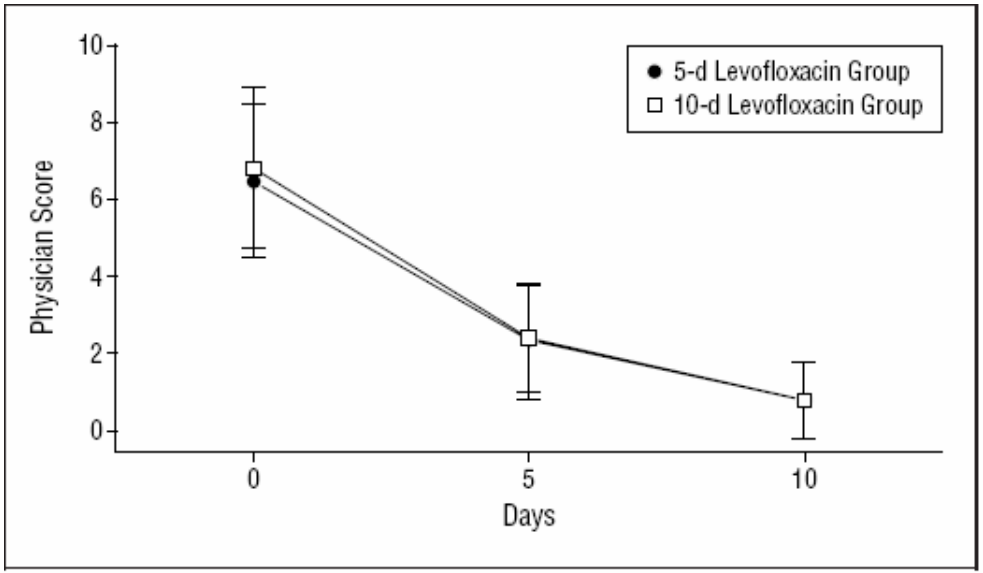
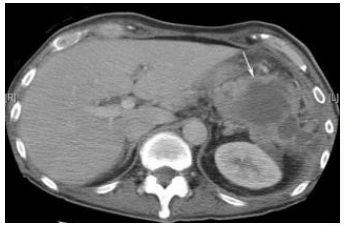


Figure 2. Serial physician composite scores for cellulitis with 5 vs 10 days of therapy. Physician composite score was a summation of 7 clinical indicators of cellulitis; maximum score 21 (see text for details). Error bars indicate SD.

Hepburn et al. Arch Int Med 2004;164:1669-74

Stevens et al. IDSA guidelines CID 2014;
Morris. BMJ Clin Evid 2008;1:1708; Talan et al. NEJM 2016;374:823-32; Spellberg et al. Ann Em Med 2011;57:183-5



The Surgical Infection Society Revised Guidelines on the Management of Intra-Abdominal Infection

John E. Mazuski,[1] Jeffrey M. Tessier,[2] Addison K. May,[3] Robert G. Sawyer,[4] Evan P. Nadler,[5] Matthew R. Rosengart,[6] Phillip K. Chang,[7] Patrick J. O'Neill,[8] Kevin P. Mollen,[9] Jared M. Huston,[10] Jose J. Diaz, Jr,[11] and Jose M. Prince[12]

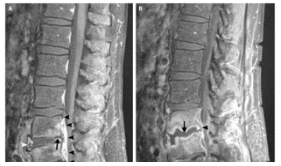
Recommendation	Clinical Scenario	Antibiotic Guidance	Grade
10.1a	Severe or necrotizing pancreatitis	Do **not** use antibiotics to prevent infection	1-B
10.1b	Uncomplicated acute colonic diverticulitis (low risk)	Antibiotics **may not be necessary** Sonst 4 d	2-B
10.2	- Traumatic bowel perforation (operated <12h) - Gastroduodenal perforation (operated <24h) - Acute/gangrenous appendicitis (no perforation) - Acute/gangrenous cholecystitis (no perforation) - Ischemic, non-perforated bowel	Limit antibiotics to **≤24 hours**	1-A / 1-C
10.3a	IAI with **adequate source control**	Limit antibiotics to **≤4 days (96 hours)**	1-A
10.3b	IAI **without** definitive source control	Limit antibiotics to **5–7 days**; assess clinical response; reassess for source control if no improvement	2-C
10.4	Secondary bacteremia from IAI, after adequate source control & resolved bacteremia	Discontinue antibiotics after **7 days**	2-B

Erstellt mit perplexity.ai

Nach Mazuski et al. Surgical Infections 2017; DOI: 10.1089/sur.2016.261

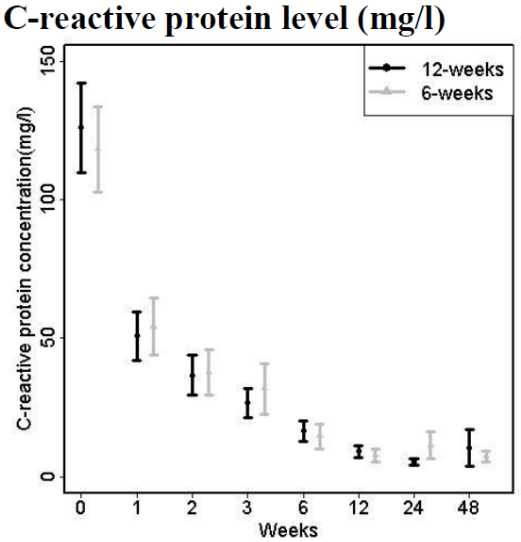
Antibiotic treatment for 6 weeks versus 12 weeks in patients with pyogenic vertebral osteomyelitis: an open-label, non-inferiority, randomised, controlled trial

Louis Bernard, Aurélien Dinh, Idir Ghout, David Simo, Valerie Zeller, Bertrand Issartel, Vincent Le Moing, Nadia Belmatoug, Philippe Lesprit, Jean-Pierre Bru, Audrey Therby, Damien Bouhour, Eric Dénes, Alexa Debard, Catherine Chirouze, Karine Fèvre, Michel Dupon, Philippe Aegerter, Denis Mulleman, on behalf of the Duration of Treatment for Spondylodiscitis (DTS) study group*



Lancet 2015; 385: 875–82

- Multizentr (71), open-label RCT (F), 359 Pat. ≥ 18J, pyogene vertebrale Osteomyelitis ohne FK
- Th: 6 Wo. vs. 12 Wo.
- 1° EP: Klinische Heilung @ 1 J.



	6-week regimen	12-week regimen	Difference in proportion of patients*	95% CI
Intention-to-treat analysis, n	176	175		
Cured	160 (90·9%)	159 (90·9%)	+0·1	−6·2 to 6·3
Cured and alive†	156 (88·6%)	150 (85·7%)	+2·9	−4·2 to 10·1
Cured without further antibiotic treatment‡	142 (80·7%)	141 (80·6%)	+0·1	−8·3 to 8·5
Per-protocol analysis, n	146	137		
Cured	137 (93·8%)	132 (96·4%)	−2·5	−8·2 to 2·9
Cured and alive†	133 (91·1%)	126 (92·0%)	−0·9	−7·7 to 6·0
Cured without further antibiotic treatment‡	NA	NA	NA	NA

TABLE 2 Duration of antibiotic therapy in select infections.[21–23]

System	Infection	Population	Recommended duration
Urinary tract	Uncomplicated cystitis	Women/adolescents	Nitrofurantoin—5 d TMP-SMX—3 d
	Complicated cystitis	Men	7 d
	Pyelonephritis	Adults	Quinolones or beta-lactams 7 d
Respiratory tract	Community-acquired pneumonia	Adults	5 d
	Nosocomial acquired pneumonia	Adults	≤8 d
Intra-abdominal	Uncomplicated appendicitis	Adults	Preoperative antibiotics only
	Traumatic bowel perforation	Adults	No more than 24 h postoperatively
	Gastroduodenal perforation	Adults	No more than 24 h postoperatively
	Intra-abdominal abscess	Adults	4 d after source control
Cellulitis	Uncomplicated non-purulent or purulent cellulitis	Adults	5–7 d unless hospitalized with extensive or severe disease
Osteoarticular	Acute vertebral osteomyelitis	Adults	6 wk
	Acute native septic arthritis	Adults	2 wk for small joints after drainage 4 wk for large joints after drainage
Bacteremia	Gram-negative *Enterobacterales* without source control concerns	Adults	7 d

Lam & Bourassa-Blanchette. J Hosp Med 2023; DOI: 10.1002/jhm.13220