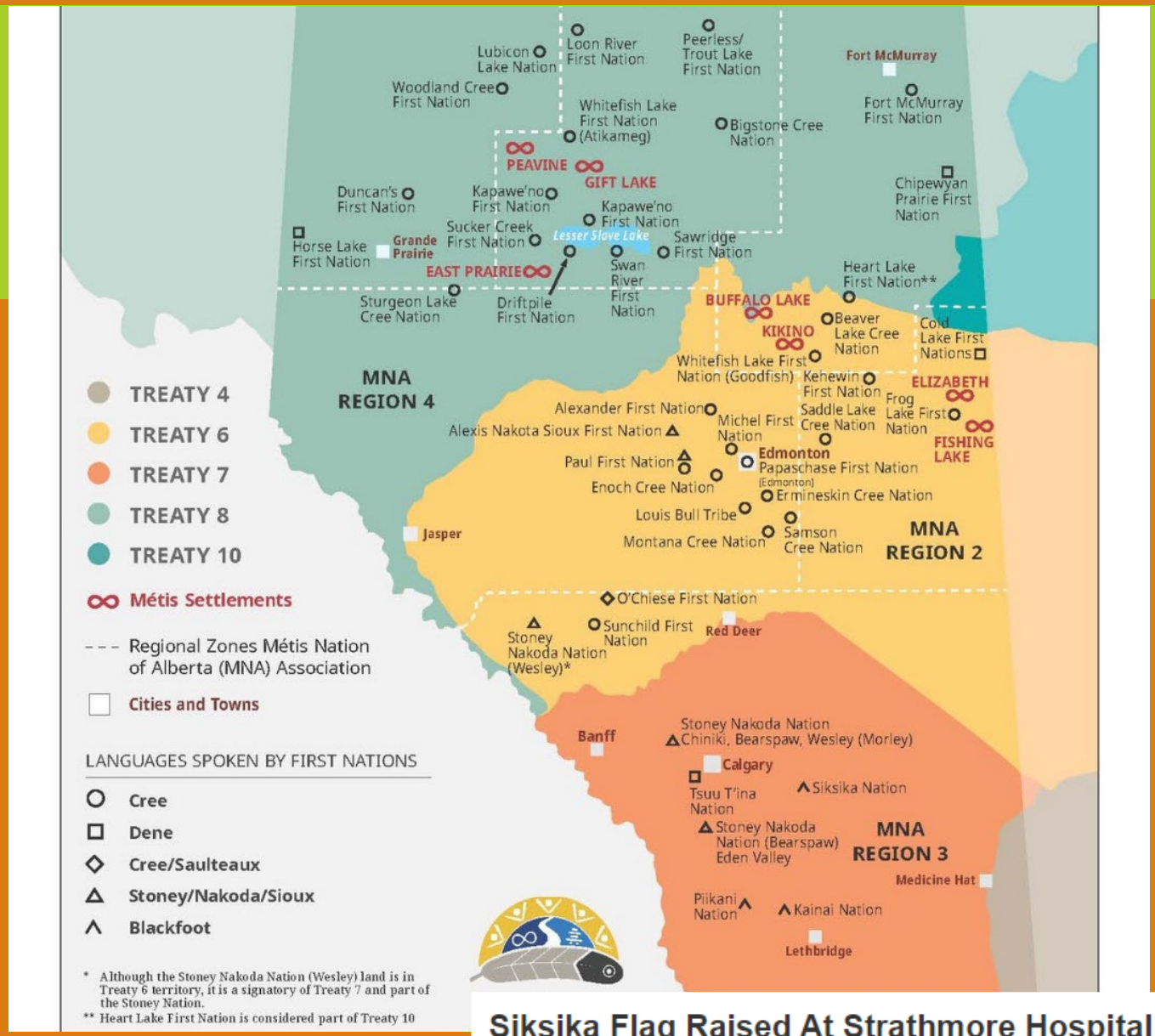
WHAT'S NEW IN ID? (NON-COVID)

Deana Sabuda, B. Sc, BSP, ACPR

Antimicrobial Stewardship

AHS Calgary

I have no disclosures to declare



Objectives:

- Which select patients with CAP may be safely treated with 3-days
- Name a new species of Candida
- the correct terminology for 5 organisms
- Antibiotics for an infected hip or knee prosthetic joint: 1½ months or more
- A trial in men with UTI, supports 7-day tx
- Which pts would benefit from 2° prophylaxis against C. difficile
- The 2 criteria for severe CDI
- Probiotics are out
- AUC: MIC-based vancomycin monitoring is not recommended in AB
  - Use trough monitoring 10-20 mg/L
- Osteomyelitis in kids: avoid central line tx
- ID Rx help is a click/call away

How low can you go for duration in CAP?

Discontinuing β-lactam treatment after 3 days for patients with community-acquired pneumonia in non-critical care wards (PTC): a double-blind, randomised, placebo-controlled, non-inferiority trial

Aurélien Dinh, Jacques Ropers, Clara Duran, Benjamin Davido, Laurène Deconinck, Morgan Matt, Olivia Senard, Aurore Lagrange, Sabrina Makhloufi, Guillaume Mellon, Victoire de Lastours, Frédérique Bouchand, Emmanuel Mathieu, Jean-Emmanuel Kahn, Elisabeth Rouveix, Julie Grenet, Jennifer Dumoulin, Thierry Chinet, Marion Pépin, Véronique Delcey, Sylvain Diamantis, Daniel Benhamou, Virginie Vitrat, Marie-Christine Dombret, Bertrand Renaud, Christian Perronne, Yann-Erick Claessens, José Labarère, Jean-Pierre Bedos, Philippe Aegerter, Anne-Claude Crémieux, for the Pneumonia Short Treatment (PTC) Study Group

Summary

Background Shortening the duration of antibiotic therapy for patients admitted to hospital with community-acquired pneumonia should help reduce antibiotic consumption and thus bacterial resistance, adverse events, and related costs. We aimed to assess the need for an additional 5-day course of β-lactam therapy among patients with community-acquired pneumonia who were stable after 3 days of treatment.

Lancet 2021; 397: 1195–203

This online publication has been corrected. The corrected version first appeared at thelancet.com on June 3, 2021

AMERICAN THORACIC SOCIETY DOCUMENTS

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

Joshua P. Metlay*, Grant W. Waterer*, Ann C. Long, Antonio Anzueto, Jan Brozek, Kristina Crothers, Laura A. Cooley, Nathan C. Dean, Michael J. Fine, Scott A. Flanders, Marie R. Griffin, Mark L. Metersky, Daniel M. Musher, Marcos I. Restrepo, and Cynthia G. Whitney; on behalf of the American Thoracic Society and Infectious Diseases Society of America

This official clinical practice guideline was approved by the American Thoracic Society May 2019 and the Infectious Diseases Society of America August 2019

...for admitted patients, treat for as little as 5 days, if clinical stability achieved

Stopping β-lactam therapy after 3 days, in select patients, with moderately severe CAP, was non-inferior to 8 days of treatment

Stopping β-lactam therapy after 3 days, in select patients, with moderately severe CAP, was non-inferior to 8 days of treatment

- Study limitations-fewer than ½ of the screened pts were eligible for enrollment, etiology of CAP was unknown
- Inclusion criteria, after 72 hrs of therapy, had clinical response:
  - Temp ≤ 37.8
  - HR<100
  - RR<24
  - O_2 sat ≥90%
  - Back to baseline mental status

Clinically important organisms that have changed names

Clinically important organisms that have changed names

- Enterobacterales, from previous: Enterobacteriacea
- Clostridioides difficile, from previous: Clostridium difficile
- Cutibacterium acnes, from previous: Propionibacterium acnes
- Streptococcus gallolyticus (subspecies gallolyticus), from Strep bovis
- Klebsiella aerogenes , from Enterobacter aerogenes

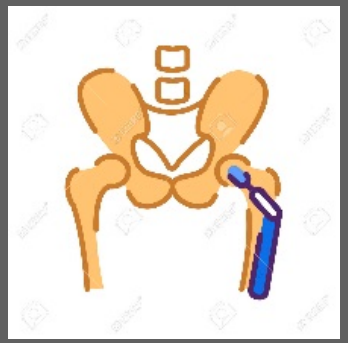
The NEW ENGLAND JOURNAL of MEDICINE

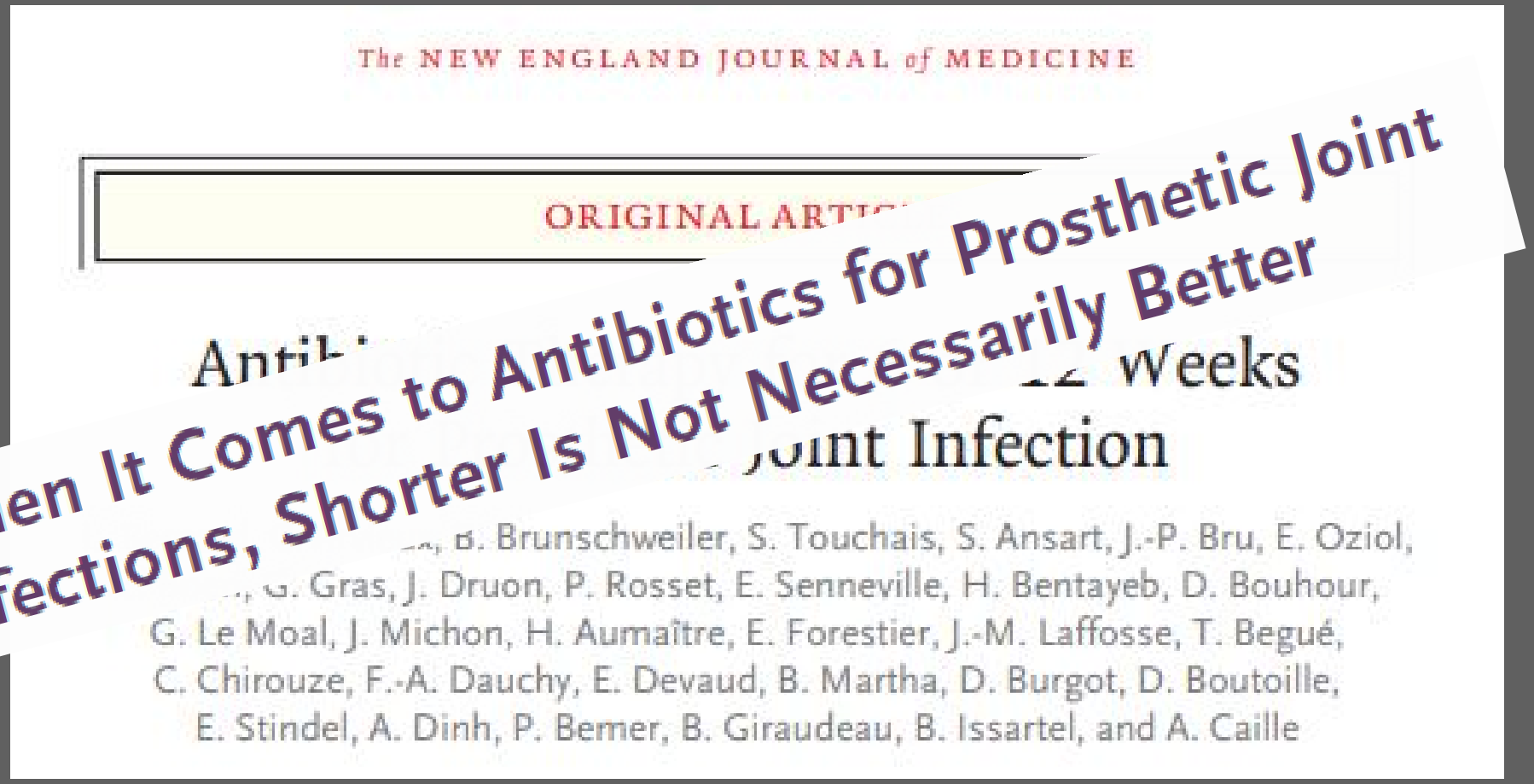
ORIGINAL ARTICLE

Antibiotic Therapy for 6 or 12 Weeks for Prosthetic Joint Infection

L. Bernard, C. Arvieux, B. Brunschweiler, S. Touchais, S. Ansart, J.-P. Bru, E. Oziol, C. Boeri, G. Gras, J. Druon, P. Rosset, E. Senneville, H. Bentayeb, D. Bouhour, G. Le Moal, J. Michon, H. Aumaître, E. Forestier, J.-M. Laffosse, T. Bégué, C. Chirouze, F.-A. Dauchy, E. Devaud, B. Martha, D. Burgot, D. Boutoille, E. Stindel, A. Dinh, P. Berner, B. Giraudeau, B. Issartel, and A. Caille

N ENGL J MED 384;21 NEJM.ORG MAY 27, 2021





When It Comes to Antibiotics for Prosthetic Joint Infections, Shorter Is Not Necessarily Better

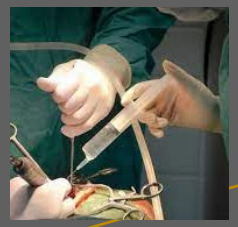
- DAPITO
- Failure of shorter course

Characteristic	6-Wk Therapy (N=203)	12-Wk Therapy (N=201)
Age — yr†	68.4±11.7	69.5±10.7
Male sex — no./total no. (%)	143/203 (70.4)	130/201 (64.7)
History of prosthetic joint infection — no./total no. (%)‡	30/203 (14.8)	29/201 (14.4)
Baseline surgical procedure — no./total no. (%)		
Debridement, antibiotics, implant retention (DAIR)	82/203 (40.4)	85/201 (42.3)
One-stage prosthetic joint implant exchange	77/203 (37.9)	73/201 (36.3)
Two-stage prosthetic joint implant exchange	44/203 (21.7)	43/201 (21.4)
Affected joint — no./total no. (%)		
Hip	129/203 (63.5)	126/201 (62.7)
Knee	74/203 (36.5)	75/201 (37.3)

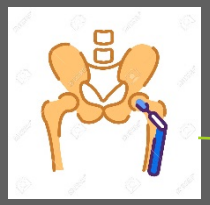
Debridement, antibiotics, implant retention (DAIR)

One-stage prosthetic joint implant exchange

Two-stage prosthetic joint implant exchange

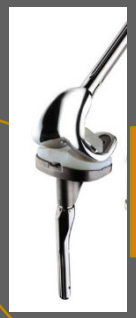


2-6 wks IV then po



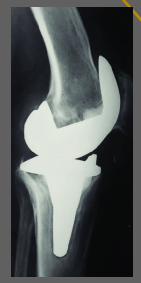
3 months total

6 months total



2-6 wks IV then po

3 months, all joints



4-6 wks IV then

2 week antibiotic holiday

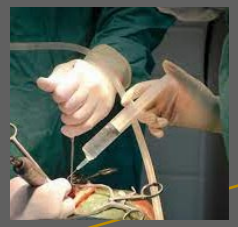
no growth: stop

growth: 6-12 weeks

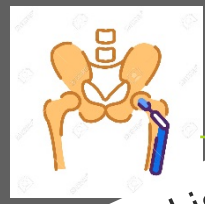
Debridement, antibiotics, implant retention (DAIR)

One-stage prosthetic joint implant exchange

Two-stage prosthetic joint implant exchange



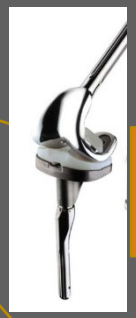
2-6 wks IV then po



ths total

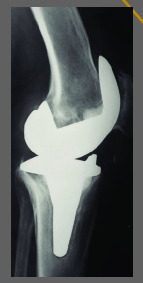
1.5 months total is NOT enough!

6 months total



2-6 wks IV then po

3 months, all joints



4-6 wks IV then

2 week antibiotic holiday

no growth: stop

growth: 6-12 weeks

DAPITO, NEJM, May 2021
Unblinded, noninferiority RCT, France compared:
6 weeks (total) vs 12 weeks (total), of antibiotics

- Different strategies (40% DAIR) and antibiotic regimens
- Median duration of IV: 9 days
- In pts with PJI managed with surgery, 6 weeks of antibiotics was not non-inferior to 12 weeks

Duration for afebrile male with symptomatic UTI

Research

JAMA | Original Investigation

Effect of 7 vs 14 Days of Antibiotic Therapy on Resolution of Symptoms Among Afebrile Men With Urinary Tract Infection

A Randomized Clinical Trial

Dimitri M. Drekonja, MD, MS; Barbara Trautner, MD, PhD; Carla Amundson, MA; Michael Kuskowski, PhD; James R. Johnson, MD

Research

JAMA | Original Investigation

Effect of 7 vs 14 Days of A… …rapy on Resolution of Symptoms Among Afebrile Me… …ary Tract Infection
A Randomize… …al

Dimitri … …bara Trautner, MD, PhD; Carla Amundson, MA; Michael Kuskowski, PhD;

Seven days of treatment was as effective as 14 days, with a similar rate of recurrence.

Duration for afebrile male with symptomatic UTI

- 272 afebrile men (median age, 69) with ≥1 symptom attributed to UTI
  - dysuria (67%), frequency (55%), and urgency (34%)
- Pre-existing disease was common: hx of UTI, prostatic hypertrophy, urinary incontinence, prostate Ca, intermittent catheter
- Patients were enrolled within a 7-day window of outpt tx with ciprofloxacin or TMP/SMX
- At end of 7-day regimens, pts were randomized to additional 7 days of their original antibiotic or to placebo
- In intent-to-treat and as-treated analyses at 14 days:
  - symptom resolution was not significantly different in the 14-day and 7-day groups (≈92%)
- Subgroup analyses of pts with positive (77%) or negative (23%) urine cultures showed no differences
- At 28 days, recurrence of symptoms was similar in both treatment groups (≈12%)

** No patients progressed to febrile UTI or upper UTI, and incidence of adverse events was similar in both treatment grps.

☹ ciprofloxacin

Duration for afebrile male with symptomatic UTI

Didn't enroll last 18 pts to reach the pre-specified goal of 290 pts (2014-2019)

- 272 afebrile men (median age, 69) with ≥1 symptom attributed to UTI
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- Pre-existing disease was common: hx of UTI, prostatic hypertrophy, urinary incontinence, prostate Ca, intermittent catheter
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Comments

- supports a 7-day course of antibiotics for an afebrile man with symptoms attributed to UTI
- still shorter or no antibiotics to achieve same outcome?
- raises questions about our approach to UTIs in males
  - similar responses to antibiotics for men:
    - with positive cultures
    - without positive cultures
  - symptom-based inclusion criteria for patients
- Reflects real-world practice

American Journal of Infection Control 49 (2021) 804–807

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

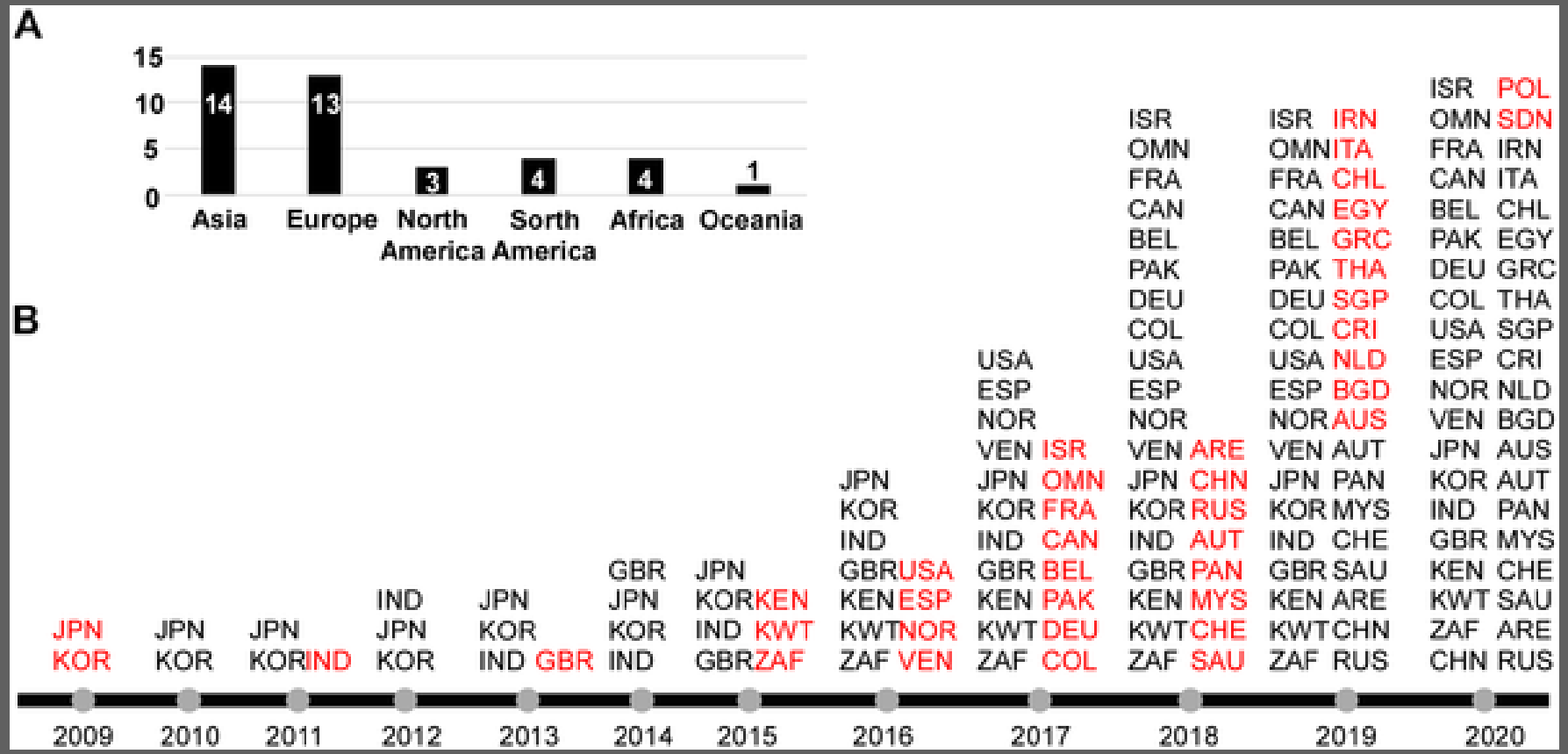
Major Article

First reported outbreak of the emerging pathogen *Candida auris* in Canada

Eric J. Eckbo MD [a,b], Titus Wong MD, MHSc [a,b,c], Amrita Bharat PhD [d], Mary Cameron-Lane RN [c], Linda Hoang MD, MSc [a,e], Meena Dawar MD, MHSc [f,g], Marthe Charles MD, MSc [a,b,*]

[a] *Department of Pathology & Laboratory Medicine, University of British Columbia, Vancouver, British Columbia, Canada*
[b] *Division of Medical Microbiology & Infection Control, Vancouver Coastal Health Authority, Vancouver, British Columbia, Canada*
[c] *Infection Prevention & Control, Vancouver Coastal Health Authority, Vancouver, British Columbia, Canada*
[d] *National Microbiology Laboratory, Public Health Agency of Canada, Winnipeg, Manitoba, Canada*
[e] *Public Health Laboratory, British Columbia Centre for Disease Control, Vancouver, British Columbia, Canada*
[f] *School of Population and Public Health, University of British Columbia, Vancouver, British Columbia, Canada*
[g] *Office of the Chief Medical Health Officer, Vancouver Coastal Health Authority, Vancouver, British Columbia, Canada*

Fig 2. Countries with reported cases of C. auris infection or colonization from January 2009 to June 2020.



Du H, Bing J, Hu T, Ennis CL, Nobile CJ, et al. (2020) Candida auris: Epidemiology, biology, antifungal resistance, and virulence. PLOS Pathogens 16(10): e1008921. https://doi.org/10.1371/journal.ppat.1008921
https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1008921

Comments

- *Candida auris* is a common skin colonizer
- extensive antifungal resistance
- propensity for healthcare-associated outbreaks

Clinical Infectious Diseases

IDSA GUIDELINES

Clinical Practice Guideline by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA): 2021 Focused Update Guidelines on Management of *Clostridioides difficile* Infection in Adults

Stuart Johnson,[1,2] Valéry Lavergne,[3,4] Andrew M. Skinner,[1,2] Anne J. Gonzales-Luna,[5] Kevin W. Garey,[5] Ciaran P. Kelly,[6] and Mark H. Wilcox[7]

American College of Gastroenterology

Clinical Guidelines: Prevention, Diagnosis, and Treatment of *Clostridioides difficile* Infections

Colleen R. Kelly, MD, AGAF, FACG[1], Monika Fischer, MD, MSc, AGAF, FACG[2], Jessica R. Allegretti, MD, MPH, FACG[3], Kerry LaPlante, PharmD, FCCP, FIDSA[4], David B. Stewart, MD, FACS, FASCRS[5], Berkeley N. Limketkai, MD, PhD, FACG (GRADE Methodologist)[6] and Neil H. Stollman, MD, FACG[7]

Clostridioides difficile **infection occurs when the bacterium produces toxin that causes diarrhea and inflammation of the colon. These guidelines indicate the preferred approach to the management of adults with *C. difficile* infection and represent the official practice recommendations of the American College of Gastroenterology. The scientific evidence for these guidelines was evaluated using the Grading of Recommendations Assessment, Development, and Evaluation process. In instances where the evidence was not appropriate for Grading of Recommendations Assessment, Development, and Evaluation but there was consensus of significant clinical merit, key concept statements were developed using expert consensus. These guidelines are meant to be broadly applicable and should be viewed as the preferred, but not the only, approach to clinical scenarios.**

Am J Gastroenterol 2021;116:1124–1147; published online May 18, 2021

Clinical Infectious Diseases

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Clinical Infectious Diseases

IDSA GUIDELINE

Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults and Children: 2017 Update by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA)

L. Clifford McDonald,[1] Dale N. Gerding,[2] Stuart Johnson,[2,3] Johan S. Bakken,[4] Karen C. Carroll,[5] Susan E. Coffin,[6] Erik R. Dubberke,[7] Kevin W. Garey,[8] Carolyn V. Gould,[1] Ciaran Kelly,[9] Vivian Loo,[10] Julia Shaklee Sammons,[6] Thomas J. Sandora,[11] and Mark H. Wilcox[12]

American College of Gastroenterology

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Colleen R. Kelly, MD, AGAF, FACG[1], Monika Fischer, MD, MSc, AGAF, FACG[2], Jessica R. Allegretti, MD, MPH, FACG[3], Kerry LaPlante, PharmD, FCCP, FIDSA[4], David B. Stewart, MD, FACS, FASCRS[5], Berkeley N. Limketkai, MD, PhD, FACG (GRADE Methodologist)[6] and Neil H. Stollman, MD, FACG[7]

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Am J Gastroenterol 2021;116:1124–1147; published online May 18, 2021

Selected Recommendations

- Oral fidaxomicin is favored for treating patients with CDI. Acceptable: oral vancomycin
- Severe CDI: WBCs >15 x 10^9/L or a creatinine level of >133 µmol/L
- metronidazole for non-severe CDI in low-risk patients
- First recurrence: oral vancomycin, plus taper
- specific populations, i.e inflammatory bowel disease send C.diff; vanco min 14 days
- Probiotics should not be used for primary or secondary prevention of CDI
- Bezlotoxumab infusion as adjunct: not yet available in Canada

Secondary Prophylaxis against C. difficile

- Oral vancomycin prophylaxis may be considered in high-risk patients who have been recently treated for C. difficile and require subsequent treatment with systemic antibiotics
- High-risk: age ≥ 65 years or significant immunocompromise, who were hospitalized with severe CDI in past 3 months
- Vancomycin 125 mg po once daily and continue for 5 days after completion of other antibiotics
- Metronidazole is not advised

Antimicrobial Stewardship Outreach in Alberta

- Tele-Stewardship
- Skype or call
- Preceptorships

J Pediatric Infect Dis Soc August 2021

Journal of the Pediatric Infectious Diseases Society

GUIDELINES

Clinical Practice Guideline by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America: 2021 Guideline on Diagnosis and Management of Acute Hematogenous Osteomyelitis in Pediatrics

Key Recommendations

- Antibiotic initiation can be delayed ≤ 72 hours while awaiting a surgical diagnostic procedure (unless the child is clinically ill).
- Blood culture is recommended prior to antibiotic administration.
- C-reactive protein should be measured at baseline and every 2–3 days during early therapy to follow treatment progress.

Treatment of osteomyelitis:

- Empiric antibiotics should cover *Staphylococcus aureus* ± MRSA based on local resistance patterns and clinical presentation.
- Additional surgical debridement for critically ill children and those with abscesses >2cm.
- **Transition to oral is recommended over outpatient IV therapy in patients who respond to initial parental therapy**
- conditional recommendation for total of 3–4 weeks for uncomplicated osteomyelitis due to *S. aureus*.

Alberta Health Services Pharmacy Services

Issue 18 – October 2020

Antimicrobial Stewardship Backgrounder

Update on Vancomycin Monitoring

(For dosing recommendations, refer to Bugs & Drugs)

BOTTOM LINE:

1. AUC:MIC-based vancomycin monitoring/dosage adjustment is **not** recommended in AHS.
2. AHS endorses vancomycin trough based monitoring with recommended steady-state target vancomycin trough range of 10-20 mg/L.
3. Order vancomycin trough levels only when necessary and at appropriate time.

What do you know and how will you use it?