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ARTICLES AND COMMENTARIES

1059 Point-of-Care β-Lactam Allergy Skin Testing by Antimicrobial Stewardship Programs: A Pragmatic Multicenter Prospective Evaluation

Jerome A. Leis, Lesley Palimay, Grace Ho, Sumit Raybardhan, Suzanne Gill, Tiffany Kan, Jackie Campbell, Alex Kiss, Janine B. McCready, Pavani Das, Brian Minnema, Jeff E. Powis, Sandra A. N. Walker, Heather Ferguson, Benny Wong, and Elizabeth Weber

In this pragmatic multicenter prospective evaluation, introducing β-lactam allergy skin testing at the point of care across 3 hospital antimicrobial stewardship programs resulted in greater use of preferred β-lactam therapy without increasing the risk of adverse drug reactions.

1066 Efficacy of Maternal Influenza Vaccination Against All-Cause Lower Respiratory Tract Infection Hospitalizations in Young Infants: Results From a Randomized Controlled Trial

Marta C. Nunes, Clare L. Cutland, Stephanie Jones, Sarah Downs, Adriana Weinberg, Justin R. Ortiz, Kathleen M. Neuzil, Eric A. F. Simões, Keith P. Klugman, and Shabir A. Madhi

Influenza vaccination during pregnancy decreased the incidence of acute lower respiratory tract infection hospitalizations in infants born to vaccinated mothers. The benefits of protecting against influenza virus infection during early infancy might extend beyond protecting only against influenzaConfirmed illness.

1072 Emergence of Livestock-Associated Methicillin-Resistant Staphylococcus aureus Bloodstream Infections in Denmark

Jesper Larsen, Andreas Petersen, Anders R. Larsen, Raphael N. Sieber, Marc Stegger, Anders Koch, Frank M. Aarestrup, Lance B. Price, and Robert L. Skov; for the Danish MRSA Study Group

Livestock-associated methicillin-resistant Staphylococcus aureus (LA-MRSA) CC398 was an increasing cause of bacteremia in Denmark during 2010–2015. Most patients lived in rural areas but had no contact to livestock. Whole-genome sequencing supported that Danish pigs are the most likely source of human LA-MRSA CC398 infections.

1077 Treatment Outcomes of Mycobacterium avium Complex Lung Disease: A Systematic Review and Meta-analysis

Nakwon Kwak, Jimyung Park, Eunyoung Kim, Chang-Hoon Lee, Sung Koo Han, and Jae-Joon Yim

The treatment success rate of macrolide-containing regimens was relatively poor with a high default rate, although they had been considered to bring therapeutic advances in the treatment of Mycobacterium avium complex lung disease.

1085 High Rate of Treatment Completion in Program Settings With 12-Dose Weekly Isoniazid and Rifapentine for Latent Mycobacterium tuberculosis Infection


A regimen of 12 weekly doses of directly observed isoniazid and rifapentine (3HP) was well tolerated, with low rates of discontinuation due to adverse drug reactions, and high completion rates among diverse patient cohorts. Completion rates for 3HP in routine healthcare settings were greater than reported from clinical trials and historically observed using other regimens.
Reduced Antibody Response to Infant Measles Vaccination: Effects Based on Type and Timing of the First Vaccine Dose Persist After the Second Dose
Sara Carazo Perez, Gaston De Serres, Alexandre Bureau, and Danuta M. Skowronski

The measles elimination goal may require a careful balance between earlier infant protection and the risk of reduced antibody responses and secondary vaccine failure among successive birth cohorts systematically initiated to measles vaccine <15 months of age.

Whole-Genome Cardiac DNA Methylation Fingerprint and Gene Expression Analysis Provide New Insights in the Pathogenesis of Chronic Chagas Disease Cardiomyopathy
Laurie Laugier, Amanda Farage Frade, Frederico Moraes Ferreira, Monique Andrade Baron, Priscila Camillo Teixeira, Sandrine Cabantous, Ludmila Rodrigues Pinto Ferreira, Laurence Louis, Vagner Oliveira Carvalho Rigaud, Fabio Antônio Gaiotto, Fernando Bacal, Pablo Pomerantzef, Edimar Bocchi, Jorge Kalil, Ronaldo Honorato Barros Santos, Edocio Cunha-Neto, and Christophe Chevillard

DNA methylation analysis on global gene expression in myocardial samples from patients with end-stage chronic Chagas cardiomyopathy leads to the identification of novel potential disease pathways and therapeutic targets linked to electrical conduction or immune response modulation.

Serum Bactericidal Antibody Responses of Students Immunized With a Meninoccoccal Serogroup B Vaccine in Response to an Outbreak on a University Campus
Eduardo Lujan, Kathleen Winter, Jillandra Rovaris, Qin Liu, and Dan M. Granoff

Two MenB-4C doses are recommended based on studies of serum bactericidal antibody using reference strains. Against 4 college outbreak strains, 53%–93% of students had protective titers at 1 month, which decreased to 31%–86% at 7 months. A booster dose may be required to increase duration of protection.

Outbreak of Pneumocystis jirovecii Infection Among Heart Transplant Recipients: Molecular Investigation and Management of an Interhuman Transmission
William Vindrios, Nicolas Argy, Solène Le Gal, François-Xavier Lescure, Laurent Massias, Minh Patrick Le, Michel Wolff, Yzadan Yazdanpanah, Gilles Nevez, Sandrine Houze, Richard Dorent, and Jean-Christophe Lucet

Investigation of an outbreak of Pneumocystis jirovecii infections in 7 heart transplant recipients revealed interhuman transmission of a single strain with documented failure of prophylaxis by atovaquone.

A Phylogenetic Analysis of Human Immunodeficiency Virus Type 1 Sequences in Kiev: Findings Among Key Populations
Esther Fearnhill, Annabelle Gourlay, Ruslan Mahyuta, Ruth Simmons, R. Bridget Ferns, Paul Grant, Eleni Nastouli, Iryna Karnets, Gary Murphy, Antonia Medoeva, Yuri Kruglov, Alexander Yurchenko, and Khloud Porter; for the Concerted Action on SeroConversion to AIDS and Death in Europe (CASCADE) Collaboration in EuroCoord

Transmission dynamics of HIV-1 in Kiev were investigated using phylogenetic analysis of pol sequences from recently diagnosed individuals. This revealed bridging between the 3 key populations, and evidence that the sexually transmitted HIV epidemic in Kiev is becoming self-sustaining.

Healthcare-Associated Mycobacterium bovis–Bacille Calmette-Guérin (BCG) Infection in Cancer Patients Without Prior BCG Instillation
Yolanda Meije, Joaquin Martinez-Montauti, Joan A. Cayla, Jose Loureiro, Lucia Ortega, Mercedes Clemente, Xavier Sanz, Montserrat Ricart, Maria J. Santomé, Pere Coll, Montserrat Sierra, Marta Calsina, Montserrat Vaque, Isabel Ruiz-Camps, Cristina López-Sánchez, Mar Montes, Ana Ayestaran, Jordi Carratala, and Angels Orcau

What is the etiology of disseminated infection with bacille Calmette-Guérin (BCG) in patients without previous intravesical BCG administration? The study supports the presence of iatrogenic, catheter-related infection by BCG due to nosocomial contamination with subsequent development of disseminated BCG infection.

Impact of Rotavirus Vaccine Introduction and Postintroduction Etiology of Diarrhea Requiring Hospital Admission in Haydom, Tanzania, a Rural African Setting

We describe the substantial impact of rotavirus vaccine introduction on all-cause and rotavirus diarrhea admissions to a rural Tanzanian referral hospital. Despite this impact, rotavirus remained the leading etiology of diarrhea requiring hospitalization in the third year after vaccine introduction.

Mycoplasma hominis Infections Transmitted Through Amniotic Tissue Product

Mycoplasma hominis surgical site infections occurred in recipients of an amniotic tissue product. Mycoplasma hominis was found in an unopened vial of product. A multistate investigation to track the product was limited by the lack of a standardized tissue tracking system.

Duodenoscope-Related Outbreak of a Carbapenem-Resistant Klebsiella pneumoniae Identified Using Advanced Molecular Diagnostics
Romney M. Humphries, Shuan Yang, Stephen Kim, Venkatakar Raman Muthusamy, Dana Russell, Alisa M. Trout, Teresa Zaroda, Quen J. Cheng, Grace Aldrovandi, Daniel Zachary Uslan, Peera Hemarajata, and Zachary Aaron Rubin

This article describes the epidemiologic methods used to identify a duodenoscope-related outbreak due to multidrug-resistant Klebsiella pneumonia.

Warmer Weather as a Risk Factor for Cellulitis: A Population-based Investigation
Ryan A. Peterson, Linnea A. Polgreen, Daniel K. Sewell, and Philip M. Polgreen

The incidence of cellulitis is highly seasonal, and this seasonality may be explained by changes in the weather, specifically, temperature. At population level, admissions to the hospital for cellulitis risk are strongly associated with warmer weather.
1174 Safety and Immunogenicity of Inactivated Varicella-Zoster Virus Vaccine in Adults With Autoimmune Disease: A Phase 2, Randomized, Double-Blind, Placebo-Controlled Clinical Trial
Michael Eberhardson, Stephen Hall, Kim A. Papp, Tina M. Sterling, Jon E. Stek, Lei Pang, Yanli Zhao, Janie Parrino, and Zoran Popović-Hajlov

In adults with autoimmune disease receiving immunosuppressive therapy, inactivated zoster vaccine was well-tolerated and elicited statistically significant varicella-zoster virus–specific immune responses approximately 28 days post-dose 4, measured by glycoprotein enzyme-linked immunosorbent assay and interferon-gamma enzyme-linked immunospot.

1183 Early BCG-Denmark and Neonatal Mortality Among Infants Weighing <2500 g: A Randomized Controlled Trial
Sofie Biering-Sørensen, Peter Aaby, Najaaraq Lund, Ivan Monteiro, Kristoffer Jarlov Jensen, Helle Brander Eriksen, Frederik Schultz-Buchholzer, Anne Sofie Pinosrup Jørgensen, Amabelia Rodrigues, Anne Barrert Fisker, and Christine Stabell Benn

We conducted the present trial to test whether early BCG-Denmark reduces mortality rate in low-weight (LW) neonates. We found that early administration of BCG-Denmark in LW infants is associated with major reductions in mortality rate.

1191 Characteristics and Serotype Distribution of Childhood Cases of Invasive Pneumococcal Disease Following Pneumococcal Conjugate Vaccination in England and Wales, 2006–2014

We compared children with 7-valent (PCV7) and 13-valent (PCV13) pneumococcal conjugate vaccine failure in the UK. Vaccine failure was rare; those with PCV13 failure were more likely to be healthy and to develop lower respiratory tract infection with empyema.

1199 National Patterns of Urine Testing During Inpatient Admission
Molly J. Horstman, Andrew Spiegelman, Aanand D. Naik, and Barbara W. Trautner

Nearly one-third of hospital admissions included a urine culture, with 20% of those admissions having >1 urine culture sent during the hospital stay. Female patients received more urine cultures than male patients regardless of admission, diagnosis, or age.

BRIEF REPORTS

1212 Editorial Commentary: To Test or Not to Test? Ending the Age-Old Debate for Drug-Resistant Tuberculosis
Jennifer Furr and Helen Cox

1214 Vancomycin Taper and Risk of Failure of Fecal Microbiota Transplantation in Patients With Recurrent Clostridium difficile Infection
Roberto L. Patrun, Carlos A. Hartmann, Sorca Allen, Cheryl L. Griesbach, Heidi E. Kosioroke, John K. DiBaise, and Robert Orenstein

1218 Thirty-Day Readmissions in Hospitalized Patients Who Received Bezlotoxumab With Antibacterial Drug Treatment for Clostridium difficile Infection
Vimalanand S. Prabhu, Oliver A. Comely, Yoav Golan, Erik R. Dubberke, Sebastian M. Heimann, Mary E. Hanson, Jane Liao, Alison Pedley, Mary Beth Dorr, and Stephen Marcella

1222 Clinical and Molecular Evidence of Atovaquone and Azithromycin Resistance in Relapsed Babesia microti Infection Associated With Rituximab and Chronic Lymphocytic Leukemia

1226 Does Disseminated Nontuberculous Mycobacterial Disease Cause False-Positive Determine TB-LAM Lateral Flow Assay Results? A Retrospective Review
Jeremy S. Nel, Christopher K. Lippincott, Rebecca Berhanu, David C. Spencer, Ian M. Sanne, and Prudence Iwe

1229 Salmonella enterica serovar Typhi Producing CTX-M-15 Extended Spectrum β-Lactamase in the Democratic Republic of the Congo
Marie-France Phoba, Barbara Barbé, Octavie Lunguya, Lysette Masendu, Deo Lulenga, Gordon Dougan, Vanessa K. Wong, Sophie Bertrand, Pieter-Jan Ceyssens, Jan Jacobs, Sandra Van Puyvelde, and Stijn Deborggraeve

VIEWPOINTS

1206 Of Testing and Treatment: Implications of Implementing New Regimens for Multidrug-Resistant Tuberculosis
David W. Bowdy, Grant Theron, Jeffrey A. Tornheim, Robin Warren, and Emily A. Kendall

While a novel regimen for multidrug-resistant tuberculosis has the potential to dramatically improve outcomes, it is imperative to couple recommendations for any novel antimicrobial regimen with corresponding guidance on drug susceptibility testing. We propose a specific, scientifically principled path forward.

INVITED ARTICLE

1232 Evolving Insights Into the Epidemiology and Control of Clostridium difficile in Hospitals
Daniel A. Caroff, Deborah S. Yokoe, and Michael Klompas

Typing studies suggest very few cases of hospital-onset Clostridium difficile infection are acquired from other patients. This suggests most are due to activation of latent C. difficile present-on-admission or new transmissions from asymptomatic patients. We consider implications for infection control programs.
PHOTO QUIZ

1239 A 54-Year-Old Woman With Bacteremia and an Unusual Rash
(Answer on pages 1241–2.)

CORRESPONDENCE

1243 Relationship of Genotype for HLA B*57 and IFNL4 With Disease Progression in Female HIV Controllers
Mark H. Kuniholm, Howard D. Strickler, Kathryn Anastos, Ludmila Prokunina-Olsson, Bradley E. Aouizerat, and Thomas R. O'Brien

1244 Reply to Kuniholm et al
Beatriz Dominguez-Molina, Laura Tarancon-Diez, Manuel Leal, and Ezequiel Ruiz-Mateos

1245 Residual Confounding or Lack of Effect?
Philipp Schuetz and Peter M. Wahl

1246 Reply to Schuetz and Wahl
David C. Chu and Allan J. Walkey

1247 Long-Acting Injectable Antiretroviral Therapy: An Opportunity to Improve Human Immunodeficiency Virus (HIV) Treatment and Reduce HIV Transmission Among Persons Being Released From Prison Facilities
Lauren Brinkley-Rubinstein, David L. Rosen, Paul Christopher, Lauri Bazerman, and Curt G. Beckwith

1248 Does the Centers for Disease Control and Prevention's Ventilator-Associated Event Definition Unintentionally Contradict Its Antimicrobial Stewardship Initiative?
Madhuri M. Sopirala

1249 Reply to Sopirala
Shelley S. Magill, Cindy Gross, and Michael Klompas

ERRATUM

1251 Kalil et al [Clin Infect Dis 2016; 63:575–82]