ARTICLES AND COMMENTARIES

1 Innate, T-, and B-Cell Responses in Acute Human Zika Patients

Understanding the immune response during acute Zika in humans will aid vaccine design and testing. In 5 acute patients, including 2 pregnant women, viral levels and innate, T-, and B-cell responses against Zika or dengue viruses are described.

11 Rates of and Risk Factors for Adverse Drug Events in Outpatient Parenteral Antimicrobial Therapy
Sara C. Keller, Deborah Williams, Mitra Gavgani, David Hirsch, John Adamovich, Dawn Hohl, Ayse P. Gurses, and Sara E. Cosgrove

In an analysis of a prospective cohort of outpatient parenteral antimicrobial therapy patients, 18% experienced an adverse drug event (ADE) and 14.5% experienced a significant ADE. Patients with longer courses of therapy had lower ADE rates.

20 The Effect of Female Sex on Hepatitis C Incidence Among People Who Inject Drugs: Results From the International Multicohort InC3 Collaborative

This study provides valuable information on differences in hepatitis C virus incidence by sex in people who inject drugs, controlling for differences in related exposures and behavioral factors, using well-characterized longitudinal data from geographically diverse prospective cohort studies.

29 A Novel Human Pegivirus, HPgV-2 (HHpgV-1), Is Tightly Associated With Hepatitis C Virus (HCV) Infection and HCV/Human Immunodeficiency Virus Type 1 Coinfection
Haiying Wang, Zhengwei Wan, Ru Xu, Yujuan Guan, Naling Zhu, Jianping Li, Zhiwei Fu, and Shixing Tang

We expand screening of a novel human pegivirus, HPgV-2, in China. Our results indicate the rarity of HPgV-2 infection in the general population and tight association with hepatitis C virus (HCV), in particular with HCV/HIV-1 coinfection. HPgV-2 may not worsen liver damage.

36 Relationship Between Viremia and Specific Organ Damage in Ebola Patients: A Cohort Study
Simone Lanniti, Gina Portiella, Francesco Vairo, Gary P. Kobinger, Antonio Pesenti, Martin Langer, Soccoh Kaba, Giorgio Broggiato, Jackson Amone, Concetta Castilletti, Rossella Miccio, Maria Rosaria Capobianchi, Gino Strada, Alimuddin Zumla, Antonino Di Carlo, and Giuseppe Ippolito; for the INMI-EMERGENCY EBOV Sierra Leone Study Group

The pathogenesis of Ebola virus disease on specific organ damage remains poorly understood. This study provides evidence to support that Ebola virus may have a direct role in the muscular damage and in the imbalance of the coagulation system.
In 2015–2016, a large mumps outbreak occurred in a highly vaccinated population. Fewer cases occurred overall and in the target population.

Propionibacterium avidum: A Virulent Pathogen Causing Hip Periprosthetic Joint Infection

We describe 13 periprosthetic joint infections (PJIs) caused by Propionibacterium avidum. The majority were hip-associated and occurred after hip arthroplasty surgery using an anterior surgical approach. Upon phylogenetic analysis, isolated strains clustered with P. avidum PJI strains from Sweden.

A Healthcare Improvement Intervention Combining Nucleic Acid Microarray Testing With Direct Physician Response for Management of Staphylococcus aureus Bacteremia

A healthcare improvement initiative combining rapid diagnostic testing for Staphylococcus aureus bacteremia with mandatory infectious diseases consultation, including bedside response, was associated with improved management and outcomes compared with traditional culture and passive antimicrobial stewardship.

Cost Drivers of a Hospital-Acquired Bacterial Pneumonia and Ventilator-Associated Bacterial Pneumonia Phase 3 Clinical Trial

A hospital-acquired and ventilator-associated bacterial pneumonia phase 3 clinical trial cost model estimates costs at $89,600 per patient. The biggest cost driver is screen failure rates. Strategies to decrease screen failures are needed to improve the return on investment of these critically important studies.

Mumps Outbreak in a Highly Vaccinated University-Affiliated Setting Before and After a Measles-Mumps-Rubella Vaccination Campaign—Iowa, July 2015–May 2016

In 2015–2016, a large mumps outbreak occurred in a highly vaccinated university population. A broad additional-dose measles-mumps-rubella vaccination campaign targeted students aged <25 years. After the campaign, fewer cases occurred overall and in the target population.

Improvement in Diagnosis of Histoplasma Meningitis by Combined Testing for Histoplasma Antigen and Immunoglobulin G and Immunoglobulin M Anti-Histoplasma Antibody in Cerebrospinal Fluid

Improvements in the immunologic tests performed on cerebrospinal fluid have increased the sensitivity and reduced the turnaround time for diagnosis of central nervous system histoplasmosis over prior antigen and antibody detection methods and culture.

In- and Out-of-hospital Mortality Associated with Seasonal and Pandemic Influenza and Respiratory Syncytial Virus in South Africa, 2009–2013

Seasonal influenza and RSV were associated with 23.0 and 13.2 all-cause deaths/100,000 population annually. The peak mortality rate was in the elderly for influenza and in infants for RSV. And 63% of seasonal influenza and 48% of RSV-associated deaths occurred out-of-hospital.

Epidemiology, Clinical Features, and Outcome of Infective Endocarditis due to Abiotrophia Species and Granulicatella Species: Report of 76 Cases, 2000–2015

Abiotrophia and Granulicatella infective endocarditis (IE) presents as a typical subacute IE, frequently requiring surgery. Clinical presentation, evolution, and outcome are quite similar for both genera. Overall mortality is 9.2%, relatively low compared with other IE causes.

Higher Mortality Despite Early Antiretroviral Therapy in Human Immunodeficiency Virus and Hepatitis B Virus (HBV)–Coinfected Patients With High HBV Replication

HIV and hepatitis B virus (HBV) coinfected patients could benefit more from immediate versus deferred antiretroviral therapy (ART). However, in this randomized-control trial from sub-Saharan Africa, higher mortality was observed in coinfected patients with elevated HBV replication despite earlier ART.
Effect of Maternally Derived Anti-protein and Anticapsular IgG Antibodies on the Rate of Acquisition of Nasopharyngeal Carriage of Pneumococcus in Newborns
John Ojal, David Goldblatt, Caroline Tigoi, and J. Anthony G. Scott
A strategy of maternal vaccination to protect newborns against carriage is likely to be successful if vaccine formulation is focused on enhancing specific anti-protein antibodies, or if the strategy induces very high anticapsular antibody concentrations, above natural maternally derived concentrations.

BRIEF REPORTS

Disability Among Ebola Survivors and Their Close Contacts in Sierra Leone: A Retrospective Case-Controlled Cohort Study
Soushieja Jagadess, Stephen Sevalie, Richard Fatoma, Foday Sesay, Foday Sahr, Brian Faragher, Malcolm G. Semple, Tom E. Fletcher, Ralf Weigel, and Janet T. Scott

Early Antibiotic Use After Fecal Microbiota Transplantation Increases Risk of Treatment Failure
Jessica R. Allegretti, Dina Kao, Jessica Sitko, Monika Fischer, and Zain Kassam

Influenza A(H5N1) Virus Infection in a Child With Encephalitis Complicated by Obstructive Hydrocephalus
Gannon Chau Kit Mak, Mike Yat-wah Kwan, Chris Ka Pun Mok, Janice Yee Chi Lo, Malik Peiris, and Chi Wai Leung

VIEWPOINTS

Call for Action: Invasive Fungal Infections Associated With Ibrutinib and Other Small Molecule Kinase Inhibitors Targeting Immune Signaling Pathways
Georgios Chamilos, Michail S. Lionakis, and Dimitrios P. Kontoyiannis

An increasing number of invasive fungal infections (IFIs) has been recently reported in patients with lymphoid malignancies treated with BTK inhibitors. The surge in development of small molecule kinase inhibitors requires increased awareness and novel preventive strategies for IFIs.

INVITED ARTICLE

HEALTHCARE EPIDEMIOLOGY

Machine Learning for Healthcare: On the Verge of a Major Shift in Healthcare Epidemiology
Jenna Wiens and Erica S. Shenoy
The appropriate application of machine learning to data in healthcare has the potential to transform patient risk stratification for infectious diseases. We present an introduction to machine learning basics for the healthcare epidemiologist.

PHOTO QUIZ

A Cunning Foe
(Answer on pages 156–7.)

CORRESPONDENCE

Urinary Lipoarabinomannan Detection and Disseminated Nontuberculous Mycobacterial Disease
Ankur Gupta-Wright, Andrew D. Kerkhoff, Graeme Meintjes, and Elizabeth L. Corbett

Reply to Gupta-Wright et al
Jeremy Stephen Nel, Prudence Ive, and Christopher Kirk Lippincott

The Critical Importance of Sampling Fraction to Inferences of Mycobacterium tuberculosis Transmission
Robyn S. Lee and Benjamin P. Howden

Reply to Lee and Howden
Abigail L. Manson, Thomas Abeel, James Galagan, Jagadish Chandrabose Sundaramurthi, Siva Kumar Shanmugam, Kannan Palaniyandi, Sujatha Narayanan, Soumya Swaminathan, and Ashlee M. Earl