ARLG Update
Antibacterial Resistance Leadership Group

To prioritize, design, and execute clinical research that will reduce the public health threat of antibacterial resistance

ARLG Update

Volume 2,
Number 2
May 07 2015

INSIDE THIS ISSUE

For more information about the ARLG, its leaders, or its current projects, please visit **arlg.org**

Meet our Committees

Diagnostics and Devices

Chair: Robin Patel


Dr. Robin Patel

The ARLG scientific agenda focuses on four high priority areas: infections caused by gram-negative bacteria, infections caused by gram-positive bacteria, primarily MRSA and VRE, stewardship of our remaining antibiotics, and **rapid diagnostics**. The objective of the Diagnostics and Devices Committee is to develop and evaluate rapid diagnostics for antibacterial resistance to expedite clinical trials and to inform appropriate use of antibacterial therapy in clinical practice with a goal of providing meaningful improvements in patient outcomes and/or impact on antibacterial resistance.

The Diagnostics and Devices Committee is soliciting clinical studies to:

- Evaluate methods or platforms, which may include biomarkers or host-response markers to rapidly detect and identify bacterial pathogens and infections (e.g., sepsis, lower respiratory tract infection). Approaches may include simple and rapid point-of-care diagnostics to detect specific bacteria and associated antibacterial resistance, guide antibacterial therapy, and/or support clinical trials.
- Evaluate rapid, accurate methods for antimicrobial susceptibility testing of cultured bacteria.

The long-term objectives of the Diagnostics and Devices Committee are to identify, develop, and design studies to validate diagnostics that will enable early detection of drug resistant bacteria in clinical trials to facilitate the conduct of such studies, to determine whether novel diagnostics for bacterial infections improve patient outcomes, reduce antibacterial resistance and/or lower cost of care, and to examine whether precisely targeted antibacterial therapy based on novel diagnostics is better than traditional, empirical approaches.

Committee Member	Institution
Robin Patel (Chair)	Mayo Clinic
Robert Bonomo	Case Western Reserve University
Angela Caliendo	Brown University
Scott Evans	Harvard University
Kimberly Hanson	University of Utah
Melissa Miller	University of North Carolina at Chapel Hill
Christopher Woods	Duke University

RADICAL
Antibacterial Resistance Leadership Group

ARLG Project Spotlight

RADICAL

A host-based mRNA classifier for differentiating viral and bacterial etiologies of acute respiratory tract infection (RADICAL)

Principal Investigator: Christopher W. Woods, MD, MPH


Dr. Chris Woods

The aim of the protocol is to design an accessible, rapid, near patient diagnostic that provides a binary "viral vs. bacterial" classification with a high degree of fidelity has the potential to impact inappropriate antimicrobial prescribing practices.

The overall purpose of this study is to aid in the development of better diagnostic tools for infectious patients. The study will test samples from up to 800 subjects (300 banked specimens, 500 prospectively collected specimens) with suspected acute respiratory tract (ARI) infection in order to determine the underlying etiology, collect data and outcomes from all standard of care evaluations and treatments, and conduct a post-hoc analysis of the accuracy and analytical characteristics of the host-based diagnostic test as well as potential impact on prescribing practices. Current enrollment is at 309 subjects.


Dr. Charlie Huskins

SCOUT-CAP
Antibacterial Resistance Leadership Group

ARLG Project Spotlight
SCOUT-CAP

A Phase IV Double-Blind, Placebo-Controlled, Randomized Trial to Evaluate Short Course vs. Standard Course Outpatient Therapy of Community Acquired Pneumonia in Children (SCOUT-CAP)

Principal Investigators: W. Charles Huskins, MD, MSc & Theoklis Zaoutis, MD, MCSE


Dr. Theo Zaoutis

A 2011 Infectious Diseases Society of America (IDSA) guideline for management of CAP in children provide recommendations for antibiotic therapy. The guideline identified clinical trials that provide information on the "shortest duration of therapy to decrease the development of antimicrobial resistance and the risk of antimicrobial toxicity" as a priority for future research.

The primary aim of SCOUT-CAP is to compare the proportion of treatment failures among children 6 months to <6 years of age with CAP assigned to short (5-day) vs. standard (10-day) course outpatient therapy with beta-lactam antibiotics through the Test-of-Cure Visit (TOC, Day 11-14 after starting antibiotic treatment).

To accomplish this, SCOUT-CAP has been designed as a multi-center, centrally randomized, double-blind, placebo-controlled non-inferiority clinical trial. The eligible population will be limited to children 6 months to <6 years of age with suspected bacterial pneumonia initially treated as outpatients using oral amoxicillin, amoxicillin-clavulanate or cefdinir. Children who receive 1 dose of intramuscular ceftriaxone as initial treatment as an outpatient, followed by continued treatment using an oral antibiotics listed above, are also eligible.

Recent Publications

Hamasaki T, Asakura K, Evans SR, Sugimoto T, Suzo T **Group-sequential Strategies in Clinical Trials with Multiple Co-primary Outcomes.** Stat Biopharm Res. 2015;7(1):36-54. PubMed ID: 25844122 PMCID: PMC4382106.

van Duin D, Cober E, Richter SS, Perez F, Kalayjian RC, Salata RA, Evans S, Fowler VG, Kaye KS, Bonomo RA **Impact of Therapy and Strain Type on Outcomes in Urinary Tract Infections Caused by Carbapenem-Resistant *Klebsiella Pneumoniae*.** J Antimicrob Chemother. 2015 Apr;70(4):1203-11 PubMed ID: 25492391 PMCID: PMC4356203.

Ericson JE, Thaden J, Cross H, Clark RH, Fowler V, Benjamin DK Jr, Cohen-Wolkowiez M, Hornik CP, Smith PB **No Survival Benefit with Empirical Vancomycin Therapy for Coagulase-negative Staphylococcal Bloodstream Infections in Infants.** Pediatr Infect Dis J. 2015 Apr;34(4):371-5. PubMed ID: 25760564 PMCID: PMC4357312.

Spellberg B, Barlett J, Wunderink R, Gilbert DN **Novel Approaches Are Needed to Develop Tomorrow's Antibacterial Therapies.** Am J Respir Crit Care Med. 2015 Jan 15;191(2):135-40. PubMed ID: 25590154 PMCID: PMC4347440.

Wright MS, Perez F, Brinkac L, Jacobs MR, Kaye K, Cober E, van Duin D, Marshall SH, Hujer AM, Rudin SD, Hujer KM, Bonomo RA, Adams MD **Population Structure of KPC-*producing Klebsiella pneumoniae* from Midwestern US hospitals.** Antimicrob Agents Chemother. 2014 Aug;58(8):4961-5. doi: 10.1128/AAC.00125-14. Epub 2014 Jun 9. PubMed ID: 24913165 PMCID: PMC4136011.

ARLG Update is a quarterly newsletter published by the Antibacterial Resistance Leadership Group, Copyright © 2014 Duke Clinical Research Institute. All issues are available online at www.arlg.org. This publication was supported by the National Institute of Allergy and Infectious Diseases of the National Institutes of Health under Award Number UM1AI104681. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.