ARLG
Antibacterial Resistance Leadership Group

October 2023
Q4 Newsletter

Welcome to the ARLG Newsletter! Here, you will receive important updates from ARLG regarding recent events, grants, publications, and the committees that help us work toward our mission: to prioritize, design, and execute clinical research that will impact the prevention, diagnosis, and treatment of infections caused by antibiotic-resistant bacteria.

Get Involved with ARLG

ARLG continuously accepts proposals for clinical studies designed to prevent, diagnose, treat, or eradicate antibiotic-resistant bacterial pathogens. We also award grants and fellowships to qualified investigators. If you are interested in getting involved with ARLG, apply now or contact us for more information.

Submit a Proposal

Contact Us

News

ARLG Spotlight - Michael Woodworth, MD, MSc, Emory University Silver Pear Mentoring Award Recipient

Michael Woodworth, MD, MSc, Vice-Chair of ARLG Mentoring Committee and former ARLG fellow, has been honored with the Shanthi V. Sitaraman Silver Pear Mentoring Award for Research by Emory University School of Medicine. This accolade recognizes his exceptional mentorship to early-career mentees, particularly Ahmed Babiker, an ARLG Early Faculty Seedling Award recipient. Dr. Woodworth's research focuses on microbiome therapeutics, such as fecal microbiota transplantation (FMT), for eradicating multi-drug resistant organisms in the intestines.

Read more

Tori Kinamon Featured in BBC StoryWorks' Film "Race Against Resistance"

ARLG Innovations Working Group Member Tori Kinamon is featured in the BBC StoryWorks film "Race Against Resistance: The Life and Death Struggle to Save Antibiotics." The documentary was funded by the AMR Action Fund with support from Shionogi, Pfizer, and MSD. It addresses the global threat of antibacterial resistance (AR) and includes personal stories of AR survivors, highlighting Kinamon's own journey from MRSA survivor to MD Candidate and infectious diseases researcher.

Read more

DOTS Study Hits Enrollment Milestone

The Dalbavancin as an Option for Treatment of *Staphylococcus aureus* Bacteremia (DOTS) Study has successfully enrolled 200 participants with *S. aureus* bloodstream infections, meeting its enrollment target in July 2023. *S. aureus* infections are often life-threatening and antibiotic-resistant, typically requiring a prolonged IV antibiotic treatment. Dalbavancin, a long-acting antibiotic, offers a unique treatment approach, administered as two IV doses one week apart, eliminating the need for central catheters. The study, led by ARLG Primary Investigator Thomas Holland, MD, aims to evaluate Dalbavancin's safety and efficacy in treating *S. aureus* bacteremia, potentially transforming its management.

Read More

ARLG Partners with Biomeme on Study of New Diagnostic Tool to Tackle AR

In support of the Scientific Agenda to prioritize novel diagnostics, ARLG is partnering with

Biomeme on the RADICAL 510(k) Study. This study aims to assess Biomeme's new test that detects bacterial or viral infections by analyzing host gene expression in blood. Quick and accurate diagnosis can help physicians tailor effective treatment plans, reducing unnecessary antibiotic use and improving stewardship. ARLG Primary Investigators Gayani Tillekeratne, MD and Thomas Holland, MD are leading the study, and this collaboration aims to enhance diagnostic tools in the fight against antibacterial resistance.

Read more

SHREC Study Summary Now Available


SUMMARY
OF RESULTS

SHREC
Antibacterial Resistance Leadership Group

The Antibacterial Resistance Leadership Group (ARLG) funds, designs, and conducts clinical research that will help prevent, diagnose, and treat infections caused by bacteria that are resistant to antibiotics.

The ARLG, along with the team of study doctors, scientists, and researchers, are pleased to describe the results from a study focused on antibiotic review strategies in community hospitals to prevent overuse of antibiotics.

WHAT IS THE STUDY TITLE?
Clinical Impact of Ceftriaxone Resistance in *Escherichia coli* Bloodstream Infections: A Multicenter Prospective Cohort Study

WHAT IS THE PURPOSE OF THE RESEARCH? WHAT IS THE PRIMARY ENDPOINT?

The purpose of this study was to compare the clinical outcomes of two groups of patients with infections in their blood from a bacterium called *Escherichia coli* or *E. coli* for short. The two groups included patients who either had a type of *E. coli* that responded to an antibiotic called ceftriaxone or a type of *E. coli* that was resistant to treatment with ceftriaxone. Patients in the latter group received antibiotics other than ceftriaxone to treat their infection.

Clinical outcomes were described using a method called Desirability of Outcome Ranking (DOOR), where outcomes ranged from alive with no events (such as remaining in or readmission to the hospital) to death within 30 days after diagnosis.

The main objective of the study was to compare the clinical outcomes of both groups of patients 30 days after being diagnosed with *E. coli* infection based on the DOOR ranking.

WHY WAS THIS RESEARCH CONDUCTED? WHAT IS THE RATIONALE?

E. coli infections are one of the most common types of bacterial infections found in the bloodstream. Ceftriaxone is used to treat many kinds of bacterial infections, including *E. coli* infections in the blood. However, there is a growing number of *E. coli* infections in the blood that are resistant to ceftriaxone in the United States.

Studies looking at the clinical outcomes of patients with *E. coli* infections in the blood have shown that patients with infections that do not respond to treatment with ceftriaxone do worse than those with infections that do respond. It isn't clear, though, if those worse outcomes are related to other factors like delays in treatment and problems with the immune system. Therefore, a prospective study was designed that accounted for other possible contributing factors.

MANUSCRIPT OF PRIMARY RESULTS
https://pubmed.ncbi.nlm.nih.gov/36381622/

WHY IS THIS RESEARCH IMPORTANT TO PATIENTS, CLINICIANS, AND OTHER RESEARCHERS?

It's important to find out whether *E. coli* infections of the bloodstream that do not respond to ceftriaxone unfavorably affect a patient's outcomes.

WHEN DID THE RESEARCH TAKE PLACE?

Between November 12, 2020 and April 28, 2021

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A lay summary of results for the **S**tudy of **H**ighly **R**esistant ***E**scherichia **C**oli* (SHREC) is now available! SHREC compared the clinical outcomes of patients with *E. coli* blood infections that were susceptible to the antibiotic ceftriaxone to those of patients with ceftriaxone-resistant *E. coli* infections. *E. coli* infections are one of the most common types of bacterial infections found in the bloodstream, and ceftriaxone is commonly used to treat such infections. The number of *E. coli* bloodstream infections that are resistant to ceftriaxone in the United States has grown.

Clinical outcomes of 300 adult and pediatric participants across the U.S. were described in the study using the Desirability of Outcome Ranking (DOOR) method, where outcomes ranged from alive with no events to death within 30 days after diagnosis. Results showed that participants with ceftriaxone-resistant *E. coli* infections had overall worse clinical outcomes than participants with ceftriaxone-susceptible infections. Participants with ceftriaxone-resistant *E. coli* infections tended to be less healthy at the onset of the study though, which is thought to be the primary reason for the worse outcomes. These findings indicate that being infected with a ceftriaxone-resistant *E. coli* may impact quality of life more so than infection with ceftriaxone-susceptible *E. coli*.

Read More

Events

IDWeek 2023:
Featured ARLG Sessions and Posters

It's that time of year again! IDWeek 2023 is here and many of ARLG's top leaders and experts are featured, discussing the latest AR topics.

Don't miss Sara Cosgrove, MD, ARLG member and Director of the Johns Hopkins Hospital Department of Antimicrobial Stewardship Program, as the SHEA Lectureship featured speaker Oct. 13 from 4:45 – 6:00 p.m. The SHEA Lectureship Award is given in recognition of a senior investigator's career contributions to healthcare epidemiology and infection prevention and control.

Whether you are attending the event virtually or in person, use our guide of sessions and posters to plan ahead.

Learn more

Study Milestones

View recent ARLG study updates.

FAST	**F**ast **A**ntibiotic **S**usceptibility **T**esting for gram-negative bacteremia	Site Start-up
OPTIMIZE-GNI	**Optimiz**ation of Beta-lactam Dosing in Critically-Ill Patients with Suspected or Documented Antimicrobial Resistant **G**ram-**N**egative **I**nfections with Cystatin C	Protocol Development
RADICAL 510(k)	**Ra**pid **D**iagnostic **i**n **C**ategor izing **A**cute **L**ung Infections	Protocol Finalized-Start-up
REPROCESS	**R**acial Dispariti**E**s in Carba**P**enem-**R**esistant Bacteria: Epidemi**O**logy and **O**ut**C**om**E**s of U**S** Patient**S**	Study Design

ESCAPED	**E**merging ***S**taphylococcus **a**ureus* and **C**urrent **A**ntimicrobial **P**atterns in **E**mergency **D**epartments	Study Design
DARMA	**D**isparities in **A**ntibacterial **R**esistance: A Series of **M**eta-**A**nalyses	Study Design

Go to the ARLG Studies page for more milestones and updates!

Learn More

Recent Publications

View the following recent ARLG publications.

Boutzoukas AE, Komarow L, Chen L, Hanson B, Kanj SS, Liu Z, Salcedo Mendoza S,Ordonez K, Wang M, Paterson DL, Evans S, Ge L, Giri A, Hill C, Baum K, Bonomo R, Kreiswirth B, Patel R, Arias CA, Chambers HF, Fowler VG Jr., van Duin D; on behalf of the Antibacterial Resistance Leadership Group and Multi-Drug Resistant Organism Network Investigators. International epidemiology of carbapenemase-producing Escherichia coli isolates. Clin Infect Dis. 2023 Aug 22;77(4):499-509. doi: 10.1093/cid/ciad288.

Kinamon T, Gopinath R, Waack U, Needles M, Rubin D, Collyar D, Doernberg SB, Evans S, Hamasaki T, Holland TL, Howard-Anderson J, Chambers H, Fowler VG Jr., Nambiar S, Kim P, Boucher HW. Exploration of a Potential DOOR Endpoint for Complicated Intra-Abdominal Infections Using Nine Registrational Trials for Antibacterial Drugs. Clin Infect Dis. 2023 Aug 22;77(4):649-656. doi: 10.1093/cid/ciad239.

Rouphael N, Winokur P, Keefer MC, Traenkner J, Drobeniuc A, Doi Y, Munsiff S, Fowler VG, Evans S, Oler RE, Tuyishimire B, Lee M, Ghazaryan V, Chambers HF; for the DMID 15-0045 Study Group. Daily Fosfomycin Use for Complicated Urinary Tract Infections. mBio. 2023 Sep 12;e0167723. doi: 10.1128/mbio.01677-23. Online ahead of print.

Cuello L, Alvarez Otero J, Greenwood-Quaintance KE, Hanson B, Chen L, van Duin D, Komarow L, Ge L, Lancaster ZD, Gordy GG, Schuetz AN, Patel R. Poor Sensitivity of the MALDI Biotyper(r) MBT Subtyping Module for Detection of Klebsiella pneumoniae Carbapenemase (KPC) in Klebsiella species. Antibiotics. 2023 Sep 20;12(9):1465. doi: 10.3390/antibiotics12091465.

Wang M, Ge L, Chen L, Komarow L, Hanson B, Reyes J, Cober E, Alenazi T, Zong Z, Xie Q, Liu Z, Li L, Yu Y, Gao H, Kanj SS, Figueroa J, Herc E, Cordova E, Weston G, Tambyah PA, Garcia-Diaz J, Kaye KS, Dhar S, Munita JM, Salata RA, Vilchez S, Stryjewski ME, Villegas Botero MV, Iovleva A, Evans S, Baum K, Hill C, Kreiswirth BN, Patel R, Paterson DL, Arias CA, Bonomo RA, Chambers HF, Fowler VG Jr., Satlin MJ, van Duin D, Doi Y, Mutli-Drug Resistant Organism Network Investigators. Clinical Impact of Carbapenem-Resistant Acinetobacter baumannii Infection: A Snapshot from an International Cohort. Clin Infect Dis. 2023 Sep 20;ciad556. doi: 10.1093/cid/ciad556. Online ahead of print.

Howard-Anderson J, Hamasaki T, Dai W, Collyar D, Rubin D, Nambiar S, Kinamon T,

Leister-Tebbe H, Hill C, Geres H, Holland TL, Doernberg SB, Chambers HF, Fowler Jr. VG, Evans SR, Boucher HW. Moving Beyond Mortality: Development and Application of a Desirability of Outcome Ranking (DOOR) Endpoint for Hospital-Acquired Bacterial Pneumonia and Ventilator Associated Bacterial Pneumonia. Clin Infect Dis. 2023 Sep 22;ciad576. doi: 10.1093/cid/ciad576. Online ahead of print.