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?
Targeted Reduction of Antibiotics using Procalcitonin in a multi-center, randomized, blinded, placebo-controlled, non-inferiority study of azithromycin treatment in outpatient adults with suspect Lower Respiratory Tract Infections (LRTI) and a procalcitonin level of < 0.1 ng/mL (TRAP-LRTI)

WHAT IS THE PURPOSE OF THE RESEARCH? WHAT IS THE PRIMARY ENDPOINT?
When a patient has a lower respiratory tract infection (LRTI) such as bronchitis or exacerbations of COPD, it can be difficult for the doctor to know whether a bacterium or a virus is the cause. This diagnosis is important because doctors typically treat a bacterial infection with an antibiotic, but antibiotics will not work on an infection caused by a virus.

Another reason doctors try to avoid unnecessary use of antibiotics is that it contributes to the rise of antimicrobial-resistant bacteria. These bacteria, also called superbugs, develop resistance to certain antibiotics, which can cause infections in the general population that are very difficult to treat.

One method that can sometimes help doctors find what caused an LRTI is to measure the concentration of a substance called procalcitonin in a patient’s blood sample. Often, higher levels of procalcitonin can mean that the infection is caused by a bacterium and that antibiotics may be helpful. Likewise, low procalcitonin levels can mean there is no infection or that the LRTI is caused by a virus and the patient is not likely to benefit from antibiotics.

Although this method can be helpful, it cannot provide a definite answer on whether a doctor should withhold antibiotics for a patient with an LRTI and low procalcitonin level.

The purpose of the TRAP-LRTI Study was to help researchers learn more about whether a low procalcitonin measurement can be used to identify patients who will not benefit from antibiotic treatment. The study measured the safety and effectiveness of an antibiotic called azithromycin compared to placebo (which looks like the study drug but contains no active ingredients) in patients with LRTI who had low procalcitonin levels.

Changes to your healthcare should not be made based on information in this summary without first consulting a doctor.
If you have questions about these results, speak with your doctor.
**WHAT'S NEXT?**

Researchers are encouraging more clinical trials similar to TRAP-LRTI to gather data for other tests that might be better than procalcitonin to guide antibiotic use. It is also important to evaluate other types of study participants including those with other kinds of infections. Research that builds on this data and includes other age groups such as infants and children would also provide important information.