

SUMMARY OF RESULTS



ACUMIN

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?

Pharmacokinetic and Pharmacodynamic Profiling of Minocycline for Injection following a Single Infusion in Critically Ill Adults in a Phase IV Open-Label Multicenter Study (ACUMIN)



MANUSCRIPT OF PRIMARY RESULTS OR CLINICAL STUDY REPORT.

<https://pubmed.ncbi.nlm.nih.gov/33168615/>

IS THE STUDY REGISTERED WITH CLINICALTRIALS.ORG?

NCT03369951

WHY WAS THIS RESEARCH CONDUCTED? WHAT IS THE RATIONALE?



Doctors have used minocycline for almost 50 years, but we don't know very much about how this drug works in critically ill patients hospitalized with serious infections. Most of the research on the correct dose for minocycline was done with healthy people. It's important for doctors to test how minocycline works in critically ill patients with infections to make sure it is safe and effective for critically ill patients too.



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

Minocycline, which is a type of tetracycline, is a drug doctors use to treat infections. In hospitals, minocycline is primarily used to treat patients with infections due to *Acinetobacter baumannii*. *Acinetobacter baumannii* is a highly antibiotic

resistant bacteria that causes infections in the blood, urinary tract, and lungs (pneumonia), or in wounds in other parts of the body.

Acinetobacter infections typically occur in hospitalized patients who are in intensive care units and are on breathing machines (ventilators). The purpose of this research study was to determine if current dosing recommendations for minocycline are adequate for treating patients with infections due to *Acinetobacter baumannii*.



WHEN DID THE RESEARCH TAKE PLACE?

March 2018
to July 2019

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.



ARLG

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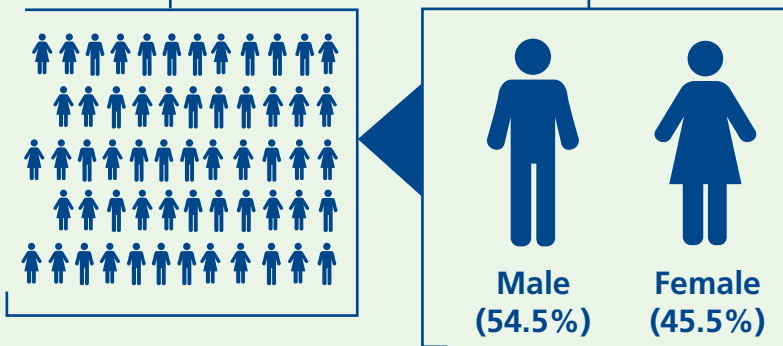


WHO WAS INVOLVED?

58 people participated in this study in 15 research sites across the United States. Study participants were in the hospital Intensive Care Unit because they had a serious bacterial infection that needed treatment.

Adult patients ages 23 to 89 were included. The average age was 61.7

58 Participants



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

Infections with the *Acinetobacter baumannii*

bacteria are resistant to many antibiotics. Infections with this type of bacteria are rising around the world. The Centers for Disease Control (CDC) has called this bacteria an urgent public health threat. Doctors use minocycline to treat patients with *Acinetobacter baumannii* infections but the best dose in critically ill patients is unclear. This study will help doctors decide how much minocycline to give to patients.



WHAT HAPPENED DURING THE STUDY?

A blood sample was taken from the patient before they were given minocycline

Then doctors gave the patient the current standard 200mg dose of minocycline intravenously (in their vein)

A blood sample was taken from the patient 6 more times at 1, 4, 12, 24, 36, and 48 hours after the patient was given minocycline

Researchers measured how much minocycline was in each blood sample



WHAT WERE THE RESULTS?

Researchers used the information they collected to create a pharmacokinetic model. A pharmacokinetic model is a type of a statistical

model that researchers use to describe the profile of drugs in the blood of patients over time. In this case, the pharmacokinetic model helped the researchers determine if current dosing recommendations for minocycline are adequate for treating patients with infections due to *Acinetobacter baumannii*.

Researchers learned that for 1 in 3 patients, 200mg of minocycline was not enough to treat the *Acinetobacter baumannii* infection. Researchers think that 400mg of minocycline would be needed to get better treatment results but further studies are needed to determine if higher doses are minocycline are safe and effective.



HOW WILL THE RESULTS HELP PATIENTS AND DOCTORS?

Doctors often use minocycline to treat patients with *Acinetobacter baumannii* infections. This study will help doctors decide how much minocycline to give their patients in order to get the best treatment results.



WHAT'S NEXT?

Researchers recommend testing higher doses of minocycline in critically ill patients to determine if higher doses are safe and effective.

