SUMMARY
OF RESULTS

RAPIDS-GN
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 comparing the speed and accuracy of testing methods in getting information to doctors on what antibiotics to prescribe for bloodstream infections.

The ARLG appreciates the time and commitment of the research participants who provided samples to this study and, in doing so, played such an important role in advancing medical science.

WHAT IS THE STUDY TITLE?

RAPid IDentification and Susceptibility testing for Gram Negative bacteremia (RAPIDS-GN)

WHAT IS THE PURPOSE OF THE RESEARCH?

The purpose of this study was to learn if a rapid testing device would be faster than standard testing in getting doctors information they need to treat patients with bloodstream infections caused by gram-negative bacteria. In order to treat these infections, doctors need to know:

1) what bacteria is causing the bloodstream infection and
2) the most effective antibiotic to kill the bacteria.

Researchers looked at how long it took for doctors to make a change in antibiotic treatment during the first three days after the patient was enrolled in the study.

WHAT IS A BLOODSTREAM INFECTION?

INFECTION CAUSED BY THE PRESENCE OF BACTERIA IN THE BLOOD.

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.

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WHY WAS THIS RESEARCH DONE?

Gram-negative bacteria are a problem worldwide because they cause up to 33% of bloodstream infections. If these infections are not properly treated they can lead to death.

In order to treat bloodstream infections, doctors need to know what type of bacteria is causing the infection. This information helps doctors prescribe the right antibiotic to kill the bacteria. Time is important because the sooner the correct antibiotic is given, the faster the patient will get better and the infection will be cured.

Results from standard testing typically take two to four days. Results from rapid testing can be available in hours.

This study was conducted to learn if doctors could prescribe the correct antibiotic faster when a rapid-testing device was used instead of standard testing.

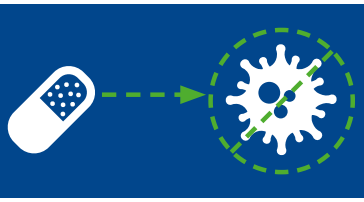
WHY IS THIS RESEARCH IMPORTANT?

When a patient presents with symptoms of a bloodstream infection, doctors use experience and knowledge to prescribe the drug that will most likely treat the infection. Doctors make this decision before the specific bacteria causing an infection is known.

This initial course of antibiotics may be ineffective in treating the infection or may be unnecessarily broad increasing the risk of bacteria that become resistant to the antibiotic.

If doctors could get information about the bacteria causing the infection in hours rather than days, they could start treatment with the right antibiotic sooner.

DRUG-RESISTANT BACTERIA ARE BACTERIA THAT ARE NOT CONTROLLED OR KILLED BY USUAL ANTIBIOTICS.



WHEN DID THE RESEARCH TAKE PLACE?

October 2017 – October 2018

WHO WAS INVOLVED?

The study took place at two sites in the United States and included blood samples from 448 people who had bloodstream infections caused by gram-negative bacteria. Two hundred twenty-six (226) blood samples were tested by the standard testing method and two hundred twenty two (222) were tested using a rapid testing device.

WHAT DID RESEARCHERS LEARN FROM THIS STUDY?

In the group of patients who had their blood tested using the rapid testing device, doctors made antibiotic changes nine hours faster and antibiotic changes targeting gram-negative bacteria were made 24 hours faster than the standard testing group. In patients who had antibiotic-resistant bacteria and needed a broader antibiotic than what was initially prescribed, the antibiotic change was made 43 hours faster if the blood was tested with the rapid testing device.

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HOW WILL THE RESULTS HELP PATIENTS AND DOCTORS?

When compared to standard testing, rapid testing gives doctors the information they need faster so they can make changes to the antibiotic treatment quicker. These results may favor the use of a rapid testing device to diagnose bloodstream infections.

WHAT'S NEXT?

Rapid testing devices are typically more expensive than standard testing. More research needs to be done on the cost of using rapid tests.

The effect of rapid testing may be more important for infections caused by bacteria that are resistant to many commonly used antibiotics. Additional research in infections caused by antibiotic-resistant bacteria is needed.

The rapid testing device does not test for all types of gram-negative bacteria and is not able to test all antibiotics that could kill the bacteria. So, it cannot completely replace standard testing. Further studies should look at expanding rapid testing systems to include more types of bacteria and antibiotics.

WHERE CAN I LEARN MORE?

Read the published paper.

Read about the study on clinicaltrials.gov.

Visit the ARLG website.

This summary was completed in July 2020. Newer information generated since this summary was written may now exist.

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