Combination therapy provides hope for cure of dangerous infections of cystic fibrosis patients(2)

EurekAlert

Hamilton, ON (April 24, 2011) An over-the-counter drug used to treat diarrhea combined with minocycline, an antibiotic used to treat bacterial infections, could one day change the lives of those living with cystic fibrosis.

Researchers at McMaster University have discovered this creative approach to tackle antibiotic resistance to bacterial infections, a frequent complication of those with cystic fibrosis. Cystic fibrosis is the most common, fatal genetic disease affecting Canadian children and young adults.

"Antibiotic resistance is having a profound effect on known drugs that are used to treat illness and disease," says researcher Eric Brown, professor and chair of McMaster's Department of Biochemistry and Biomedical Sciences and member of the Michael G. DeGroote Institute for Infectious Disease Research (IIDR).

"Previous advances in treating cystic fibrosis have been in managing infection, but since infectious organisms are increasingly developing resistance to antibiotics, the importance of providing new treatments is more important than ever."

Brown, who made the discovery in collaboration with McMaster researchers Gerry Wright and Brian Coombes, found that the combination of these two drugs inhibits the growth of bacteria after screening a collection of previously approved non-antibiotic drugs within McMaster's Centre for Microbial Chemical Biology.

Their screening revealed that this particular combination using the anti-diarrhea drug loperamide increases the efficacy of the antibiotic minocycline against multidrug resistant P. aeruginosa.

"Typically it takes 13 to 15 years to develop a drug," says Brown. "We think that this approach could cut drug development time in half."

"These exciting research findings hold promise that a new, safer method for treating devastating lung infections in people with cystic fibrosis may be just around the corner," says Maureen Adamson, CEO, Cystic Fibrosis Canada, a charity that partnered with the Canadian Institutes of Health Research to fund the project. "These findings could impact healthcare worldwide as antibiotic resistance is a tremendous threat to many populations."

Wright, scientific director of the IIDR, adds that McMaster is one of the only universities to look at the combination of antibiotic and non-antibiotic drugs in combating bacterial resistance. But he believes this marks the beginning of using combination therapy as a more effective way to treat disease.

"This finding has opened doors to discovering the abilities of drugs when combined," he says. "Not only has antibiotic resistance become a growing threat to managing illness and disease, the use of combination therapy has added benefits. These combinations might be a way to selectively target bacteria and combat disease and leave so-called "good bacteria" intact to do other things. In effect you use fewer antibiotics to get the same effect."

SOURCE [1]

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