

Virus therapy to attack superbugs

April 21 2016, by Tania Bawden

VIRUSES specifically designed to battle superbugs are being trialled in a South Australian hospital.

Flinders University scientists are looking to bacteriophages – highly specific viruses - as the as the best way to attack antibiotic-resistant bacterial superbug infections.

The already proven phage-based therapies could help treat numerous infectious diseases including staphylococcus aureus (Golden Staph) and typhoid fever.

The South Australian scientists have been working with AmpliPhi Biosciences to research phage-based treatments and began human trials at The Queen Elizabeth Hospital earlier this year.

Flinders University researcher Peter Speck said the need to find an alternative to antibiotics was of vital importance, forcing scientists to revisit solutions to infectious diseases that pre-dated antibiotics.

"There is now a problem with antibiotics becoming less and less effective in treating bacteria and infections," Dr Speck said.

"In view of the looming crisis of antimicrobial resistant bacteria, all possibilities for the use of phage therapy must be contemplated."

Superbugs are strains of bacteria that have developed immunity to antibiotics and account for about 700,000 deaths a year worldwide.

World health authorities are forecasting that antibiotic resistance will cause more deaths per year than cancer by 2050, with one estimate at 10 million by 2050 compared to eight million for cancer.

Dr Speck said bacteriophages or phages were viruses that attacked bacterial cells and disrupted bacterial metabolism.

He said that phage-therapy could be applied intravenously and attack bacterial infections like Golden staph.

"We have been working on this for some years and I think it is the most advanced clinical trial of bacteriophage in the world today," Dr Speck said.

"At the moment we are trialling phage-therapy on sinus infections, but if you look back in the literature you see that in the 1940s they were very effectively used.

"Bacteriophage is highly species specific so a phage directed against golden staph would only kill golden staph."

Dr Speck said the use of bacteriophages to treat infectious diseases was an old method that was discontinued after the rise of antibiotics in the 1950s.

Phage-therapy trials are underway at The Queen Elizabeth Hospital in South Australia's capital Adelaide earlier this year.

Dr Speck said he hoped to expand the research and look at other infectious diseases.

"Another big potential area where phages could be used is in infections where bacteria in the blood are a threat, so intravenous phage use could

deliver a benefit," he said.

"The potential objections to the IV use of phages must be viewed in the context of the high mortality associated with certain severe [infectious diseases](#) such as typhoid and SA bacteraemia, both of which are reportedly treatable though IV phage therapy."

Dr Speck said he hoped the trial results would demand more attention from governments.

The research was based on Dr Speck's article *Safety and efficacy of phage therapy via the intravenous route* that was published in the Oxford Journals Federation of European Microbiological Society Microbiology Letters.

Provided by Flinders University

Citation: Virus therapy to attack superbugs (2016, April 21) retrieved 25 April 2024 from <https://phys.org/news/2016-04-virus-therapy-superbugs.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.