Double-dose antibiotic treatment and facial cleanliness show promise for trachoma control

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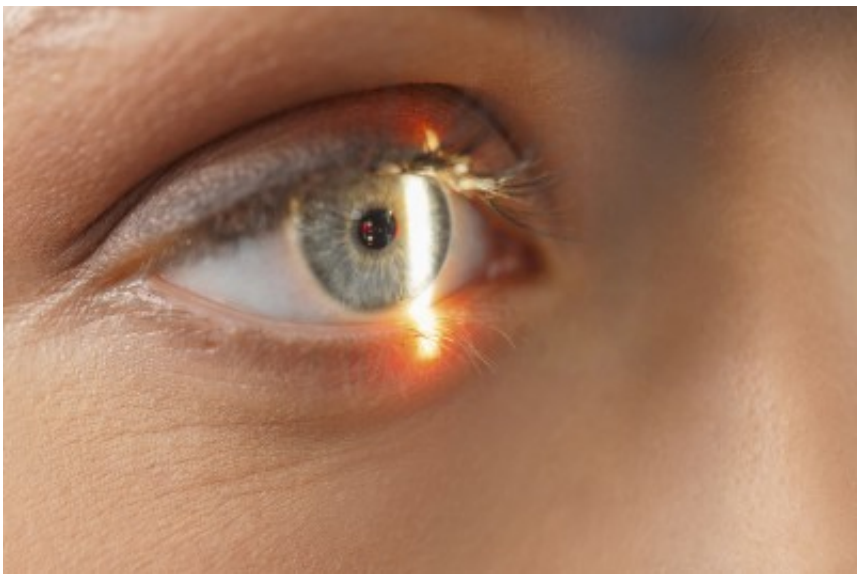

A revelatory new study out of Monash University, in collaboration with the London School of Hygiene and Tropical Medicine (UK), has highlighted that an annual double-dose of antibiotic treatment shows promise for controlling the neglected tropical disease (NTD) trachoma, the world's leading infectious cause of preventable blindness. NTDs are the most common afflictions of the world's poorest people, affecting more than half a billion children around the world. While trachoma is

most prevalent in sub-Saharan Africa, Australia remains the only developed country to continue to have the disease as a public health problem.

In the study, published in the open access journal *BMC Medicine*, the researchers also suggest that enhanced facial cleanliness and environmental improvements are needed for sustained disease control, particularly in areas of high transmission intensity.

"We used a mathematical model to investigate the projected impact of various antibiotic distribution strategies, with and without enhanced facial cleanliness and environmental improvements," said Dr Amy Pinsent, Research Fellow in the Epidemiology Modelling Unit in the School of Public Health (SPHPM) at Monash.

The findings suggest that administering a second dose of antibiotic treatment two weeks after the first could be more successful than existing single-dose strategies, the impact of this alternative treatment strategy is likely to be most profound in individuals with high bacterial loads. This is because the first dose of antibiotic acts to lower the initial bacterial load, increasing the chance that infection will be fully resolved when a second dose is administered two weeks later.

"Our investigation suggested that the probability of infection being transmitted between individuals was likely to be reduced following the implementation of enhanced facial cleanliness and environment improvements. However, in the absence of implementing these intervention re-emergence of infection in the community following antibiotic treatment was more likely," said Dr Pinsent.

"Our research demonstrates the possible impact of this intense two-pronged approach to tackling trachoma as public health issue, which affects more than 41 million people worldwide," said Dr Pinsent.

Moreover, the logistics of treating twice within a short time period mean that fewer resources would be required than if treatment was conducted at six-monthly intervals.

"The projected impact of this alternative antibiotic distribution strategy in combination with enhanced facial cleanliness and environmental improvements provides a clear rationale for this strategy to be tested in a clinical trials setting," said Dr Pinsent.

More information: Amy Pinsent et al. Enhanced antibiotic distribution strategies and the potential impact of facial cleanliness and environmental improvements for the sustained control of trachoma: a modelling study, *BMC Medicine* (2016). DOI: 10.1186/s12916-016-0614-6

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