Time to tackle cryptosporidiosis: Scientists call for crypto cure

November 13 2013, by April Reese Sorrow

Boris Striepen, a Georgia Research Alliance Distinguished Investigator in UGA's Center for Tropical and Emerging Global Diseases, and cellular biology doctoral candidate Maria Francia work together to research ways to combat the parasites that cause malaria and toxoplasmosis.

A recent study involving more than 22,000 children in Africa and Asia revealed that the protozoan parasite *Cryptosporidium* is one of four pathogens responsible for the largest part of severe diarrhea in infants and toddlers.

Given that there is no fully effective drug or vaccine against "crypto," this is a worrying discovery, says Boris Striepen in a Comment piece in this week's Nature magazine. He notes, "The basic research tools and infrastructure needed to discover, evaluate and develop such interventions are mostly lacking."

Striepen, a professor and Georgia Research Alliance Distinguished Investigator at the University of Georgia Center for Tropical and Emerging Global Diseases, makes a plea for more research and funding to find effective treatment and prevention for crypto.

"There is a tremendous need and an opportunity for this research," Striepen said. "We knew this was an important disease for some time, but we didn't really understand the magnitude until the recent study. Learning that this is one of the main pathogens threatening small children, hearing the number of cases and deaths due to this parasite are so high came as a surprise."

Striepen and his group study parasitic microorganisms that include the causative agents for malaria, toxoplasmosis and cryptosporidiosis. His previous work has unlocked potential drug targets in these parasites.

Striepen said progress on infectious diseases is based on strong research models, something sorely lacking for crypto.

"At the moment, one thing we suggest here that is really missing is technology for genetic analysis and manipulation that allows us to track it more efficiently or make weakened strains for vaccine development," he said.

The current models used to study crypto are difficult. Striepen hopes technology transfer will aid research on crypto. "We need those tools for both fundamental discovery and applied bioengineering research," he

said. "They may enable both a therapy and a vaccine."

Striepen lays out in detail how researchers might obtain the right tools and financial backing to adopt a research approach that helps to prevent deaths caused by crypto.

"As well as potentially saving hundreds of thousands of young lives and reducing untold suffering for infants, children and parents," he argues, "bringing crypto research into mainstream microbiology could provide fundamental mechanistic insights into intestinal infections in general."

"It is a significant problem, a difficult problem," he said. "But, with the right tools and right support real progress can be made."

More information: To read the full article, see www.nature.com/news/parasitic- … osporidiosis-1.14138

Provided by University of Georgia