

# A boost of antibody kicks lingering infection

February 25 2010

---

(PhysOrg.com) -- Researchers have found that an antibody, which stimulates the immune system, can be used to improve health outcomes in the developing world.

Using mice as a model, researchers from the Queensland Institute of Medical Research (QIMR) have developed a more effective treatment against visceral leishmaniasis (VL) - a chronic disease which is responsible for over 40,000 deaths per year in countries such including China, India, Nepal and Bangladesh.

“Currently, there is no vaccine against VL, and the only treatment is a long course of toxic drugs, against which the parasite may become resistant,” said Dr Ashraf Haque from QIMR. “These drugs often have severe, even life-threatening side-effects.”

“The body’s immune system tries to fight VL however for various reasons it is unable to eliminate the infection. Treatment with this specific antibody stimulates the production of specific immune cells known as CD4+ effector T cells. This boosts the immune response which helps clear the parasite.”

The antibody, called glucocorticoid-induced TNF receptor (GITR), activates CD4+ T-cells and stimulates them to proliferate, while leaving Treg-cells or CD8+ T-cells unaffected.

“By increasing the natural [immune response](#), we can reduce the drug dose or shorten the time that patients had to take the toxic cocktail.”

The most exciting thing about this research is it may be applicable to many other chronic [infectious diseases](#) as well, such as tuberculosis.

“A human version of this antibody already exists, and is being tested by pharmaceutical companies for its potential to treat cancer. Hopefully our research will further advocate its use to reduce the suffering of VL patients in some of the poorest communities in the world.”

“Our next aim is to trial this antibody in human tissue culture, to see whether the GTR antibody will clear the VL infection in human tissues.”

The paper is published in the [Journal of Immunology](#) and is available online.

Visceral leishmaniasis (VL) is a chronic disease caused by *Leishmania infantum* or *Leishmania donovani*, and causes fever, anaemia, and swelling of the liver and spleen. It is transmitted by sandflies and occurs in tropical and subtropical climates. Most infections occur in China, Nepal, India, Bangladesh, Brazil and Sudan. VL is estimated to affect 500,000 people yearly and killing 40,000.

**More information:** [dx.doi.org/10.4049/jimmunol.0903080](https://doi.org/10.4049/jimmunol.0903080)

Provided by Queensland Institute of Medical Research

Citation: A boost of antibody kicks lingering infection (2010, February 25) retrieved 6 May 2024 from <https://medicalxpress.com/news/2010-02-boost-antibody-lingering-infection.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.