

Effective treatment for severe scrub typhus identified

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In news— A team of Indian scientists has identified a significantly more effective treatment for severe scrub typhus.

Key findings-

- The study, published in the New England Journal of Medicine (NEJM), shows that **treating patients with a combination of intravenous antibiotics doxycycline and azithromycin is more effective than the current monotherapy of using either drug alone.**
- Using data from the **Intravenous Treatment for Scrub Typhus (INTREST) clinical trial**, researchers from several Indian institutes compared the efficacy and safety of three 7-day intravenous antibiotic treatments (doxycycline, azithromycin, or a combination of both) in patients with severe scrub typhus.
- They found that **combination therapy was superior to therapy with intravenous doxycycline or azithromycin alone.**
- **INTREST is the largest-ever randomized controlled trial on the treatment of scrub typhus, and the only one on the treatment of severe scrub typhus.**
- Researchers do not know for certain why a combination of doxycycline and azithromycin should be more clinically effective in the treatment of severe scrub typhus than either of the drugs alone.
- The study found that when both azithromycin and doxycycline were administered together to patients with

severe scrub typhus, the bacteria were cleared away quicker and patients improved faster.

- This could be because doxycycline and azithromycin stop the bacteria from producing proteins through different, but complementary, mechanisms, the researchers said.
- **As a consequence the combination of the two drugs may have reduced bacterial growth and multiplication, leading to quicker control of bacterial growth** and more rapid resolution of symptoms, they said.
- The team at CMC Vellore collaborated with researchers at Mahidol Oxford Tropical Medicine Research Unit, Thailand, and Wellcome Trust Thailand Asia and Africa Programme for the study.

What is severe scrub typhus?

- Scrub typhus, also known as bush typhus, is a disease caused by a bacteria called *Orientia tsutsugamushi*.
- It is **transmitted to humans by bites from tiny infected mites.**
- Scrub typhus is a major public health threat in India, other South Asian countries, and around the tropics and kills an estimated 10 per cent of the approximately one million people infected by it every year.
- **Scrub typhus typically presents as a fever that may be associated with headaches, coughs,** shortness of breath, and brain symptoms, such as confusion and disorientation.
- **One-third of patients develop a severe disease that affects multiple organs in the body** and leads to lethally low blood pressures.
- **Death rates in severe diseases can reach up to 70% without treatment and 24% with treatment.**

DISEASE OVERVIEW

WHAT IS SCRUB TYPHUS?

O. tsutsugamushi is transmitted by chiggers (mite larvae), which feed on rodents such as rats, voles, and field mice. Human infection follows a chigger bite. These mites are vectors and a natural reservoir of *O. tsutsugamushi*.

SYMPTOMS TO LOOK OUT FOR

- > Fever, chills, headache and swollen lymph nodes
- > With onset of fever, the bite mark is visible
- > Some patients may exhibit rashes on the back, arms and legs
- > Some may have cough that may lead to pneumonitis if unattended

IF LEFT UNATTENDED

- > Pulse rate increases, blood pressure drops
- > Patients develop delirium and organ failure



TREATMENT

Largely antibiotics