

Scrub typhus: A case series

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Abstract

Context: Scrub typhus is an acute febrile illness caused by infection with a rickettsial bacteria namely *Orientia tsutsugamushi*. The rickettsia is transmitted from rodents to humans by the bite of a larval stage (chigger) trombiculid mite. **Objectives:** The objective of the present study was to present clinical manifestation, laboratory findings and treatment outcomes of scrub typhus in a tertiary care setting. **Methods:** This study describes the epidemiologic and clinical profile of eleven consecutive scrub typhus positive adults (08) and children (03) patients who were admitted in a Government Medical College, Nagpur. In all cases, diagnosis was based on detection of antibody against *Orientia tsutsugamushi* using serological ELISA test. **Results:** Among the eleven patients five were males and six were females. Their mean age was 45 ± 2.5 . Eschar, the pathognomic feature of scrub typhus was present in all the cases. Abdomen, nape of neck, ear lobe, groin and axilla were the observed sites of eschar. One death occurred during treatment on 16th day of admission. Disease occurred in persons who were engage in occupational or recreational behavior that brings them into contact with mite-infested habitats such as brush and grass. **Conclusion:** An early diagnosis and timely antibiotic therapy may prevent further complications. Information, Education and Communication (IEC) is the core for prevention and control of scrub typhus which should be performed on priority basis in special focus to rural areas.

Key words: Scrub typhus, ELISA, Information Education and Communication (IEC)

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INTRODUCTION

Scrub typhus is an acute febrile illness caused by infection with a rickettsial bacteria namely *Orientia tsutsugamushi*. The disease is widespread, extending from Japan to Australia and from India to the Pacific. It is prevalent in many parts of India and has been reported in the east, south and the Himalayas.¹ Scrub typhus continues to be a public health problem in Asia. It is estimated that about 1 billion people may be at risk for this disease with the annual incidence of one million new cases.² The rickettsia is transmitted from rodents to humans by the bite of a larval stage (chigger) trombiculid mite.³ After the initial infection the rickettsial spreads systemically and the infected person develops various

symptoms like fever, malaise, myalgia, rash, cough, lymphadenopathy and gastrointestinal disturbances. The disease response to antibiotics is excellent. Scrub typhus is difficult to recognize and diagnose because the symptoms and signs of the illness are often non-specific. The non-specific presentation and lack of the characteristic eschar in 40% patients makes the misdiagnosis and underreporting of scrub typhus common. On the other hand, diagnostic facilities are not available in much of its native range. Therefore, the precise incidence of the disease is unknown. An estimated one billion people are at risk for scrub typhus and an estimated one million cases occurs annually.⁴ Mortality rates in untreated patients range from 0-30%. The aim of the present study is to present clinical manifestation, laboratory findings and treatment outcomes of adult scrub typhus in a tertiary care setting.

METHODS

This study describes the epidemiologic and clinical profile of eleven consecutive scrub typhus positive adults (08) and children (03) patients who were admitted in a Government Medical College, Nagpur during the period of two months (August 2018 and September 2018). After complete physical examination, routine laboratory investigations like complete blood count, liver function

tests, and renal function tests were done in all patients. Peripheral smear for malarial parasite, serological test for dengue were done in all patients. In all cases, diagnosis was based on detection of antibody against *Orientia tsutsugamushi* using Serological ELISA test.

RESULTS

Among the eleven patients five were males and six were females. Their mean age was 45 ± 2.5 . All the patients had history of treatment by a primary before admission. Average length of stay in the hospital was 8 days with the range of 6-15 days. Fever was the chief presenting symptom in all the cases. Myalgia was present in all cases. One patient had thrombocytopenia with electrolyte imbalance while admission. Eschar, the pathognomic feature of scrub typhus was present in all the cases. Abdomen, nape of neck, ear lobe, groin and axilla were the observed sites of eschar. Partially distended gall bladder was present in one case and lymphadenopathy was present in three patients respectively. One case revealed cerebral oedema in CT scan brain. Chest examination revealed crackles/ronchi in two cases. One death occurred during treatment on 16th day of admission.

LABORATORY INVESTIGATIONS

Revealed lower side platlet count in one of the eleven cases. In all cases diagnosis of scrub typhus was made by serological ELISA test. Disease occurrence is more in September month and occurs in persons who engage in occupational or recreational behavior that brings them into contact with mite-infested habitats such as brush and grass.

DISCUSSION

Scrub typhus is widely endemic in Asia. In India, Scrub typhus has been reported in various areas especially the hilly regions of the Himalayas, Shimla, Assam, Jammu and Kashmir, West Bengal and Tamil Nadu. The causative organism is an intracellular gram-negative bacteria, *Orientia tsutsugamushi*. Humans are accidental hosts and the disease is transmitted through the skin by the bite of larval stage of infected trombiculid mites or chiggers.⁵ Similar findings were observed regarding bite mites or chiggers. Disease occurrence is more in rainy season and occurs in persons who engage in occupational or recreational behavior that brings them into contact with mite-infested habitats such as brush and grass. Clinical picture of scrub typhus include sudden onset of a high grade fever and associated headaches, myalgia, and regional lymphadenopathy.³ Similar findings were observed regarding occupational or recreational behavior. Necrotic eschar at the inoculating site of the mite is the

single most pathognomic feature of scrub typhus.⁶ The disease usually runs a benign course but complications are not uncommon and include myocarditis, pneumonia, meningoencephalitis, gastrointestinal bleeding, acute renal failure and respiratory distress. Doxycycline remains the antibiotic of choice for treatment of scrub typhus. Chloramphenicol, azithromycin and rifampicin are other antibiotics useful for the treatment of this infection.⁷

CONCLUSION

Scrub typhus is endemic in many parts of Maharashtra and all clinicians should be well aware of the disease. An early diagnosis and timely antibiotic therapy may prevent further complications. IEC activity is the core for prevention and control of scrub typhus which should be performed on priority basis in special focus to rural areas.

RECOMMENDATIONS

Information Education and communication is the core for prevention and control of scrub typhus which should be performed on priority basis in special focus to rural areas. IEC through various intersectoral coordination like gram panchayat, bachat gat, ASHA etc should be involved. In regular house to house survey there should be screening for scrub typhus too which will help for early detection and prompt treatment and reduce morbidity and mortality.

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