

SCRUB TYPHUS- A FORGOTTEN DISEASE- RE-EMERGENCESreemanta Madhab Baruah¹, Rashmi Rajkakati², Prajna Anirvan³¹Assistant Professor, Department of Medicine, Assam Medical College and Hospital, Dibrugarh.²Assistant Professor, Department of Biochemistry, Assam Medical College and Hospital, Dibrugarh.³Postgraduate Trainee, Department of Medicine, Assam Medical College and Hospital, Dibrugarh.**ABSTRACT****BACKGROUND**

Scrub typhus is a Rickettsial disease caused by *Orientia tsutsugamushi*. Although it is a neglected disease in India, in recent years there have been reports from several states of the country, indicating the resurgence of the disease.

Aim- To study the clinico-epidemiological pattern of scrub typhus among patients in Assam Medical College and Hospital, Dibrugarh, a tertiary care medical centre.

MATERIALS AND METHODS

Scrub typhus cases, suspected clinically and confirmed by IgM ELISA were analysed over a period of seven months.

RESULTS

Total number of cases was 19. The maximum number of cases was in the age group of 41-60 years (36.8%). Of the 19 cases, 17 were male (89.5%). 17 cases were reported from urban areas (89.5%). Fever was the most common symptom (100%), followed by altered sensorium (63.15%).

CONCLUSION

There has been a re-emergence of scrub typhus in this part of the country. Early diagnosis and prompt treatment are effective.

KEYWORDS

Orientia Tsutsugamushi, Eschar, ELISA, Doxycycline.

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BACKGROUND

Scrub typhus is a zoonotic disease, caused by *Orientia tsutsugamushi*, a Gram negative Proteobacterium belonging to the family Rickettsiaceae. It is transmitted through the bite of the chigger, which is the only form of the mite that can transmit the disease. It is prevalent in South-East Asia (India, Sri Lanka), Pacific islands, Northern Japan, China, Eastern Australia and Indian ocean (*tsutsugamushi* triangle). The prevalence of scrub typhus varies from 0-8% to 60% in different countries.¹ In India, no proper data is available, with prevalence ranging from 19% to 30% across regions.² Moreover, most cases are undiagnosed. Newly deforested areas for plantation which easily attract rodents are high risk areas for transmission of the disease. The organism multiplies in the endothelial cells of the capillaries causing a perivascular inflammatory reaction leading to organ damage.

Mild or subclinical cases are common. The clinical presentation begins as fever, headache and myalgia. A maculopapular rash appears by the fifth to seventh day and

usually fades by the seventh day. It can vary from subclinical cases to systemic involvement with severe complications. Diagnosis depends on strong clinical suspicion and laboratory confirmation.

MATERIALS AND METHODS

A total number of 19 cases of scrub typhus in the age group of 13-80 years presenting to Assam Medical College and Hospital, Dibrugarh, a tertiary medical centre, over a period of seven months from May, 2016 to November, 2016 were included in the study. Routine investigations were carried out and other causes of fever like Malaria, Dengue, Leptospirosis, enteric fever and Viral hepatitis were ruled out by appropriate tests. Diagnosis of scrub typhus was confirmed by IgM ELISA.

RESULTS

Of the 19 patients, 17 were male (89.4%). The maximum number of cases was present in the age group of 41-60 years (36.8%). 17 cases (89.4%) were reported from rural areas. Fever (100%) was the most common symptom followed by altered sensorium (63.15%), headache (36.84%), myalgia (31.5%) and cough (21.05%). The signs seen were jaundice (10.5%) and eschar (5.27%). Acute Kidney Injury was found in 21.05% cases. Seizure was present in 10.5% cases. Among the 19 cases, 18 (94.7%) cases improved after initiation of doxycycline treatment.

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Age Group in Years	No. of Cases
13-20	6
21-40	5
41-60	7
61-80	1
Total	19

Table 1. Age Distribution of Cases

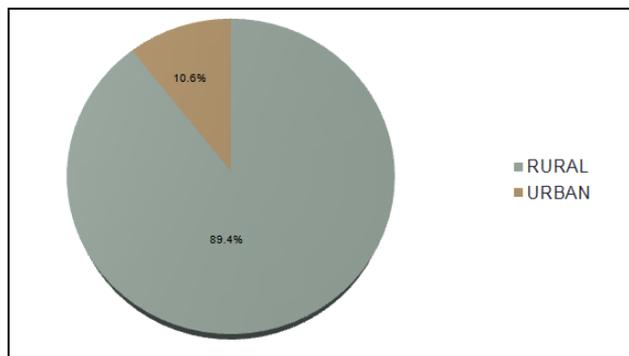


Figure 1. Rural-Urban Distribution of Cases

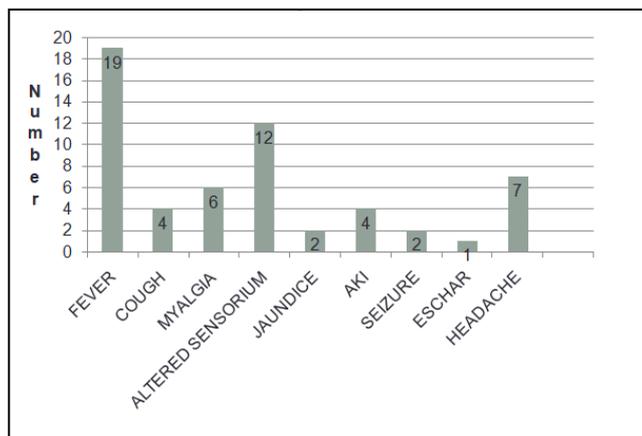


Figure 2. Clinical Presentations

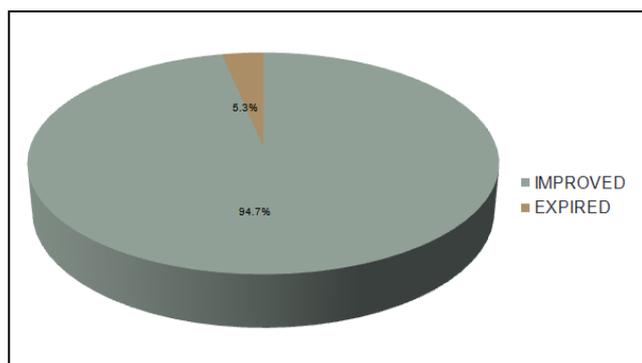


Figure 3. Representation of Outcome of Cases

DISCUSSION

Scrub typhus is a forgotten disease and is often ignored. But it has been re-emerging now. It is an important cause of acute febrile illness.³ The clinical manifestations are fever, myalgia, headache, cough, vomiting, prostration, rash and eschar at the site of bite in some cases. The incubation period is 9-18 days. The rash is maculopapular and appears by the fifth to seventh day. It fades by the twelfth day. It spreads to the trunk, face and limbs including the palms and soles, with generalised painless lymphadenopathy. The temperature rises rapidly and continues as a remittent fever

with sweating until it falls by lysis on about the twelfth to eighteenth day. Eschar is a punched-out ulcer covered with blackened scab. Eschar, although a useful sign, is less commonly present.⁴ The important differential diagnoses are Malaria, Dengue, Enteric fever, Meningococcal sepsis and Leptospirosis. Failure to diagnose or treat scrub typhus can lead to systemic complications like ARDS, pneumonitis, acute renal failure, CNS involvement, bleeding diathesis and death. Convalescence is often slow, and tachycardia may persist for some weeks. The severity of illness depends on a number of factors like virulence of the strain, host factors and nutritional status. The immunity to scrub typhus generally weans over one to three years. The organism shows a remarkable antigenic diversity. So re-infection is possible.

The diagnosis of scrub typhus by routine blood investigations is unhelpful. Diagnosis is based on strong clinical suspicion, specific laboratory investigations and response to treatment. The diagnosis of scrub typhus was traditionally done by the Weil-Felix test. But it lacks sensitivity and specificity. The Indirect Fluorescent Antibody test, which is the gold standard, is expensive. IgM ELISA used in our study uses the major surface protein antigen of *O. tsutsugamushi*. It has been found to be more sensitive for use in developing countries.⁵ The sensitivity of the test is 86.5%.⁶

The treatment of choice is doxycycline. A 7-day antibiotic regimen is usually effective. In case of children and pregnant women, newer macrolides may be used.⁷ Rifampin and azithromycin have been used successfully in areas where scrub typhus is resistant to conventional therapy.⁸ In a prospective, open-label, randomized trial of Korean patients with mild-to-moderate scrub typhus, the efficacy and safety of a 5-day telithromycin regimen compared favorably with those of a 5-day doxycycline regimen.⁹ Use of fluoroquinolones cannot be advocated at this time. Preventive measures in endemic areas include the use of protective clothing and insect repellents. Short-term vector reduction using environmental insecticides and vegetation control can be instituted.

Chemoprophylaxis regimens include a single dose of doxycycline given weekly started before exposure and continued for 6 weeks after exposure. Reports of scrub typhus outbreaks in endemic areas and decreased effectiveness of antibiotic treatment suggest a continued need for a suitable vaccine. At present, no such vaccine is available.¹⁰

CONCLUSION

Scrub typhus, although an old disease, is re-emerging as a major cause of pyrexia. Reports of its re-emergence have been documented both in India and other parts of the world. It is an important differential diagnosis of pyrexia along with malaria, dengue, leptospirosis, enteric fever and meningococcal infections. Diagnosis requires strong clinical suspicion. Typical presentation with eschar is rarely seen. ELISA can help in laboratory confirmation to aid the diagnosis. Prompt initiation of therapy with Doxycycline or

macrolides results in dramatic improvement of the cases. At present, no vaccine is available for scrub typhus.

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