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Research Article

Scrub Typhus in A Tertiary Care Hospital in Lower Assam

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Abstract

Scrub typhus is a zoonotic disease caused by the rickettsial organism Orientia Tsutsugamushi. It is one of the most underdiagnosed and under reported febrile illness world wide. It is one of the main differential diagnosis for acute febrile illness.

Methodology - Hospital based observational study carried out over a period of 6 months (January 2022 – June 2022).

Results - Among the 80 seropositive patients, 35 patients were male and 45 patients were female, 17.5 % patients were agriculture worker by occupation. Most common symptoms were fever, nausea, vomiting, headache, myalgia, cough, pain abdomen and puffiness of face. he organ system dysfunction, renal failure is the most common followed by hepatitis, CNS dysfunction and ARDS. Out of 80 patients 22 patients required ICU admission and 12 patients were dead. Mortality rate was 22%.

Conclusion - Scrub typhus is a severe acute febrile sickness that has a high death rate. Serious life-threatening consequences of this illness include respiratory dysfunction, shock, and abrupt renal failure. To avoid complications that might be fatal, prompt diagnosis, prompt antibiotic medication, and thorough supportive care are essential.

Keywords: Scrub Typhus, Acute Febrile Illness, Eschar.

Introduction

The "tsutsugamushi triangle," which includes large portions of south and southeast Asia, the Asian Pacific Rim, and northern Australia, is home to scrub typhus, an acute febrile illness [1].

Having a population of more over a billion. The obligatory intracellular Gram-negative bacteria Orientia tsutsugamushi, which was once included in the Rickettsia genus, is responsible for this illness [2]. Scrub typhus is likely one of the most underdiagnosed and underreported febrile illnesses, according to WHO in 1999 [3]. Scrub typhus affects one million people annually, has a 10% mortality rate when untreated, and can be more deadly than dengue[4]. The trombiculid mite (chigger) larvae of the Leptotrombidium genus, which generally feed on wild rats, bite individuals and transmit the illness.[5] The most frequent first symptom is fever, which is frequently accompanied by headache, myalgia, nausea, coughing, and dyspnea.[6-7] In a very variable number of persons, an eschar at the site of inoculation can be discovered if extensively sought for.[8] If the infection is not immediately recognised and properly treated, it can range from a self-limiting condition to a deadly illness with multiorgan failure in 35–50% of patients [9]. Lower Assam consists of 7 districts namely barpeta, bajali, Bongaigaon, Dhubri, Goalpara, Nalbari and South Salmara. Scrub typhus was first re-

ported in Assam during World War II (1944–1945), on the Myanmar–India border.

Method

Hospital based observational study carried out over a period of 6 months (January 2022 – June 2022). Study enrolled 80 seropositive scrub typhus patients. Diagnosis of scrub typhus was based on case history, clinical examination, rapid immunochromatographic test to identify antibodies against scrub typhus, complete blood count, liver function and renal function test, serum electrolytes, urine routine examination, chest xray, ultra sound of whole abdomen and CT brain, CSF analysis (for patients presenting with altered sensorium).

Results

Among the 80 seropositive patients, 35 patients were male and 45 patients were female, 17.5 % patients were agriculture worker by occupation. Most common symptoms were fever, nausea, vomiting, headache, myalgia, cough, pain abdomen and puffiness of face. Eschar was clinically evident in 13.5% of the cases only. The average duration of symptoms before admission was 7 days. In patients with severe disease or multi organ system involvement clinical signs such as dyspnea, cough, low blood pressure (MAP ≤ 65 mmHg). The laboratory parameters showed 62.5% patients had elevated total blood count, 25% of patients had low platelet count, 52% of patients had deranged liver function test and 23% of patients had deranged renal function test. The organ system dysfunction, renal failure is the most common followed by hepatitis, CNS dysfunction and ARDS. Out of 80 patients 22 patients required ICU admission and 12 patients were dead. Mortality rate was 22%.

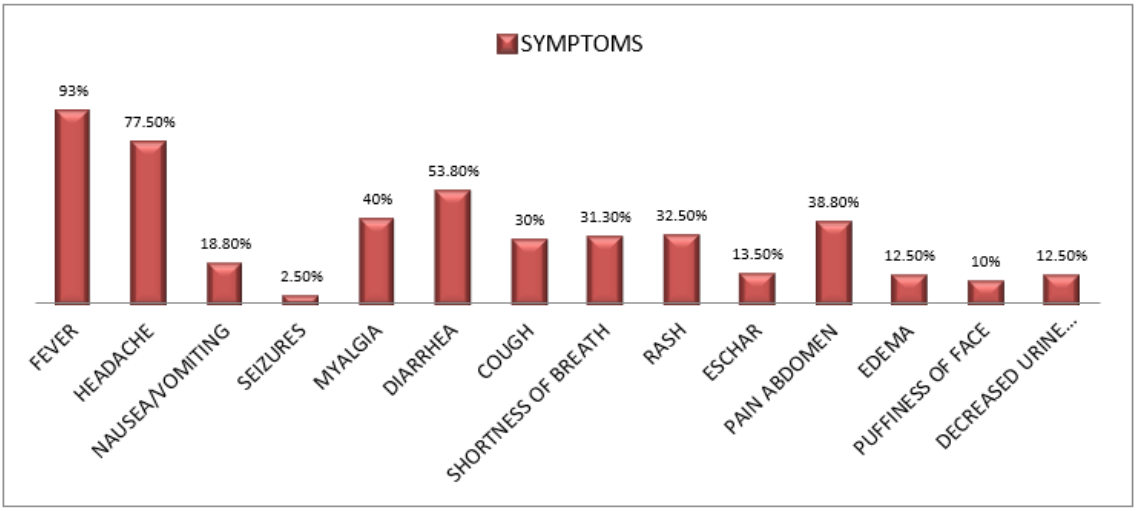

Figure 1 : Symptoms of patients presenting with scrub typhus

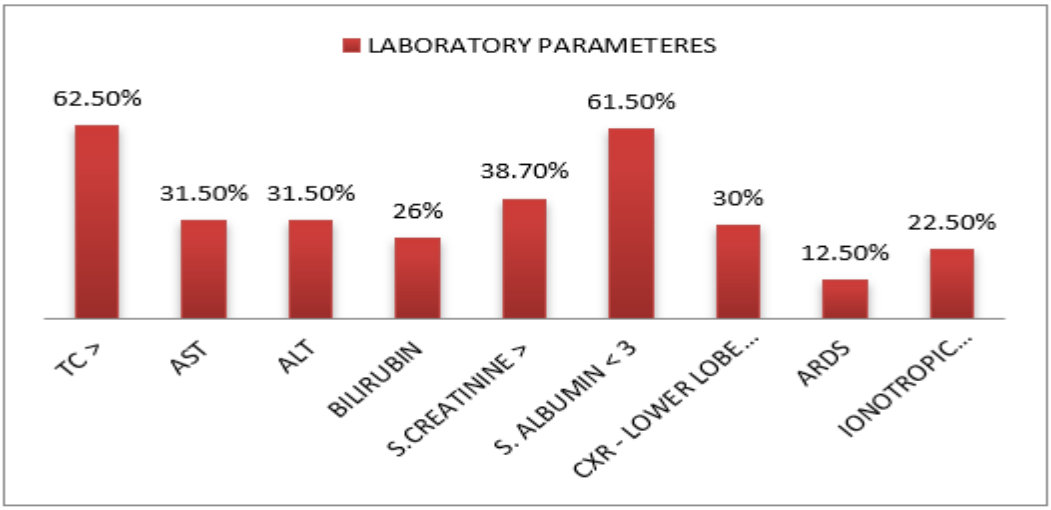

Figure 2 : Laboratory paramters of patiens with scrub typhus

Discussion

The overall mortality rate in our study was 22% which was slightly higher when compared to a study done in south India by Varghese et al. which had 14 % mortality rate [10]. The slight increase in the mortality rate might be due to delayed presentation and late referral from periphery centre. Although eschar was the specific manifestation of the disease only 13.5% of study population had the presentation and is rarely seen in south east Asia population [7,10,11]. The occupation and scrub vegetation's surrounding the house of the patients are known to have a strong association with acquisition of the infection [12]. In this study we found that 17.5% of study population were agricultural workers and 35% of females were housewives by occupation. Pulmonary dysfunction was the most common complication 30%, and the majority of these patients 55% required invasive ventilator support. Previous studies from India have shown an incidence of ARDS of 8–10% [7,13]. Acute renal failure was seen in 38.7% of our patients. This incidence of renal impairment is higher than the 23.2% incidence reported by Attur et al [14]. The finding of hepatitis in 31.5% and thrombocytopenia was also noted in similar percentages of patients as in previous studies. [15] Based on our observation a severity index score containing 5 parameters were made S- Spo2 ≤ 92% in room air, C – CRP > 20, R – Respiratory rate, U – Urine output, B – Systolic Blood Pressure < 90 mm Hg [SCRUB Index]. SCRUB index ≥ 2 required immediate hospitalization and SCRUB index < 2 can be discharged and treated on outpatient basis. The gold standard criteria was similar in defining the severity of scrub typhus as used in the Thailand study [15,16]. Treatment of scrub typhus was initiated with doxycycline either injectable or oral combination of doxycycline and azithromycin was used in patients with ARDS & MODS. Most of the patients responded to doxycycline therapy within 2–3 days except patients who died due to severe MODS and they were referred late to our hospital. Azithromycin has shown to have comparable efficacy when compared to doxycycline in a small trial.[18]

Conclusion

Scrub typhus is a severe acute febrile sickness that has a high death rate. Serious life-threatening consequences of this illness include respiratory dysfunction, shock, and abrupt renal failure. To avoid complications that might be fatal, prompt diagnosis, prompt antibiotic medication, and thorough supportive care are essential.

Refrences

1. Kelly, Daryl J., Paul A. Fuerst, Wei-Mei Ching, and Allen L. Richards. "Scrub typhus: the geographic distribution of phenotypic and genotypic variants of Orientia tsutsugamushi." *Clinical infectious diseases* 48, no. Supplement_3 (2009): S203-S230.
2. Tamura, Akira, Norio Ohashi, Hiroshi Urakami, and Sadao Miyamura. "Classification of Rickettsia tsutsugamushi in a new genus, Orientia gen. nov., as Orientia tsutsugamushi comb. nov." *International Journal of Systematic and Evolutionary Microbiology* 45, no. 3 (1995): 589-591.
3. World Health Organization. WHO recommended surveillance standards. World Health Organization; 1999.
4. Watt, George, and Philippe Parola. "Scrub typhus and tropical rickettsioses." *Current opinion in infectious diseases* 16, no. 5 (2003): 429-436.
5. Coleman, Russell E., Taweesak Monkanna, Kenneth J. Linthicum, Daniel A. Strickman, Stephen P. Frances, Panita Tanskul, Thomas M. Kollars et al. "Occurrence of Orientia tsutsugamushi in small mammals from Thailand." *The American journal of tropical medicine and hygiene* 69, no. 5 (2003): 519-524.
6. Mathai, E., J. M. Rolain, G. M. Verghese, O. C. Abraham, D. Mathai, M. Mathai, and D. Raoult. "Outbreak of scrub typhus in southern India during the cooler months." Annals of the New York Academy of Sciences 990, no. 1 (2003): 359-364.
7. Vivekanandan, M., Anna Mani, Yamini Sundara Priya, Ajai Pratap Singh, Samuel Jayakumar, and Shashikala Purty. "Outbreak of scrub typhus in Pondicherry." *J Assoc Physicians India* 58, no. 1 (2010): 24-8.
8. Kim, Dong-Min, Kyung Jun Won, Chi Young Park, Ki Dong Yu, Hyong Sun Kim, Tae Young Yang, Ji Hyun Lee et al. "Distribution of eschars on the body of scrub typhus patients: a prospective study." *The American journal of tropical medicine and hygiene* 76, no. 5 (2007): 806-809.
9. Kawamura Jr A, Tanaka H. Rickettsiosis in Japan. The *Japanese journal of experimental medicine*. 1988 Aug 1;58(4):169-84.
10. Varghese, G. M., O. C. Abraham, D. Mathai, K. Thomas, R. Aaron, M. L. Kavitha, and E. Mathai. "Scrub typhus among hospitalised patients with febrile illness in South India: magnitude and clinical predictors." *Journal of Infection* 52, no. 1 (2006): 56-60.
11. Sharma, Anuradha, Sanjay Mahajan, Anil Kanga, and Vijay Sharma. "Investigation of an outbreak of scrub typhus in the Himalayan region of India." *Japanese journal of infectious diseases* 58, no. 4 (2005): 208-210.
12. Sharma, Puran K., R. Ramakrishnan, Y. J. F. Hutin, A. K. Barui, P. Manickam, M. Kakkar, V. Mittal, and M. D. Gupte. "Scrub typhus in Darjeeling, India: opportunities for simple, practical prevention measures." Transactions of the Royal Society of Tropical Medicine and Hygiene 103, no. 11 (2009): 1153-1158.
13. Mahajan, Sanjay K., Jean-Marc Rolain, Rajesh Kashyap, Diprabhanu Bakshi, Vijay Sharma, Bhupal Singh Prasher, Lal Singh Pal, and Didier Raoult. "Scrub typhus in Himalayas." *Emerging infectious diseases* 12, no. 10 (2006): 1590.

14. Attur, Ravindra Prabhu, Sujatha Kuppasamy, Manohar Bairy, Shankar Prasad Nagaraju, Nageswara Reddy Pammidi, Veena Kamath, Asha Kamath, Lakshmi Rao, and Indira Bairy. "*Acute kidney injury in scrub typhus*." Clinical and experimental nephrology 17, no. 5 (2013): 725-729.
15. Sriwongpan, Pamornsri, Pornsuda Krittigamas, Hutsaya Tantipong, Jayanton Patumanond, Chamaiporn Tawichasri, and Sirianong Namwongprom. "Clinical risk-scoring algorithm to forecast scrub typhus severity." *Risk Management and Healthcare Policy* (2013): 11-17.
16. Sriwongpan, Pamornsri, Jayanton Patumanond, Pornsuda Krittigamas, Hutsaya Tantipong, Chamaiporn Tawichasri, and Sirianong Namwongprom. "Validation of a clinical risk-scoring algorithm for severe scrub typhus." *Risk management and healthcare policy* (2014): 29-34.
17. Chrispal, Anugrah, Harikishan Boorugu, Kango Gopal Gopinath, John Antony Jude Prakash, Sara Chandy, O. C. Abraham, Asha Mary Abraham, and Kurien Thomas. "Scrub typhus: an unrecognized threat in South India–clinical profile and predictors of mortality." *Tropical Doctor* 40, no. 3 (2010): 129-133.
18. Phimda, Kriangsak, Siriwan Hoontrakul, Chuanpit Suttinont, Sompong Chareonwat, Kitti Losuwanaluk, Sunee Chueasuwanchai, Wirongrong Chierakul et al. "Doxycycline versus azithromycin for treatment of leptospirosis and scrub typhus." *Antimicrobial agents and chemotherapy* 51, no. 9 (2007): 3259-3263.

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