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KEY WORDS:

SCRUB TYPHUS IN CIRRHOTICS: A SINGLE CENTRE EXPERIENCE AT A TERTIARY CARE CENTRE IN DELHI

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ABSTRACT

AIMS AND OBJECTIVE: To study the occurrence of scrub typhus in patients with cirrhosis at a tertiary care centre at Delhi. **MATERIAL AND METHODS:** This was a retrospective study of 4 patients who were admitted to Institute of liver and biliary sciences from September 2017 to October 2018 with chief complaints indicating systemic involvement and were subsequently diagnosed as scrub typhus while they were in the hospital. IgM ELISA was done in all cases for detection of antibody against Orientia tsutsugamushi. **RESULTS:** Eschar, the pathognomic feature of scrub typhus was present in only one case. The commnest sites for eschar, abdomen, nape of neck, groin and axilla were observed. Lymphadenopathy was present in all patients. Thrombocytopenia was observed in two patients at the time of admission. SGPT, SGOT and alkaline phosphatase were elevated in all the cases. Bilirubin was also found to be raised in three cases. In all cases, liver function tests (LFT) derangement suggested of hepatic dysfunction. IgM ELISA was done in all cases. All patients were put on doxycycline along with treatment of other co-morbid conditions. All the patients were cured and no mortality occurred. **CONCLUSION:** A patient presenting with fever of long duration with elevated liver enzymes, a diagnosis of scrub typhus should be kept in mind. An early diagnosis & prompt start of antibiotic therapy prevents further complications and significantly reduces mortality. In cases of high suspicion, an empirical therapy with doxycycline without laboratory testing, is a matter of further study and debate.

INTRODUCTION

Scrub typhus, also known as tsutsugamushi disease, is an acute febrile illness caused by infection with *Orientia tsutsugamushi*. Its multi systematic involvement involves lungs, heart, liver, spleen, and central nervous system causing focal or disseminated vasculitis and perivasculitis[1, 2, 3].Scrub typhus is a public health problem in Asia, where about 1 million new cases are identified annually and 1 billion people may be at risk for this disease[4]. The disease is widespread, extending from north of Japan to Australia and from India to the Pacific. It has been reported throughout India not exclusively to the hilly terrain[5]. The ricketssia is transmitted from rodents to humans by the bite of a chigger (larval stage of trombiculid mite)[6]. Hepatic dysfunction has been commonly seen in patients with scrub typhus (70-90%) [7,8,9,10]. However, till date, determinants to comment on the clinical severity of scrub typhus in liver cirrhosis patients has not been found. This is a retrospective study conducted at our hospital by reviewing medical records of 4 patients accumulated over a period of 1 year.

MATERIAL AND METHODS

This was a retrospective study of 4 patients who were admitted to institute of liver and biliary sciences from September 2017 to October 2018 with chief complaints indicating systemic involvement and were subsequently diagnosed as scrub typhus while they were in the hospital. Complete physical examination was done following routine laboratory investigations like complete blood count, liver function tests, and renal function tests in all patients. Also urine routine, peripheral blood smear for malarial parasite, blood culture and urine culture were done in all the patients. In all cases, detection of antibody against *Orientia tsutsugamushi* was done using IgM ELISA.

RESULTS

Among the four patients three were females and one was male. All four patients were from urban areas. Three out of four patients were adults and one patient was a child. Their mean age was 36 years. The duration of patient illness before admission ranged from 7-15 days with an average of 10.5 days. All the patients had history of treatment before admission. The average duration of stay in the hospital was 9 days with the range of 4-13 days. Fever was the commonest and chief presenting symptom in all the cases. All patients had cough, jaundice and abdominal pain at the time of admission. One of the patients developed breathlessness on admission and subsequently developed cardiogenic shock which was actively managed. Eschar was present in only one case. It was also observed at abdomen, nape of neck, groin and axilla. Lymphadenopathy was present in all patients and an axillary lymph node biopsy taken from a patient turned out to be tubercular positive. Hepatosplenomegaly could not be appreciated clinically but one patient had splenomegaly on ultrasound and was diagnosed as a case of portal hypertension. Laboratory investigations revealed anaemia in two of the four cases. Total white cell count was within limits in all the cases. The platelet counts were on the lower limit of normal range in two patients and the other two patients had thrombocytopenia at the time of admission. SGPT and SGOT were elevated (>40 U/L) in all the cases. Alkaline phosphatase was also also raised (>140 U/L) in all the cases. Bilirubin was also found to be raised in three cases. Blood cultures and urine cultures were sterile in all cases. Creatinine was within normal range in all of the cases. However, urea was marginally elevated in three patients. Two patients had associated diabetes. In all cases, liver function tests (LFT) derangement suggested of hepatic dysfunction. IgM ELISA was done in all cases. All patients were put on Doxycycline along with treatment of other comorbid conditions. All the patients were cured and no mortality occurred.

DISCUSSION

Serology stands the mainstay of diagnosis of scrub typhus , however elevated levels of liver enzymes might point towards this pathology. The pathognomic feature, i.e. eschar might not be present in all cases and hence its absence does not rule out scrub typhus. Weil Felix test , earlier was widely being used for diagnosis of scrub typhus, however it lacks sensitivity. Indirect immunofluorescence assay (IFA) is considered 'gold standard' . It is highly sensitive and specific, but its use is limited in resource poor areas and lack of expertee.[11] Polymerase chain reaction can detect recent infection with *Orientia tsutsugamushi*.[1] We used IgM ELISA for diagnosis of scrub typhus. IgM ELISA is a better test compared to Weil-Felix and IFA considering ease to perform, faster results and good sensitivity and specificity. Faster, accurate and precise results aid in quick recovery of the patient. Doxycycline is the

preferred drug for its treatment. The delay in diagnosis and administration of inadvertent antibiotics can lead to severe complications such as Acute Respiratory Distress Syndrome (ARDS), septic shock and multisystem organ failure often causing death. The mortality rate is variable and it ranges arom 1% to 40% if left untreated.[12] This study has some limitations. First, this is a single-centre study of a small number of patients. Second, the retrospective data collection is another limitation of its own.

CONCLUSION

All clinicians should be well aware of the disease i.e. scrub typhus as it is endemic in many parts of India. A patient presenting with chronic fever with elevated liver enzymes, a diagnosis of scrub typhus should be considered. Eschar, the pathognomic feature of scrub typhus might not be present in all cases. An early diagnosis & timely antibiotic therapy prevents further complications helps in significantly reducing mortality. An empirical therapy with doxycycline without laboratory tests, if there is high index of suspicion is a matter of further study and debate.

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