Scrub typhus is caused by Orientia tsutsugamushi, (‘tsutsuga’ means something small and dangerous and ‘mushi’ means insect/mite/creature) which circulates mainly between human and rodents. Clinical signs and symptoms include febrile condition, headache, eschar, lymphadenopathy, muscular pain and gastrointestinal disorder which in severe and untreated case may end into fatal multiple organ failure. The observation of the eschar is often missed and other symptoms of the disease are not characteristic thus posing the problem of delayed diagnosis by the clinician. Although, scrub typhus is known since 1889 in Japan, the severe epidemics of scrub typhus in Burma (Myanmar) and Ceylon (Sri Lanka) during World War II intensified the interest of studying about this disease. Scrub typhus is endemic in a region called ‘tsutsugamushi triangle’ which extends from northern Japan and far-eastern Russia in the north, to the territories around the Solomon Sea into northern Australia in the south and to Pakistan and Afghanistan in the west. In India, scrub typhus was first reported from Assam and West Bengal states during World War II. The disease is being reported in many endemic pockets of different states of India such as Maharashtra, Tamil Nadu, Karnataka, Kerala, Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Rajasthan, West Bengal, Assam, Arunachal Pradesh, Sikkim, Nagaland and Meghalaya.

Vaccination against this scourge faces challenging obstacles such as extensive antigenic diversity and short duration of immune protection following immunity stimulated by naturally acquired scrub typhus infection. Moreover, immunity to the homologous strain wanes over a period of few years. In the present situation, early diagnosis and chemotherapy is the only choice for combating scrub typhus infection and reducing associated mortality. Diagnosis of scrub typhus is carried out mainly by serological assays, though in recent years, there are specific molecular detection techniques employing amplification of different target genes by polymerase chain reaction. The immunofluorescence assay (IFA) is considered as ‘gold standard’ for diagnosing rickettsial infections but faces certain demerits like its cost-effectiveness in developing countries and technical expertise. One of the most widely used serological assay, Weil-Felix test suffers from poor sensitivity and specificity. Scrub typhus ELISA, which uses O. tsutsugamushi recombinant p56 kD type-specific antigen of Karp, Kato, Gilliam and TA716 strains has >90% sensitivity and specificity for detecting specific antibodies. However, the samples are usually examined multiple times for ELISA test thereby causing delay in diagnosis. On the contrary, rapid detection in immunochromatographic test format can identify a single sample in short span of time.

The present study was carried out to know the current status of the prevalence of scrub typhus in Mizoram from clinically suspected patients who were admitted to Synod Hospital, Aizawl, Mizoram by rapid-ICT test kit. A cross-sectional study was conducted from October 2014 to December 2016 on serum samples of patients with undifferentiated fever from different parts of Mizoram admitted to the Synod Hospital, Mizoram. The samples were examined for detection of anti-Orientia IgM antibody in the human subjects. The result revealed that 6.9% (n = 283) samples were positive in the test kit, irrespective of age and gender. The percentage of seropositivity was higher during the winter (November–February) at 13.5% (154/1141) followed by autumn (September–October) at 10.9% (141/1287). In summer and spring seasons the percentages were comparatively lower at levels of 4.8 and 5.5%, respectively. Age wise comparison of the prevalence indicated that 21–30 yr age group were most affected (prevalence...
The demographic characteristic in the seropositivity of scrub typhus varied with age and gender. The study results showed higher seropositivity in two age groups, viz. 21–30 and 31–40 yr, affecting predominantly males corroborating with earlier reports. The higher outdoor and agricultural activities by males could be the reason of higher seropositivity of scrub typhus in this gender.

In India, the first case of scrub typhus was reported from Assam and West Bengal in the year 1945; and the re-emergence of this scourge was reported in 2010 after a gap of 65 yr. Since then, there are little documentations about the incidences and seropositivity of scrub typhus from northeast India. The subtropical rain forest of Northeast India is conducive for vector propagation and at the same time is vulnerable to climate change. There has been considerable debate as to whether global risk from vector-borne diseases will be impacted by climate change; however, this debate has mostly ignored the biological diversity of vectors and vector-borne diseases. Therefore, detailed studies on the correlation between the recent resurgence of scrub typhus in northeastern India and the climate change is warranted.

In conclusion, this study briefly describes the seroprevalence of scrub typhus in Mizoram state of northeastern India, where during post-monsoon autumn and winter seasons the increased human activities in bushes and agricultural fields have impacted upon the higher rate of scrub typhus incidences. Preventive measures like protective clothings and application of insect repellents along with public awareness about the disease transmission dynamics are important for reducing the disease prevalence.

Conflict of interest: None to declare.

Ethical statement
The study does not involve ethical issues.

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