

A hospital based study on the detection of tick typhus pathogen Rickettsia conorii subsp indica in patients with symptoms of acute febrile illness in a tertiary care hospital – Puducherry (UT).

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Abstract

Introduction: Tick typhus is a rickettsial bacterial infection by the pathogen *Rickettsia conorii* transmitted by dog tick *Rhipicephalus sanguineus*. *Rickettsia conorii* subsp *indica*.subsp. nov causes Indian Tick Typhus (IIT) is prevalent in India. IIT is characterized by acute onset of moderate to high grade fever, malaise, deep muscle pain, head ache, conjunctival suffusion, severe manifestation of sepsis and multiorgan dysfunction syndrome. In the recent years outbreaks have been reported in both Northern and Southern States of India. The diagnosis of tick typhus generally relies on serology tests, but this cannot be used in acute phase of the disease. In India limited studies are available in the literature regarding the molecular based diagnosis of rickettsial infection in human. Hence a study has been undertaken to diagnose the infection by molecular method, the PCR assay with the following objective.

Objective: To determine the positivity rate of Tick typhus in patients and to confirm and identify the strain of the species.

Materials and methods: After getting the informed consent blood samples were collected from patients attending the OPD of the collaborating medical college and DNA was extracted from the clot and used as template in conventional PCR. An indigenous primer was developed and coded as OMP A-FVCRC and OMP-A RVCRC for detecting the bacterial gene which targets the outer membrane protein gene of 190 bp for the presence of the Indian Tick Typhus pathogen.

Results: Out of 38 samples processed 1 sample was found to be positive for the 190 bp gene specific for Indian Tick Typhus pathogen. The positivity has to be confirmed by DNA sequencing.

Conclusion: If the positive sample is confirmed by DNA sequencing this will indicate the likely wood presence of the typhus pathogen in the reservoir rodent and its transmission to human. Further study with larger sample size is required for the surveillance and monitoring of this tick borne disease.



Biography:

Dr.Kulandaisamy Athisaya Mary is a senior technical officer at ICMR-VCRC, Pudhucherry, South India. She belongs to the department of Health Research. Ministry of Health and family welfare. Fields of interest: Immunodiagnostics, Scrub typhus and tick typhus - Molecular diagnostics. She is having a total of 27 years of experience. Number of papers published: 16. Number of papers as first author: 7. No of awards own: 7. Membership in various scientific societies: 4. Number of national and international conferences attended: 20. Teaching faculty for post graduates of Public Health Entomology programme under Central University, Pudhucherry.

Speaker Publications:

1. "Occurrence of *Orientia tsutsugamushi*, the Etiological Agent of Scrub Typhus in Animal Hosts and Mite Vectors in Areas Reporting Human Cases of Acute Encephalitis Syndrome in the Gorakhpur Region of Uttar Pradesh, India."
2. "Hexamerin a Novel Protein Associated with *Bacillus sphaericus* Resistance in *Culex quinquefasciatus*"
3. "Monoclonal Antibodies Generated Against Excretory/Secretory Antigens of Mammalian Stage Larvae of the Lymphatic Filarial Parasite *Wuchereria bancrofti*"
4. "In vitro cultivation of third stage larvae of *Wuchereria bancrofti* to fourth stage: influence of some physico-chemical factors"

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