

Scrub Typhus during Pregnancy: A Case Report from Manipur, North East India

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Abstract: Scrub typhus is a rickettsial infection. It is transmitted to human by the bite of trombiculid mite larvae. The clinical picture of scrub typhus consists of mainly fever, rash, myalgia and lymphadenopathy. Jaundice, renal failure, pneumonitis, ARDS, septic shock, myocarditis and meningo-encephalitis are various complications known with this disease. The disease is endemic in many parts of India, but is apparently grossly underreported. Scrub typhus during pregnancy is quite rare. We report a case of scrub typhus in pregnancy from Manipur, north east India.

Key Words: Scrub typhus, pregnancy, Manipur, north east India.

I. Introduction:

Scrub typhus is a febrile illness caused by *O. Tsutsugamushi*, an intracellular gram-negative bacteria. Humans are accidental hosts and the disease is transmitted through the skin by the bite of larval stage of infected trombiculid mites or chiggers.[1] Characteristic black eschar may develop (46-85% cases) at the site of entry.[2] Incubation period 6–21 days. Clinical manifestation vary in severity from a mild febrile illness to a severe potentially fatal disease with multi organ dysfunction syndrome (MODS). Typical systemic features include fever, gastrointestinal disturbances, malaise, cough, myalgia, headache. Rash and lymphadenopathy may be observed. Severe complications include encephalitis, interstitial pneumonia, acute renal failure and ARDS. Mortality rates for untreated cases 0-30% .[3] Disease is endemic and re-emerging in eastern and southern Asia, northern Australia, islands of the western Pacific and Indian Oceans.[4] Scrub typhus is prevalent in many parts of India mainly sub-Himalayan belt[5] and southern India[6]. Scrub typhus is uncommon during pregnancy, when present can be associated with adverse maternal and fetal outcomes.[7,8,9] We report a case of scrub typhus in pregnancy from Manipur, north east India.

II. Case Report:

28year-old female gravida-4 parity-3 with 4 ½ month amenorrhea presented with complain of fever for 7 days, loss of appetite, on and off cough, decreased appetite and burning micturition. Fever was high grade continuous in nature associated with chills & rigor. There was associated headache and mild bodyache. On examination patient was febrile on touch, pallor present, BP 140/60, PR 118/min. There was no scar, no rash. Mild diffuse abdominal tenderness + . Respiratory system, CVS, CNS was normal. Patient admitted and investigated. On initial evaluation Hb-8.8, TLC-8500, neutrophil-75%, total serum protein & albumin decreased, liver enzyme raised (SGOT/SGPT-284/158), urine pus cells 15 -20/hpf with protein trace. KFT, ECG-normal. HBs Ag, HCV Ab, HIV Ab, MP smear and typhoid was negative. Patients treatment started with IVF, IV ceftriaxone, ranitidine, paracetamol and appetizer. Hep E & A tests were negative. After 3 days of treatment patient not improved rather deteriorating with BP 84/50, liver became palpable, TLC- 9000 with neutrophil-82%. Ionotrope was started and with high index suspicion azithromycin 500mg OD started. Scrub typhus Ab and ANA sent. Next two days patient improved dramatically. Meantime result showed ANA negative & scrub typhus IgM antibody positive. Patient became afebrile and BP improved. Fetal scan done showed 17 wks viable fetus. Patient recovered, subsequently discharged.

III. Discussion:

Scrub typhus first described from Japan in 1899 caused by *Orientia* (formerly *Rickettsia*) *tsutsugamushi*. Transmitted to humans by an arthropod vector of the *Trombiculidae* family. “*Tsutsuga*” means small and dangerous. “*mushi*” means insect or mite. The term “scrub” is used because of the type of vegetation (terrain between woods and clearings) that harbors the vector. “typhus” Greek word means “fever with stupor” or smoke.[10] Scrub typhus is generally seen in people whose occupational or recreational activities bring them into contact with ecotypes favorable with vector chiggers.[11] The seasonal occurrence of scrub typhus varies with the climate in different countries. It occurs more frequently during the rainy season. However, outbreaks have been reported during the cooler season in southern India.[12]

Scrub typhus during pregnancy rare.[7,8,9] Scrub typhus in pregnant women present with non-specific signs and symptoms similar to non-pregnant patients. Our patient presented with high grade fever, loss of appetite, cough, burning micturition, body ache. Characteristic eschar and rash was absent.

During pregnancy, scrub typhus may lead to spontaneous abortion, stillbirth, preterm delivery and small for gestational age infants.[8] Stillbirths and abortion were mainly observed in mothers whose scrub typhus was poorly controlled while there were no miscarriages in patients whose illness was completely controlled.[9]

Scrub typhus is difficult to recognize because the symptoms and signs are often nonspecific. The nonspecific presentation and lack of the characteristic eschar in 40–60% of patients lead to misdiagnosis and under-reporting. Elevated liver enzymes might give clue for diagnosis. Kanno et al showed that liver pathology in scrub typhus is consistent with the features of non-specific reactive hepatitis.[13] Serologic assays are the mainstays of laboratory diagnosis. PCR amplification of *Orientia* genes from eschars and blood also is effective.

In scrub typhus doxycycline is the drug of choice but contraindicated in pregnancy. Pregnant women, azithromycin is the drug of choice (pregnancy category B). It has been shown to have comparable efficacy when compared to doxycycline in a small trial.[14] Azithromycin penetrates polymorphonuclear leukocytes and macrophages, which are target cells for *O. Tsutsugamushi*. In our case patient improved dramatically with azithromycin in 2 days. Case series by Kim YS et al[9], Mahajan SK et al[15], Poomalar GK et al[16] reported good response with azithromycin treatment having no relapses with good maternal and fetal outcome. Rifampicin and chloramphenicol(both category C) are alternative drugs. Importantly, rifampicin should not be used alone because of the risk of resistance.

There are no effective vaccines for scrub typhus. There is enormous antigenic variation in *O. tsutsugamushi* strains and immunity to one strain does not confer immunity to another.

IV. Conclusion:

Scrub typhus should be listed in the differential diagnosis of acute febrile illness in pregnant women who either live in, or return from, endemic areas. The symptoms and signs during pregnancy are not different from non-pregnant women. Treatment with azithromycin is safe during pregnancy.

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