A study of clinic-laboratory profile of Rickettsial fever in children at tertiary health care center

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Abstract

Background: Rickettsial infections are distributed throughout the world and are re-emerging in the Indian subcontinent, especially among children.

Aims and Objectives: To study clinic-laboratory profile of Rickettsial fever in children at tertiary health care center.

Methodology: In the one year period i.e. January 2018 to January 2019, all the suspected patients were undergone Positive Weil Felix test. In the one year period 36 children who showed positive weil felix test were included into study. The data was entered to excel sheet and analyzed by excel software for windows 10. Result: In our study we have seen The most common age group was 9-12 yrs i.e. 33.33%, followed by 6-9 yrs were 44.44%, 3-6 yrs were 19.44%, 1-3yrs were 2.78%. The majority of the patients were Male i.e. 63.89% and female were 36.11% The most common symptoms were Fever in 100.00%, followed by Pain in abdomen in 72.22%, followed by Vomiting in 58.33%, Cough in 47.22%, Headache in 36.11%, Myalgia in 33.33%, Polyarthralgia in 30.56%, Altered sensorium in 25.00%, Seizures in 19.44%, Breathlessness in 13.89%. The most common signs were Hepatosplenomegaly in 58.33, followed by Splenomegaly only in 52.78%, Eschar in 41.67%, Hepatomegaly only in 25.00%, Pallor, Edema, Conjunctival congestion, Rash was 13.89%, Tachypnea, Lymphadenopathy was 11.11%, Hypotension was 8.33%, Meningeval signs positive in 5.56%. The most common laboratory signs were Elevated liver enzymes in 80.56%, followed by Anemia in 58.33%, Leucocytosis in 50.00%, Thrombocytopenia in 47.22%, Hypoalbuminemia . In 41.67%, Hypoalumminum in 38.89%, Elevated creatinine in 13.89%, Elevated CPK in 11.11% Leucopenia in 8.33%. Conclusion: It can be concluded from our study that majority of the patients were in the age group of 9-12yrs, predominant in Males. The most common symptoms were Fever, Pain in abdomen, Vomiting, Cough, Headache. The most common signs were Hepatosplenomegaly, Splenomegaly, Eschar. The most common laboratory signs were Elevated liver enzymes, Anemia, Leucocytosis, Thrombocytopenia etc.

Key Word: Rickettsial fever, Weil felix test, Thrombocytopenia

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INTRODUCTION
Rickettsial infection are distributed throughout the world and are re-emerging in the Indian subcontinent, especially among children. Rickettsial disease has been reported from various parts of India, such as Tamil Nadu, Karnataka, Kerala, Maharashtra, and some parts of northern India1-9. The infection has established itself as an endemic disease in Southeast Asia10-12. Multiple factors contribute to the gross under-diagnosis of rickettsial infections; these include the relatively non-specific disease presentation, low index of suspicion, and lack of awareness about its re-emergence13-15. Being a significant health problem but neglected one so we have studied clinic- laboratory profile of Rickettsial fever in children at tertiary health care center.
This was a cross-sectional study carried out in the department of the pediatrics in the one year period i.e. January 2018 to January 2019. In the one year period all the suspected patients were undergone Positive Weil-Felix test with OX K titers of > 1:160 (OX K for scrub typhus, OX 19 for epidemic/endemic typhus and OX 2 for spotted fever group) and/or positive IgM scrub typhus ELISA with written and explained consent of parents were included into the study. In the one year period 36 children who shown positive weilfelix test were included into study. All details of the patients like age, sex, clinical features were taken. All of the patients underwent all routine investigations like CBC, LFT, KFT, CPK etc. The data was entered to excel sheet and analyzed by excel software for windows 10.

RESULT

The most common symptoms were Fever in 100.00%, followed by Pain in abdomen in 72.22%, followed by Vomiting in 58.33%, Cough in 47.22%, Headache in 36.11%, Myalgia in 33.33%, Polyarthralgia in 30.56%, Altered sensorium in 25.00%, Seizures in 19.44%, Breathlessness in 13.89%. The most common signs were Hepatosplomogaly in 58.33%, followed by Splenomegaly only in 52.78%. Eschar in 41.67%, Hepatomegaly only in 25.00%. Pallor, Edema, Conjunctival congestion, Rash was 13.89%, Tachypnea, Lymphadenopathy was 11.11%, Hypotension was 8.33%, Meningeal signs positive in 5.56%.

DISCUSSION

The Rickettsiae are a heterogenous group of small obligatory intracellular, gram negative coccobacilli and short bacilli, most of which are transmitted by a tick, mite, flea or louse vector. Clinical infections with rickettsiae were earlier classified according to the taxonomy and diverse microbial characteristics of the agents, into six genera Rickettsia, Orientia, Ehrlichia, Anaplasma, Neorickettsia, and Coxiella. Many organisms which were earlier grouped under rickettsiae have now been reclassified. The incidence of rickettsial infection had seen a significant decline in the nineties secondary to widespread use of insecticides. But the past decade has witnessed resurgence in the incidence of rickettsial infection. In most clinical scenarios the presentation of rickettsial infection does not fit into a particular pattern. The clinical presentation of rickettsial
infection is wide and varied. Severity varies from subclinical illness to severe illness with multiple organ system involvement, which can be serious enough to be fatal, unless diagnosed early and treated\textsuperscript{18}. Untreated cases have case fatality rates as high as 30-45\% with multiple organ dysfunction, if not promptly diagnosed and appropriately treated. Even though the specific gold standard tests for diagnosing rickettsial infections are the immunofluorescent antibody (IFA) and the indirect immunoperoxidase (IP) test, these are expensive and not easily available in India\textsuperscript{19}. Rickettsial diseases account for significant cases of tropical febrile illnesses. Most of the cases initially present with fever and non-specific signs and symptoms such as vomiting, myalgia, headache and conjunctival congestion making the diagnosis difficult\textsuperscript{20,21}. The common differential diagnosis for rickettsial fever includes viral hemorrhagic fever especially dengue fever. Most of children diagnosed with rickettsial fever in the present study were referred to the treating physician as dengue like illness\textsuperscript{22}. In our study we have seen The most common age group was 9-12 yrs i.e. 33.33\%, followed by 6-9yrs were 44.44\%, 3-6 yrs were 19.44\%, 1-3 yrs were 2.78\%. The majority of the patients were Male i.e. 63.89\% and female were 36.11\%. The most common symptoms were Fever in 100\% , followed by Pain in abdomen in 72.22\%, followed by Vomiting in 58.33\%, Cough in 47.22\%, Headache in 36.11\%, Myalgia in 33.33\%, Polyarthralgia in 30.56\%, Altered sensorium in 25.00\%, Seizures in 19.44\%, Breathlessness in 13.89\%. The most common signs were Hepatosplenomegaly in 58.33\%, followed by Splenomegaly only in 52.78\%, Eschar in 41.67\%, Hepatomegaly only in 25.00\%. Pallor .Edema, Conjunctival congestion, Rash was 13.89\%, Tachypnea, Lymphadenopathy was 11.11\%, Hypotension was 8.33\%, Meningeal signs positive in 5.56\%. The most common laboratory signs were Elevated liver enzymes in 80.56\%, followed by Anemia in 58.33\%, Leucocytosis in 50.00\%, Thrombocytopenia in 47.22\%, Hyponatremia In 41.67\%, Hypoalbuminemia in 38.89\%, Elevated creatinine in 13.89\%, Elevated CPK in 11.11\%, Leucopenia in 8.33\%. These findings are similar to Sandeep Kumar \textit{et al} they found Of 324 children admitted with fever, 139 (42.9\%) children were diagnosed to have rickettsial disease of which 15 children were excluded due to co-infections. Age ranged from 10 months to 17 years with a mean age of 7.2 ± 4.56 years. Common clinical manifestations were fever (100\%), vomiting (46.8\%), hepatosplenomegaly (39.5\%), isolated splenomegaly (38.7\%), pallor (35.5\%), headache (31.5\%), myalgia (30.6\%), breathlessness (4.8\%), edema (33.9\%), abdominal pain (22.6\%), conjunctival congestion (21\%), cough (19.4\%), skin rash (18.5\%), eschar (17\%), seizures (9.7\%), altered sensorium (8.9\%), and lymphadenopathy (8.9\%). Complications seen were meningitis/meningoencephalitis (9\%), pneumonia (5\%), acute respiratory distress syndrome (ARDS) (4\%), gangrene (2\%), myocarditis (1.6\%), acute kidney injury (AKI) (1.6\%) and stroke (1.6\%). Common laboratory features were elevated liver enzymes (60.5\%), thrombocytopenia (54\%), hypoalbuminemia (53.2\%), anemia (47.6\%), elevated CRP (46\%), leucocytosis (41.9\%), and hyponatremia (38.7\%). There was no mortality and all recovered. Ninety four (76\%) children were diagnosed with scrub typhus. 25 children were included in other typhus group and 5 children were diagnosed as spotted fever. Vomiting, hepatosplenomegaly, anemia, myalgia, skin rash were seen more common in patients with spotted or endemic typhus whereas eschar, seizures were seen only in children with scrub typhus. Elevated CRP, hypoalbuminemia and elevated liver enzymes were seen in all patients with spotted fever.

CONCLUSION

It can be concluded from our study that majority of the patients were in the age group of 9-12yrs, predominant in Males. The most common symptoms were Fever, Pain in abdomen, Vomiting, Cough, Headache. The most common signs were Hepatosplenomegaly, Splenomegaly, Eschar. The most common laboratory signs were Elevated liver enzymes, Anemia, Leucocytosis, Thrombocytopenia etc.

REFERENCES


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