

## Revisiting Classic Triad of Japanese Spotted Fever: A Case Series of Forty-Three Patients

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**Abstract :** Background: Japanese Spotted Fever (JSF) is one of the Rickettsial infections, caused by *Rickettsia japonica*, which is transmitted by ticks. JSF is seen in limited area, such as Japan and South Korea. Its clinical triad is rash, eschar and fever. It often shows leukocytopenia, thrombopenia, elevated transaminase and high C-reactive protein (CRP). Sometimes it can be life-threatening due to disseminated intravascular coagulation or multiple organ failure. Study Aim: The aim of this study is to describe the features of JSF, as this unique infection is rapidly growing in Japan. Methods: This is a case series of JSF from 2009 to 2016, in Mie Prefectural Hospital in Japan. We collected JSF cases, which were diagnosed by polymerase chain reaction (PCR) of the skin or blood serum, or the elevation of the antibody titer of paired blood samples. Results: There were 43 JSF patients (19 male, 24 female) with a median age of 71 years [IQR:65-80]. The median body temperature was 38.1°C [IQR: 37.5-39.0]. 95% had a rash, 67% had eschar and 50% had fever. The median WBC count was 6,700 [IQR: 5,750-8,200] and leukocytopenia was observed in only 7%. The median platelet count was 14x10<sup>4</sup> [IQR:10x10<sup>4</sup>-17x10<sup>4</sup>], thrombopenia was observed in 65%. The median aspartate transaminase (AST) was 53 IU/L [IQR: 41-93]; the median alanine aminotransferase (ALT) was 34 IU/L [IQR: 24-54]; the median CRP was 10.4 mg/dL [IQR:7.2-13.9]; the median lactate dehydrogenase (LDH) was 352IU/L [IQR:282-451]. CRP and LDH were elevated in almost all of the patients. Median length of stay in hospital was 8 days [IQR: 6-11]. All patients were treated with tetracycline and quinolone on the day of the presentation. There was no fatality from JSF. Conclusion: The patients with JSF classically presents with eschar, rash and fever. However, in this study, the half of the patients were afebrile. Although JSF is not a common infectious disease worldwide, if the patient had previously visited Japan or South Korea and presented with rash and eschar with or without fever, we should consider JSF as a potential diagnosis.

**Keywords :** infectious disease, Japanese spotted fever, Rickettsial disease, *Rickettsia japonica*

**Conference Title :** ICEM 2017 : International Conference on Emergency Medicine

**Conference Location :** Dubai, United Arab Emirates

**Conference Dates :** November 24-25, 2017