

Post Dengue Infectious Syndrome

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Abstract

We are sharing here a rare condition in a patient who had persistent debilitating systemic symptoms after resolution of acute dengue fever. A 35y/o male patient was diagnosed with post dengue infectious syndrome after other autoimmune etiologies were ruled out. Our patient was treated symptomatically and improved after four months.

Introduction

Post Dengue Infectious Syndrome refers to the continuation of a broad range of symptoms after resolution of acute phase of Dengue Fever.¹ Seet *et al* conducted a study on 163 patients with dengue and found that 31(24.4%) of them went on to develop severe fatigue 2 months post acute phase of the infection.¹ The condition results from reduced clearance of antigen antibody complexes and resultant altered immune regulation in predisposed individuals.³ The management is primarily symptomatic. To the best of our knowledge it is a rare condition and there is not enough literature regarding its prognosis. We are reporting a case of Post Dengue Infectious Syndrome whose symptoms resolve after 4 months. The only known prevention of this syndrome is to prevent the acute dengue viral infection which is a mosquito borne illness in endemic areas.

Case:

A 35 years old male with no significant past medical history presented with high grade fever, increased frequency of urination, nausea and body aches since 3 days. Clinical examination showed a heavy built man, clinically stable but in physical discomfort having a generalized erythematous maculopapular blanchable rash. Blood work showed reduced platelets of 87,000, Dengue NS1 antigen positive, negative for dengue IgM and positive for Dengue IgG and moderately raised transaminases. Thus, our patient was diagnosed with an acute episode of dengue viral fever with antigen testing reported positive. This was considered to be a secondary infection as his dengue IgG was positive as well.

He was hydrated and temperature was monitored. Subsequently developed phlebitis at the cannula site and blood cultures

returned positive for *Aeromonas spp*. We suspected contamination during handling of the cannula as the cause of aeromonas bacteremia, which occurs commonly following phlebitis in our hospital setting. He was started on ciprofloxacin based on culture and sensitivity.

His platelets dropped further to 34000 before improving, however his fever continued although lower grade. He completed 7 days of ciprofloxacin and platelet recovered gradually. His blood culture was repeated which showed no growth and he was discharged home.

After 2 weeks he came back with fever spikes 101- 102°F, dizziness, back ache and increasing weakness and lethargy so much so that he was unable to join his work. His labs were normal, CRP was 0.7 (normal value 1-3mg/L) and ESR was 67. A CT scan was performed to rule out occult infection and was unremarkable. This was followed by an echocardiogram without any significant findings. Autoimmune profile was negative for ANA.

We evaluated him for mental and physical fatigue using the Fatigue Questionnaire, a validated questionnaire used to assess patient functionality in various medical disorders. He scored moderate to severe on questions encompassing physical fatigue including problems with tiredness, difficulty initiating tasks, lack of energy and muscle strength. He scored mild on the mental fatigue questions relating to increased drowsiness and inability to think clearly. His overall score was 20 out of 30 on the questionnaire putting him in the moderate-severe category. Patient continued to report low grade fevers, continued dizziness and weakness over the course of several weeks despite all tests remaining negative. We subsequently diagnosed him with post infectious Dengue Syndrome.

We provided our patient with symptomatic relief with analgesics. His symptoms resolved gradually over 4-5 months and he eventually made complete recovery without any residual deficits.

Discussion

Post Dengue Fatigue Syndrome is the persistence of a variety of disabling symptoms after resolution of the acute phase. The factors implicated are "host" related that predispose some individuals to an atypical immune response resulting in persistent symptoms.¹ Common clinical sequelae of post dengue infectious syndrome include arthralgia, asthenia, hand weakness, malaise, irritability, memory loss, dizziness, palpitations, headache, anorexia, alopecia, rash, nausea and diarrhea. Of these symptoms,

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arthralgia is reported to be most common.²

It is common within the first two years' post-acute infection. Studies indicate that the severity of acute infection itself correlates rather poorly to the development of the post infectious syndrome.

The pathology behind the abnormal immune response is thought to be related to abnormal binding property of the Fc portion of IgG in individuals with allelic variance. Individuals with the variant allele have abnormally low antibody affinity for antigen and therefore have reduced clearing of the antigen antibody complexes.³

Pathways of increased cytokines, TNF, interferon and interleukins are further stimulated due to abnormal regulation of macrophages, neutrophils and dendritic cells by the circulating antigen antibody complexes. These complexes persist in circulation and get deposited in various organs resulting in continued inflammation. The resultant clinical presentation is continued pain in muscles and joints.⁴

Laboratory tests that can aid in diagnosis include IgG titers and other autoimmune markers such as CRP, immune complexes and ANA. These findings are supportive of a disturbance in immune regulation resulting in increased production of cytokines and damage to the organs and tissues where immune complexes are deposited as well as the endothelial cells.²

There are few case reports available, however, a prospective study conducted in Singapore in 2005 identified 25 percent of patients with dengue who went on to develop persistent symptoms 2 months post the acute dengue episode. It related female sex, older age, presence of chills and absence of rash as factors that increase predisposition to persistent symptoms after the acute phase.¹

In conclusion, post dengue infectious should be considered in patients with incapacitating symptoms for several months after resolution of acute phase of dengue fever. Unnecessary tests should be avoided in the absence of other indicators. This is a rare condition and is generally treated symptomatically. However, it can result in significantly reduced functional status as in our patient who was otherwise healthy and well built.

References

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