

Case Report

Co-infection of Malaria and Dengue- A Case Study

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ABSTRACT

Malaria and Dengue both are vector born diseases and are endemic in south Asia. Coinfection of malaria and dengue are more severe than the mono infection. The clinical features are continuous fever, back pain, headache, running nose and bleeding, which were consistent with dengue, making it difficult to diagnose concurrent dengue and malaria. Rapid diagnostic kits for detecting dengue or malaria are helpful for early diagnosis and to prevent delay in the treatment which will help in improving management of such patients. Here is a case of coinfection of malaria and dengue in 6 year old child who was presented with clinical complications.

Keywords: Malaria; Dengue; Co-infection

INTRODUCTION

Malaria and Dengue both are endemic in India.[1] It represent major public health problem. Co infection cases of malaria and Dengue fever are not very common. In 2005 first case of dual infection were described.[2] Coinfection malaria and dengue can be more sever then single infection. The severity of coinfection occurs due to overlapping symptoms that may clinically indistinguishable. It is important, however, to differentiate between the two conditions. A case of malaria and dengue co-infection in paediatric patient is reported.

CLINICAL PRESENTATION

In the present case, a 6 year old girl from Kanpur was suffering from high grade fever with vomiting. Her other chief complaints were severe headache and abdominal pain. From the clinical history the patient and her family members informed that she had fever from last 10-15 days and nausea, then subsequently developed severe headache and high grade fever of 102⁰ C with chill and myalgia. Further there were no histories of prior infections. General physical examination revealed high pulse rate. There was palpable liver but no splenomegaly. On systemic examinations, no abnormalities diagnosed.

Laboratory diagnosis included: haemoglobin rate 10.3 g/dl, platelet count 90,000 lacs/cub, packed cell volume (PCV) 32%, mean corpuscular haemoglobin 27 pg, mean corpuscular haemoglobin concentration 31 g/dl. Differential count were polymorph 18%, lymphocyte 76%, monocyte 2%, eosinophil 4% and nil basophil count. In serological finding HIV, HBsAg and HCV were non reactive. Due to hepatomegaly, there were significantly increased bilirubin level, SGOT, SGPT and ALT level. Renal function test

were unremarkable. Widal test showed insignificant titre. High grade fever with chill and rigor indicated towards malaria, so malaria antigen test was carried out that showed positive for Plasmodium vivax and negative for Plasmodium falciparum by rapid card test (Satya 2.0 Pf/Pv Malaria Antigen Detection, Tulip group, Viola Diagnostics System) and it was confirmed by observing gametocytes of Plasmodium vivax in peripheral blood smear. Because of thrombocytopenia, Dengue antigen and antibody was also ruled out by rapid card test (Dengue Duo, Dengue NS1 Ag and IgG/IgM Test, Standard Diagnostics). She was reported reactive for NS1 antigen and both antibody IgM and IgG. The source of infection was unknown.



Figure 1 showed gamytocyte of P. vivax

DISCUSSION

The probability of malaria and dengue co-infection in the same patient is still rare as both the illness differ in certain respects. [3] Concurrent infection of dengue with malaria [1,2,3,4] have been reported in past. Earlier there have been many studies of concurrent infection of dengue virus with

a flavivirus, Chikungunya [5] and with different bacteria including Salmonella Typhi [6] and triple infection of dengue malaria and filarial also reported. Co-infection has been reported to be more severe than single infection with severe thrombocytopenia and anaemia. [2,8] In present case, thrombocytopenia was diagnosed without any bleeding manifestations. There were significantly increased bilirubine ALT level. In case of coinfection chance of having hepatomegaly and clinical jaundice is common as compared to mono infection.[9] Jaundice is not common in malaria while it occurs in case of cholestasis or intramuscular hemolysis.[10] Hepatomegaly, abdominal pain and vomiting were the important sign and symptom of dengue in present case which were similar to other studies.[2,11] Plasmodium Vivax malaria was diagnosed by rapid malarial card test and thin peripheral blood smear. Rapid Malaria antigen test done by immunochromatographic methods is a rapid, qualitative differential test. Rapid Malaria antigen test (using pLDH specific to malaria parasites) had sensitivities of 94% and 88% and specificities of 100% and 99%, respectively, when compared to traditional blood films for the detection of P. vivax and P. falciparum malaria.[12] And Dengue was reported by rapid card test only. Combined rapid test kit for detection of non-structural protein (NS1) antigen and Dengue IgM/IgG is more useful, sensitive, and specific for the diagnosis of acute dengue infection.[3]

CONCLUSION

Concurrent infection with malaria and dengue can result in severe illness having overlapping symptom that causes difficulty in diagnosis and treatment. Failure or delay to recognize malaria or dengue coinfection would delay the initiation of proper therapy that may increase chance of severity of bleeding and *Hyperbilirubinemia*. It results in increased morbidity and mortality. Hence chance of concurrence of infection should be kept in mind during diagnosis and treatment.

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