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Letter to the Editor

Patients related diagnostic delay in dengue: An important cause of morbidity and mortality

Dear Editor,

Dengue viral infection (DVI) is a dangerous and debilitating disease, associated with 50–100 million cases along with 2200 deaths every year.¹ Despite provision of comprehensive diagnostic criteria by World Health Organization, the true incidence of dengue infection is still unknown.² It might be attributed to both clinician's and patient's factors. The clinician's factors including over, missed, or delayed diagnosis can be addressed through appropriate trainings or by reinforcing the importance of timely and accurate identification of dengue cases. Delay in seeking medical care and late presentation of dengue patients to the hospital is an emerging challenge to the health authorities that may hinder efforts of combating dengue burden.

Early diagnosis and adequate supportive care are of great importance in the management of dengue so as to avoid the development of complications and severe disease. Diagnostic delays may complicate clinical state of the dengue patients. In our recent series, diagnostic delay (>3 days after onset of dengue symptoms) was associated with development of dengue hemorrhagic fever and dengue shock syndrome (DSS).¹ In another study conducted in Mexico, diagnostic delay >2 days was significantly associated with hemorrhagic cases.³ A study in Cuba also reported that hospitalization of patients at an average of 2.9 days was associated with worsening clinical condition.⁴ Similar results were presented by Yatra where patients having longer duration of fever before hospitalization had 5.5 times higher odds of having DSS.⁵ In addition to rapid deterioration into severe dengue, late hospitalization may also be a possible contributing factor to increased risk of mortality as indicated by Nguyen et al.⁶ It is worthwhile to mention that delay in dengue diagnosis is related not only to disease severity and mortality but also to several complications. These complications include involvement of liver, kidney, heart or brain and are referred to “expanded dengue syndrome”.² In our recent series, we found that dengue patients who were admitted on ≥5th day of illness had 2.1 times more chances to develop acute kidney injury (AKI) as compared to those who were

admitted earlier. Most of the patients in our cohort with late hospitalization had AKI on their admission to the hospital and it might be due to the reason that maximum renal function deterioration occurs within first days of dengue infection. We suggest that early hospital consultation may reduce risks of AKI as well as associated prolonged hospital stay.⁷

As mentioned above, diagnostic delay in dengue infection is related to two main factors: first, physician does not consider dengue infection and second, patient visits the physician too late. These conditions are likely to happen in non-endemic areas, such as dengue infection cases in travelers. However, possibilities of delayed diagnosis due to late hospitalization or seeking medical care can also occur in endemic regions and these might be attributed to patient's behavior and similar presentations of other tropical infections.⁸

All these findings suggest that diagnostic delay in dengue due to late presentation of patients to the hospital or medical care is associated with severe forms of dengue infection, higher mortality rate as well as other complications with multiple organ involvements. However, it also includes the risk of disease transmission into the community, as infected individuals serve as source of virus for dengue vector “Aedes”.² There has been progress in recent years in the development of dengue diagnostic tools, resulting in the availability of suitable tests for each stage of the disease including usefulness and reliability of saliva for early dengue diagnosis.⁹

We strongly believe that to shorten patient delay, the public should be educated about the symptoms of dengue and the importance of early medical consultation. Private General Practitioners should be more alert to the diagnostic possibility and refer the patients promptly to the government hospitals for appropriate investigation. Additionally, patient's willingness to early consultation can potentially improve surveillance and early detection of cases, which in turn can translate to prompt dengue control effort. Moreover, further controlled studies evaluating the impact of diagnostic delay on outcomes of DVI are need of current research.

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