Correspondence

Laboratory diagnosis in suspected cases of dengue

To the Editor

We read with interest the paper by Ageep et al,[1] in which laboratory investigations at Portsudan, Sudan on suspected cases of dengue during the acute phase of illness were directed to detect dengue virus specific IgM antibody for the disease confirmation. Surely, there would be no doubt regarding the 88% IgM positives, though there might have been odd positives even among those lacking IgM antibody. Basically, specific diagnosis would be obvious through demonstration of IgM antibody in primary dengue infections; serologic profile would be different in subsequent secondary or tertiary infections. Rather than an initial IgM response, the anamnestic response would mean a rise in dengue viral IgG rather than the IgM. Serologic diagnosis of secondary dengue virus infections during the initial stages of acute illness has been a challenge. The search has been on for a diagnostic format that highlights both primary and secondary infections by any of the 4 viral serotypes. An enzyme-linked immunosorbent assay (ELISA) of immunoglobulin G avidity, for which only an acute-phase serum has been potentially more useful for the discrimination of primary from secondary dengue virus infection of any virus serotype.[2] Yet another innovation has been the use of dengue virus non-structural protein, NS1, towards a disease diagnosis during the first 4 days of illness. Trials on ELISA formats for the viral NS1 have been encouraging. A specific diagnosis was possible during the first 4 days of illness when IgM antibody was not all that frequently detectable. The NS1 investigations to distinguish between primary and secondary infection were not completely affirmative in French Guiana.[3] On the contrary, in Selangor, Malaysia, the detection rate of Dengue NS1 was better in patients with acute primary rather than acute secondary dengue.[4] The use of capillary blood rather than venous blood for dengue diagnosis by standard methods, would be exciting and valuable in primary, secondary, and tertiary care health centers. Initial performance during day 1-4 of illness points towards the capillary blood being a good alternative to venous blood.[5] More willingly than using multi-step ELISA for a specific dengue diagnosis in academic or research hospitals,[1] funds should be spared to design immunochromatographic IgM, IgG, and NS1 detection kits. This would be ideal in patients even with acute secondary, tertiary, or quaternary dengue viral infections, to assist clinicians and public health personnel in management and control measures early during the illness.

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Reply from the Author

Many thanks to Dr. Subhash and Dr. Agarwal for their interest and sharing their opinions. Our study is the first documented study for detection of dengue virus in Portsudan, Sudan. We do not know whether the positive cases were primary or secondary. Still, we believe all primary, secondary, and tertiary infections may be present among the population. The aim was to raise the awareness of the medical staff to the presence of dengue fever in this area. Surely, more specific investigations, like polymerase chain reaction, are needed, and the results of this work will see the light in the coming days.

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