

INFLUENZA HI ANTIBODIES IN DENGUE-POSITIVE AND NEGATIVE SERA OF FEBRILE PATIENTS

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INTRODUCTION

INFLUENZA and dengue are very similar clinically in that they both cause sudden onset of fever, headache, muscle ache and prostration. Often they are mistaken for each other especially because outbreaks of these two diseases commonly occur at about the same time — during the rainy season. As a WHO National Influenza Centre, the Institute for Medical Research is duty-bound to keep a close surveillance of influenza outbreaks in the country and if influenza is not reported on time and the virus not isolated and identified early enough for precautionary measures to be taken by WHO, a serious pandemic due to a new strain of flu virus is likely to occur. Several cases of suspected dengue have already been found to be influenza during dengue outbreaks prior to this study.

The objective of this paper is to determine what proportion of dengue-suspected cases is, in fact, influenza and whether dual infection of dengue with influenza occurs.

MATERIALS AND METHODS

Paired, acute and convalescent, sera of febrile patients were examined for dengue haemagglutination-inhibition (HI) antibodies. Sera which showed significant rises in titre and those which were negative were subsequently tested for influenza HI antibodies.

The micro-HI test was used for both dengue and influenza. The dengue antigens types 1 to 4 were prepared by the sucrose-acetone method of Clarke and Casals. The sera was treated by the acetone-extraction method.

For influenza, the sera were inactivated at 56 C for 30 minutes prior to treatment with

Receptor Destroying Enzyme (RDE) to remove non-specific inhibitors. The method adopted was that recommended by the WHO International Influenza Center for the Americas. The antigens tested used were A/Port Chalmers/1/73 and B/Hongkong/5/72.

RESULTS

245 paired dengue-negative sera and 60 paired sera with significant rises in dengue antibody titre were tested for antibodies against A/Port Chalmers/1/73 and B/Hongkong/5/72. Of the dengue-negative sera, 74 pairs (30.2%) showed significant rises in titre, most of which were greater than 4-fold, against A/Port Chalmers antigen. None were positive against B/Hongkong/72 virus.

Only one (1.6%) pair of serum positive for dengue was also positive for influenza. The rise in titre was against A/Port Chalmers antigen and was from 1:20 to 1:80.

DISCUSSION

It may be noticed from this study that almost one-third of cases suspected of dengue turned out to be influenza instead. This is serious as the virus causing the influenza could have been a new strain with pandemic potentialities. Similar studies have been done in this laboratory (unpublished) which have shown also that many "dengue" cases were actually leptospirosis or rubella. Although overlooking leptospirosis may not be of much consequence, missing the diagnosis of rubella in a pregnant woman is definitely much more serious.

Physicians and clinicians are advised, especially in outbreaks of dengue fever, not to overlook the possibility that their PUO patients may in fact be suffering from influenza, leptospirosis or rubella. Any pregnant woman with fever and rash must be investigated not only for dengue but also for rubella. Likewise, influenza, being so similar to dengue fever in onset, should also be investigated

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especially when upper respiratory symptoms are evident.

SUMMARY

30.2% of paired sera sent for dengue investigation turned out to be positive for A/Port Chalmers influenza and not for dengue. Dual infection of dengue with influenza was also observed but only rarely (1.6%).

The consequences of missing influenza in a dengue fever outbreak were discussed. Physicians were advised to keep in mind influenza, as well as leptospirosis and rubella, when investigating dengue fever outbreaks.

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