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BRIEF NOTE

Dengue-2 virus isolation from humans during an epizootic in southeastern Senegal in November, 1990

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The isolation of dengue-2 virus from humans and mosquitoes in November, 1990 in southeastern Senegal is reported.

After a seven-year period of non-detectable dengue-2 virus activity in southeastern Senegal, 43 viral strains were isolated in October-November, 1989, from mosquitoes. In September-November, 1990, 19 isolates were obtained from mosquitoes and from 2 febrile male patients.

Two days after returning from a week-long stay in southeastern Senegal, the first patient, a 31-year-old European, complained of a sudden influenza-like illness. Clinical data reported a sudden onset of fever (39°7C), shivers, frontal headache, myalgias, joint pains, nausea, vomiting and asthenia. No neurological syndrome, rash, haemorrhagic signs or hepatomegaly and splenomegaly were noticed. Thick smears were negative. Platelet counts (156 Giga/l), white blood cells (4.9 Giga/l) and haemoglobin (17.6 g/dl) were normal. The patient, a resident of Senegal since May, 1989, had experienced several previous malaria attacks but no apparent arbovirosis. Clinical data from the second patient, a 15-year-old Senegalese living all-year round in the area, were not available. In both cases, dengue-2 virus strains were isolated from whole blood in AP-61 *(Aedes pseudoscutellaris)* cells.

A serosurvey in humans was conducted in November, 1990 in the area: 400 sera from 1- to 15-year-old children were collected and tested by ELISA for flavivirus antibodies (yellow fever, dengue-2, West-Nile, Zika). Dengue-2 IgM antibodies were detected in 4 % of the patients, and IgG in 73.2 %. An IgG cross-reaction was observed among the different flaviviruses.

Dengue-2 virus was first isolated in Senegal from a 12-year-old girl in Bandia (60 km east of Dakar) in 1970 (Robin *et al.*, 1980), recovered from a man returning from southwestern Senegal in November, 1983 (Saluzzo *et al.*, 1986) and also isolated from *Erythrocebus patas* in 1981 (Cornet *et al.*, 1984).

For many years, entomological and serological surveys have been conducted in southeastern Senegal to study the endemic cycle of yellow fever and other associated flaviviruses (Zika, dengue-2, West-Nile, etc.). Dengue-2 virus was previously recovered from *Aedes* mosquitoes in 1974, 1981 and 1982. *A. luteocephalus, A. furcifer* and *A. taylori* mosquitoes were the main vectors for dengue-2 and Zika viruses, and *A.*

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luteocephalus and *A. furcifer* for yellow fever virus. Multiple isolations of dengue-2 virus from mosquitoes in October-November, 1989-1990, associated with diagnosed human cases, indicated an increase in dengue activity.

The 1970 and 1974 dengue type 2 virus isolates and other, different strains from West Africa were genetically distinct from other dengue-2 virus strains in the world (Rico-Hesse, 1990), suggesting a distinct wild cycle and an independent evolution in West Africa in comparison with viruses from other areas. Our information is not sufficient to prove the introduction of a new dengue-2 virus strain of unknown origin. Perhaps an established sylvatic cycle has given rise to variations of the 1981-1982 strains with a small epidemic in 1990. Vertical and/or transovarial transmission could explain the persistence of the virus, as shown by the isolation of the virus from male mosquitoes (Cornet, 1984). Further studies are required on the genetic sequencing analysis of the dengue-2 virus isolates, vector competition for different flaviviruses and pathogenicity of these African strains.

Key-words: Dengue-2; Casuistics, Senegal.

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