

Dengue in brazil, situation, transmission and control

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DENGUE IN BRAZIL Dengue mostly dominates areas above and below the equator, South and Central America. The three strains that cause dengue include Mochizuki, Hawaii and one from New Guinea. The three have different antigen characteristics but are serotypes of the same virus. The four complex dengue serotypes are DENV-1, DENV-2, DENV-3 and DENV-4, all of which belong to the family of Flaviviridae. The two kinds of mosquitoes that spread dengue are *Aedes aegypti* and *Ae. albopictus*. Unlike *Ae. aegypti*, *Ae. albopictus* is not domestic and therefore breeds in anthropophilic and zoophilic places (Teixeira & Barreto, 2008).

The first reported incidences of dengue in Brazil were in 1923 in São Paulo and Niterói in which 11000 people were infected. DENV-1 and DENV-4 were the strains reported, both of which came from the Caribbean and South America over the Venezuelan border (Teixeira, 2008). The *Ae. aegypti* virus was new in Brazil hence was quickly eliminated. DENV-1 reappeared in 1986 in Nova Iguaçu and spread rapidly, with 35000 and 60000 reported incidences in 1986 and 1987 respectively (Marzochi, 1994). DENV-2 came about in Rio de Janeiro and Nova Iguaçu, where 462 cases and eight deaths took place. *Aedes aegypti* extended the spread of DENV-1 and DENV-2 all over Brazil. DENV-3 serotype was responsible for the 2001 outbreak of dengue in Brazil, with 800000 cases reported. In 2008, 700000 infections and 45000 hospitalizations were reported. Since 1990 to 2008, lethality of 7.4% has occurred due to dengue. Children are the most affected by dengue in Brazil as of 2008 (Teixeira & Barreto, 2008).

Preventing and controlling the spread of dengue is a nightmare because of lack of a reliable vaccine and the high competence of the dengue viruses.

Ae. aegypti especially is adapted to breeding in highly populated areas and

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is, therefore, hard to eliminate. Wet tropical conditions also aid these mosquitoes to breed. The control of dengue also involves means that are harmful to the environment since the insecticides used are poisonous, and there are insufficient funds to carry this task (Marzochi, 1994). America stressed on controlling the spread of dengue rather than its elimination since the latter was proving impossible. However, dengue has still been a problem because its strains can spread even in places with fewer vectors. Two projects have been carried out to control its spread but both proved futile due to financial and political limitations. To control its spread, Brazilians have been educated about it through corporate events (Dione & Eliane, 2013). Candidate vaccines have also been created to help reduce the spread of dengue, but there is health risks involved if an individual with one or two strains of dengue is vaccinated. This has been a major problem since dengue symptoms only come out at a crucial stage (Marzochi, 1994).

Dengue is a menace in Brazil, especially because of the high tolerance of the viruses. The tropical climatic conditions and dense population in urban areas aids in transmitting dengue. Several measures have been taken to help control the spread of dengue, but none has been successful. This problem will live on for quite some time. More realistic means of curbing it should, therefore, be sought.

References

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