DENGUE CURRENT STATUS AND PERSPECTIVES

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Although there have been reports on the occurrence of a disease with suggestive clinical and epidemiological characteristics since the mid-nineteenth century and the early twentieth century (Rego 1872, Luz 1889, Reis 1896, Mariano 1917, Pedro 1923) the first dengue epidemic with laboratory confirmation in Brazil occurred in late 1981 and early 1982 in the city of Boa Vista, Roraima State (Osanai et al. 1983). In 1986 serotype 1 (DENV-1) was isolated in Rio de Janeiro, causing a new epidemic (Schatzmayr et al. 1986). Four years later, in 1990, serotype 2 (DENV-2) was identified, again in Rio de Janeiro (Nogueira et al. 1990). The circulation of this serotype caused the epidemic that, from Rio, reached other locations, including with the first records of hemorrhagic forms of the disease (Souza et al. 1995). Eleven years after the isolation of DENV-2, serotype 3 (DENV-3) was identified from an autochthonous case in Rio de Janeiro (Nogueira et al. 2001), being responsible for the most serious outbreak so far recorded in Rio and Brazil. Before long DENV-3 was spread to the other regions of the country, triggering epidemics with a growing number of cases of the hemorrhagic form occurred. In 2010, in the state of Roraima, DENV-4 was identified, causing new epidemics throughout the country (Temporão et al. 2010). During the year 2013 the circulation of the four serotypes of dengue virus occurred, highlighting DENV-4, present in all regions of the country.

In Brazil, during the 33 years of dengue virus circulation, with laboratory confirmation of the circulating serotypes, approximately eight million two hundred thousand cases of the disease have been reported (BRASIL 2012a, 2012b, Cunha 1993).

Recent studies, making use of cartography, have estimated the number of infections per year worldwide at around 390 million, with approximately 96 million of symptomatic cases (Bhatt et al. 2013).

Since their definitive return in 1986, dengue epidemics have been recorded almost on an annual basis. However we have commonly observed that many managers, healthcare staff and media are perplex before these epidemics, showing surprise before their magnitude (BRASIL 2007).

The reasons for the high mortality rates observed during these epidemics invariably point to a “more aggressive” circulating serotype, which alone does not explain the majority of deaths reported (Nogueira et al. 2001). More often than not, we have seen the traditional attempt to “pass the buck” among authorities of various management levels of the Unified Health System (SUS), an attitude that does not contribute to the process of growing awareness of the healthcare system’s users.

The experience accumulated over nearly three decades has shown that epidemics are not unpredictable, nor are high mortality rates immutable. One can safely say that almost all deaths from dengue fever are preventable and depend mostly on the quality of care provided to the patient and also on the organization of the healthcare service network. The proper organization of health network enables early diagnosis and proper and timely therapy. A good health manager can save more lives during a dengue epidemic than can ICU physicians because individual treatment can only be performed properly if the healthcare network, at all levels, is organized in advance (Martinez 2006).

The magnitude of epidemics in a community is known to depend on the combination of a number of factors, the so-called microdeterminants and macrodeterminants. Microdeterminants include the percentage of people susceptible to the circulating serotypes, abundance and types of mosquito breeding sites, high rates of building infestation and density of females of the vector. Macrodeterminants involve high temperature and air relative humidity, high population density, improper sewage disposal and unsuitable water supply (PAHO 1994).

With increasing frequency in recent years one can see groups more vulnerable to more severe clinical forms, a phenomenon already recorded in the 1990s (Cunha 1998). These groups consist of people with comorbidities, especially chronic diseases such as hypertension, diabetes mellitus and allergies (Figueiredo et al. 2010). The importance of these comorbidities to the disease prognosis is outstanding, especially as far deaths...
are concerned (Facco 2013, Oliveira 2013).

Another observation made during the last three decades is the failure of traditional methods of control of *Aedes aegypti*, the main transmitter of the dengue virus. Vector control through the use of insecticides and larvicides did not achieve its main objective, the reason why epidemics keep taking place every year.

While the social determinants that facilitate the perpetuation of the environment conducive to the proliferation of *Aedes aegypti* are not overcome, we will unfortunately continue living with dengue outbreaks. As this reality is still far, the scientific community looks forward to the final results of studies involving bacterium *Wolbachia pipientis* in the control of *Aedes aegypti* (Thomas et al. 2011). Likewise, it will also be very welcome a tetravalent vaccine, safe and effective against all four serotypes (Schmitz et al. 2013), an achievement that remains challenging for enterprises and research groups around the world.

**REFERENCES**


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