Dengue fever: Pakistan’s worst nightmare
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Dengue virus is presently amongst the most important arthropod-borne infections, from both the medical and public health perspectives. It is transmitted to man by the bite of a domestic mosquito, \textit{Aedes aegypti}, being the principal vector. Currently there is no vaccine available. However, several vaccines are in various stages of development, with clinical trials underway.\textsuperscript{1}

The first reported epidemic of dengue fever (DF) occurred in 1779–1780 in Asia, Africa, and North America.\textsuperscript{2} Since then, it occurred sporadically until the 19th century. Major changes in the epidemiology of dengue virus infections began after World War II and have continued to date.\textsuperscript{3} As Dr Paul Reiter (CDC Dengue Laboratories, Entomology Section) explained at the 1999 Dengue Symposium in Cairns, “people are vectors of the dengue virus, travelling the world, infecting mosquitoes.” So, it has recently emerged as a major international health problem with an expanded geographic distribution and a potential to cause major health and economic burdens. The global distribution of dengue fever is comparable to that of malaria, and an estimated 2.5 billion people live in areas at risk for epidemic transmission.\textsuperscript{2}

In recent years dengue has become a major international public health concern. This mosquito-borne infection, mostly found in tropical and sub-tropical areas around the world, is a leading cause of hospitalization and death. In 1980 DF was found in China, Indonesia, Malaysia and Thailand. Moreover, epidemics have occurred in India (1990) and Bangladesh (2005). In Pakistan, dengue has been around for the past 20 years. The first major outbreak in Pakistan was reported in 1994–1995. A study confirmed that epidemic dengue infection was present in southern Pakistan for two consecutive years.\textsuperscript{4} During 2005–2006, however, there was an unprecedented increase in DF epidemic activity in the country, with more than 3640 patients with signs and symptoms suggestive of DF admitted to several referral hospitals in the country. There were 40 deaths, making it the biggest and most severe outbreak of DF in the country.\textsuperscript{5} According to sources, the recent (in 2011) wave of dengue fever hitting Pakistan’s eastern province of Punjab killed at least 365 people and 21,597 cases of DF have been reported,\textsuperscript{6} making it the world’s biggest epidemic of DF ever. The upcoming year 2012 is predicted to be even worse.\textsuperscript{7}
Since neither a drug nor vaccine exists for dengue fever, prevention through vector control aided with community participation is the only option to control dengue infection. For disease prevention we need a better understanding of this infection. The highest numbers of hospital admissions for suspected dengue cases are seen in September and October following the monsoon season. This complies with the dengue epidemic season in other countries, such as India and Bangladesh, sharing the same climatic patterns. This timing can be attributed to increased mosquito breeding due to ambient temperature and humidity present in the preceding months. Now the facts are indicating that mosquitoes in Pakistan are developing resistance to agrochemicals, calling into question the current massive fumigation drive. Using the appropriate pesticide is indeed crucial. Last year’s disastrous floods have further aggravated the situation.

Dengue infection plays havoc with the economic and health structure of Pakistan every year. The Government of Punjab (province of Pakistan) opened a hotline called “Punjab Health Line Project for Dengue”. This is to facilitate the circulation of the signs and symptoms of dengue, provide help for suspected cases and ultimately help identify areas where the epidemic may have reached. In early September 2011, the Government of Punjab ordered the schools, colleges and universities in Punjab to close for 10 days for intensive spraying. The government of Pakistan has spent millions of dollars to deal with the issue in every way. DF is affecting the economy, education and even the politics in the area as the Punjab Government, opposition and media are commenting on the negligence of local government whereas in reality Punjab, like the rest of Pakistan, is not equipped to handle a sudden upsurge of any disease. Considering the burden it adds to an already frail health system of this developing country, there is a dire need to conduct research and make comprehensive and cost-effective management plans. The data available in Pakistan on the prevalence and clinical and laboratory characteristics of dengue infection are scarce. There are only a handful of studies reporting on the annual epidemics. This stands in sharp contrast to the fact that a dengue epidemic causes immense burden on already tumbling finances and the low economic growth rate in the country. This epidemic is something more than a wakeup call for the Pakistan Government and health policy-makers. Health and economic research specific to dengue is urgently needed to ensure informed decision-making on the various options to control and prevent this disease. Now is the time to update our knowledge about this disease and to be equipped with the latest methods of prevention and management.

References


