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Open Access Journal of Pharmaceutical Research
ISSN: 2574-7797

Chikungunya Emerging Health Crises in Pakistan: Are we Going in the Right Direction

Ahmed A*, Tanveer M and Khan GM

Department of Pharmacy, Quaid-i-Azam University Islamabad 45320, Pakistan

Commentary Article

Volume 1 Issue 2

Received Date: March 05, 2017

Published Date: May 03, 2017

***Corresponding author:** Ali Ahmed, Department of Pharmacy, Quaid-i-Azam University Islamabad 45320, Pakistan, Email: aliahmed@bs.qau.edu.pk

Commentary

The unstable health care system of Pakistan saw a major setback in the form of dengue outbreak in 2011. Despite massive governmental efforts, with each passing year dengue continues to cause significant morbidity and mortality. The Latest health care crisis has emerged in the form of Chikungunya alpha virus outbreak. The virus is of the family Togaviridae, causing symptoms ranging from mild to severe fever, nausea, joint pain and rashes. The viral pathogenesis is yet to be completely delineated. Recent investigations have shed light on the process of viral replication in affected tissues and organs. In addition, it has also been reported that disease severity has a correlation with both viral load and the release of cytokines [1]. The name Chikungunya is derived from Tanzanian language, Kimakonde, meaning to "to become contorted", and is spread by the bite of female mosquitoes of the genus *Aedes Aegypti* and *A. Albopictus* (Asian tiger). The alarming situation of chikungunya out break got prominence in Pakistan when its cases were confirmed on 22 December 2016.

The dismaying disease is having a similar crisis impact like initially dengue had back in 2011 [2]. The mosquito borne disease is affecting hundreds of individuals across the city of Karachi particularly in neighborhoods of Malir Town, Shah Faisal Town and Saudabad area. Since the disease has certain clinical signs similar to that of dengue fever, there is fear of misdiagnosed cases in dengue endemic areas [3]. Over the years, Chikungunya infected individuals have been reported in more than 60 countries across the world, and with no anti-viral therapy currently available it is posing significant risk to healthcare system of affected developing countries. Ironically, the disease hits badly those areas of the world which are on the lower side of the development ladder and are already facing multiple national health issues due to an unstable health care system in addition to poorly informed general public.

Chikungunya infection came into limelight in Pakistan when more than 30,000 patients were reported to be suffering from a mysterious disease which was mostly labeled as dengue fever while others claimed it to be Zika virus infection. On 19th December the situation became more alarming when Health Minister Sindh, declared emergency in Malir, Karachi. The diagnostic labs of Karachi or the rest of the province were not able to identify the virus which further made matters worse. The government of Sindh then dispatched blood samples to the National Institute of Health (NIH) and the Aga Khan University Hospital [4]. The virology lab of NIH identified the virus and the confusion over the identity of the disease was finally brought to an end on 22nd December. In addition, Chikungunya virus was also identified in water samples collected by health officers from residential colonies adjacent to Malir hospital. According to official sources, medical staff team of more than 50 Doctors, nurses and other paramedic staff has also been reported to have been suffering from the viral disease [5]. Soon after the confirmation of identity of this viral disease the Ministry of National Health Services Regulation and Coordination (NHSRC) officially reported the outbreak to the World Health Organization. This has been the first time when Pakistan has officially carried out the documentation of reported cases and has forwarded the outbreak status to WHO [6].

The NIH also issued an advisory for the control and prevention of the Chikungunya viral infection in Karachi,

advising authorities to eradicate mosquitoes responsible for the spread of the disease, eliminate its larvae and take all precautionary measures to prevent and control the dengue-like viral infection.

In addition to poor sanitation and impaired drainage system, another factor which facilitated the spread of Chikungunya virus is uncharacteristically prolonged summer season. This year the winters arrived quite late and the persistent warm temperature facilitated the breeding of mosquitoes. The health secretary of Sindh has stated that a state of the art virology lab will be established in Sindh where modern equipment would be acquired in the coming weeks to perform real-time polymerase chain reaction tests in Karachi and the rest of the province to detect viruses instead of sending samples to Islamabad or abroad.

The health secretary has also stated that initially the equipment, known as Cobas, and testing kits would be acquired for molecular analysis and testing in Karachi and later for all the district hospitals so that samples would not need to be sent to the federal capital or abroad for analysis or confirmation [7]. The Chikungunya has also reached federal capital Islamabad after Karachi as the National Institute of Health (NIH) has identified and verified the presence of the virus in a lady who reached Islamabad from Karachi Saudabad. After receiving the reports, health department fumigated the house of the patient and other nearby 25 houses to avoid further spread of this disease [8]. Since then no case has been reported in Islamabad.

Karachi is a neglected city both in terms of health and capital distribution. The present Chief Minister and his predecessor, failed to clean the city of thousands of tons of garbage. Worst sanitation condition is prevalent in the city and on top of that, there is no efficient supply of medicines in the Governmental hospitals. Government policies are devoid of effective planning and no actual implementation steps are undertaken. Preliminary steps like the advisory issued by NIH have been done but no practical prevention steps have been observed to be undertaken. Karachi is still facing the crisis of heavy outbreak of dengue and Government is still unable to control it. In 2016, more than 2000 dengue cases were reported in Karachi alone.

The Government of Sindh approved the PC-1 of the programme for three years (2016 to 2018) in March 2016. The programme management has been given the task to control the prevalence of dengue in the city but Sindh Health department is still reluctant to recruit more staff to run program affairs due to capital shortage, despite lapse of several months. Since Chikungunya and Dengue have a common vector, so control of the particular genus is inevitably the most critical step in reducing the number of cases and containment of disease.

We would like to draw attention of ministry of national health services, provincial ministries and readers to some important considerations which are ignored by all. Firstly, the hiring of qualified personals has to be undertaken, secondly, a centralized control strategy needs to be expertly drafted and implemented in every province. Under this centralized strategy, duties should be delegated and supervised by experts. Currently, mosquito control sprays are not being conducted appropriately; local residential areas need to be sprayedby spatial insecticides approved and recommended by EPA for use in Chikungunya control [9]. In case, residents do not permit this then they should be provided with calculated spray for use at their ease. This way will ensure that all breeding sites are targeted. Thirdly, there is dire need of increasing awareness at community level through daily or weekly publication of pamphlets and columns in local newspapersabout the proper way to prevent mosquito breeding areas from forming. Another factor contributing to the spread of Chikungunya is pollution, poor sanitation conditions and overcrowding of cities.

Efficient measures need to be taken to eliminate or minimize the effect of such factors. The general public has to be provided with accurate and concise information about the magnitude of the disease and its detrimental effect on the society at large. The educational curriculum of educational system has to be revised to integrate basic sections presenting information on Chikungunya and other endemic diseases. The children will be more responsible and healthy citizens when they are educated from the very start about ways to prevent the disease and what has to be done in order to reduce its severity. Lastly, heath care experts need to be recruited solely for the purpose of providing door to door campaigns in an effort to generate awareness at public level. In accordance with number of healthcare workers, the trend demonstrates dengue fever and Chikungunya outbreak to be getting more and more intense with the passage of each year, if proper preventive measures are not taken well in advance, the population in this region of the world will inevitably have to face a more intense and deadly outbreaks in the years to come.

Prevention from Chikungunya disease is important to lower the burden on our already crippled and unstable healthcare system. In addition to strengthening

healthcare efforts directed towards treatment of affected individuals, there is dire need to promote awareness about measures that need to be undertaken to prevent the disease. The symptomatic treatment calls for the use NSAIDs, which are associated with increasing the risk of hemorrhage in patients of both dengue and Chikungunya. The use of aspirin needs to be avoided and there is an urgent need for creating awareness about the use of aspirin in patients of cardiovascular diseases in dengue and Chikungunya affected areas of Pakistan. The market in Pakistan during season of raging dengue becomes flooded with substandard repellents which have not been monitored for quality assurance. The commercially available spatial mosquito repellents should contain chemical agents approved by the Environmental Protection Agency (EPA). Such agents include 2-undecanone, catnip oil, citronella, DEET (N, N-Diethyl-3-methylbenzamide), and icaridin.

The repellents are toxic chemicals so in addition to their quality assurance, the government needs to undertake measures to promote awareness about the proper usage of these agents [9]. These repellents if used improperly might cause toxic side effects particularly with DEET, such as rashes and hives and generalized allergic reaction. Thus, it is of paramount importance to promote safe use of repellents especially in susceptible individuals of the population such as pregnant females and children under 2 years of age. The recruitment of pharmacists to provide knowledge about the kind of registered repellents commercially available and their proper usage is currently the need of the hour. Finally, we would like to highlight that the ideas presented in this manuscript are of authors and not the journal's editorial team.

References

1. Deeba F, Islam A, Kazim SN, Naqvi IH, Broor S, et al. (2016) Chikungunya virus: recent advances in epidemiology, host pathogen interaction and vaccine strategies. Pathogens and disease 74(3): ftv119.

2. Qureshi AS (2016) Everything you need to know about Chikungunya fever. The Nation: December 29.

3. Chikungunya. April 2016.

4. Mysterious disease affects 30,000 people in Karachi. Dunya News: December 19.

5. Chikungunya virus cases spark fears of outbreak in Karachi. Pakistan Today: December 19

6. Wasif S (2016) Pakistan officially reports Chikungunya outbreak to WHO. Express tribune: December 27.

7. Bhatti MW (2016) Chikungunya epidemic confirmed. The News: December 23.

8. Chikungunya virus hits capital after Karachi. Daily News: December 29.

9. Patel RV, Shaeer KM, Patel P, Garmaza A, Wiangkham K, et al. (2016) EPA-Registered Repellents for Mosquitoes Transmitting Emerging Viral Disease. Pharmacotherapy 36(12): 1272-1280.