



**RESEARCH ARTICLE**

**Chikungunya – The Need for Instigating Awareness in Pakistan**

**Somia Gul, Samreen Aziz, Safoora Tariq**

*Faculty of Pharmacy, Jinnah University for Women, Pakistan.*

Manuscript No: IJPRS/V3/I2/00225, Received On: 23/04/2014, Accepted On: 03/05/2014

**ABSTRACT**

Chikungunya is a viral disease caused by the bite of mosquitoes which has been reported to cause infections in humans. Chikungunya and dengue fever are closely related as they share common symptoms and are often mistreated by most of the doctors. Even though the symptoms are almost alike but the excruciating arthritic pain associated with Chikungunya cannot be neglected and mistreated with joint pain. For this purpose a survey based study has been carried out in Karachi, Pakistan in order to inquire if Chikungunya is being familiar among the health care professionals or not. The survey comprised of 202 individuals covering majorly doctors, pharmacists and medical students and it was statistically evaluated that 77.7% participants of the survey emphasized on conducting the awareness program and highlighted the need to instigate the mutual strategies of delivering data regarding prevention and control of Chikungunya. The study endeavors to begin familiarity with the subtle difference between Chikungunya and Dengue Fever and emphasizes to treat the fine drawn distinctive symptoms the way they should be treated in the case of chikungunya.

**KEYWORDS**

Chikungunya, Viral Infection, Mosquito Borne Disease

**INTRODUCTION**

Chikungunya is a viral disease that infects humans by the bite of infected mosquitoes. The genus of the CHIKV is Alphavirus and belongs to the family Togaviridae. The name of the virus Chikungunya is derived from the Makonde word which is some African language meaning “that which bends up” and is named after the hunched back posture of the patients developed due to the arthritic symptoms which is a characteristic of the disease<sup>1</sup>. Initially the spread of this viral disease was from the vector *Aedes aegypti* mosquitoes<sup>2</sup> but according to the recent research reports by the Pasteur Institute in Paris reveal that this virus has undergone the mutations which enable the chikungunya virus

transmittance to occur by *Aedes albopictus* as well<sup>3</sup>. Chikungunya virus or CHIKV was first isolated in Tanzania in 1953 from the blood sample of the febrile patient<sup>4</sup>. The incubation period of CHIKV is usually 3-7 days and may be 2-12 days. Geographically it is distributed mainly in Asia and Africa, new areas of the world are also prevailed by the chikungunya virus through the infected travelers such as America and Europe<sup>5</sup>. The mosquito-borne Chikungunya and dengue fever are closely related as they share common symptoms like they are attracted to bite in day time and breed in fresh water, cause fever which may be upto 40 °C (104 °F), headache, joint pain, adenopathy etc. and hence the patients are often wrongly diagnosed as dengue when they are actually suffering from chikungunya in parts of the world where awareness about Chikungunya is scarce. The debilitating joint pain (Arthritis)

**\*Address for Correspondence:**

**Somia Gul**

Faculty of Pharmacy,  
Jinnah Uni. for Women, Pakistan.

E-Mail Id: [drsomi1983@yahoo.com](mailto:drsomi1983@yahoo.com)

may last for a few days or may be prolonged to weeks, months or even years which is also a characteristic of the chikungunya fever and makes its dissimilar from the dengue fever<sup>6</sup>. The diagnosis of both chikungunya and dengue fever is made serologically on the basis of antibodies detection but it is essential to diagnose the CHIKV that is done by a blood test named Enzyme Linked Immunosorbant Assay (ELISA)<sup>7</sup>. The treatment is symptomatic which so is like the dengue fever. Since no vaccine has been developed or instigated yet to prevent the upsurge of chikungunya<sup>8</sup> therefore it is treated with fluids, ibuprofen, naproxen, paracetamol or acetaminophen may relieve symptoms of fever and aching. Aspirin should not be taken<sup>9</sup>.

In Karachi, Pakistan the microbiologists and researchers identified dengue type 3 virus that is Chikungunya virus in patients who were negative for Dengue virus apart from which type 1 and type 4 were already prevalent in Pakistan<sup>10</sup>. The acute arthritis is more debilitating and severe than the chronic arthritis<sup>11</sup>. Even the drought-affected populations encounter incidence of Chikungunya which is atypical. The drought conditions lead up to water storage in containers along with which the elevated temperature antedates the occurrence of Chikungunya<sup>12</sup>. There is a tenuous difference between Chikungunya and Dengue which are distinctive by pattern of febrile state<sup>13</sup>. Chronic arthritis secondary to Chikungunya is more excruciating in adults than in children<sup>14</sup>. Chronic peripheral rheumatism resulting from Chikungunya has been reported to cause immobility and restricted daily chores in some patients<sup>15</sup>. Chikungunya virus has been reported to transmit from mother to child which could lead to neonatal infections<sup>16</sup>. As it is re-emerging so there is a need to carry out research on Chikungunya which should include development of antiviral vaccines against the vector. Also awareness programs should be conducted which will provide great information for the prevention and spread of the disease<sup>17</sup>.

The aim of the study is to bring about the awareness of Chikungunya in health care

professionals and students of medicine in Pakistan in order to understand the re-emerging disease among the population of Pakistan which is often mistaken as Dengue Fever because of the lookalike presentation of symptoms in Chikungunya. The study endeavors to begin familiarity with the subtle difference between Chikungunya and Dengue Fever and emphasizes to treat the fine drawn distinctive symptoms the way they should be treated in the case of chikungunya.

## **METHODOLOGY**

As a means of achieving this, a survey had been conducted in Karachi where random hospitals and medical universities were made targeted to participate in the questionnaire. The selected sample size was 202 and the age range covered for this survey was from 20 to 50 years and onwards. The questionnaire comprised of 10 questions in all focusing on the general awareness about chikungunya among medical students and the health care professionals. The questionnaire encompassed about the knowhow of the topic such as the cause of the disease, mortality rate, resemblance of the symptoms with other lookalike disease (dengue fever) and its treatment methods. Education, gender and age have also been inquired in the questionnaire.

## **Statistical Analysis**

The data collected has been analyzed on SPSS version 16.0 in order to find out the awareness and knowledge of the chikungunya among the health care providers and medical students.

## **RESULTS AND DISCUSSION**

The questionnaire was being divided into two parts i.e., general survey about the awareness of Chikungunya and the other part focusing on the inquiry about the information regarding the symptoms and the treatment of Chikungunya.

The questions regarding awareness of Chikungunya revealed that out of 202 individuals only 24.7% were aware of the existence of the disease and only 22.2% knew the cause of chikungunya. While 77.7% individuals emphasized on the spread of knowledge regarding the newly heard disease.

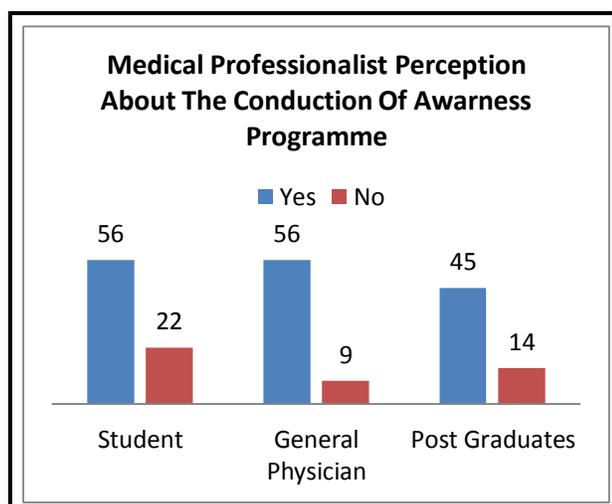


Figure 1: A histogram showing the percentage of individuals from the population n=202 about the conduction of the awareness program

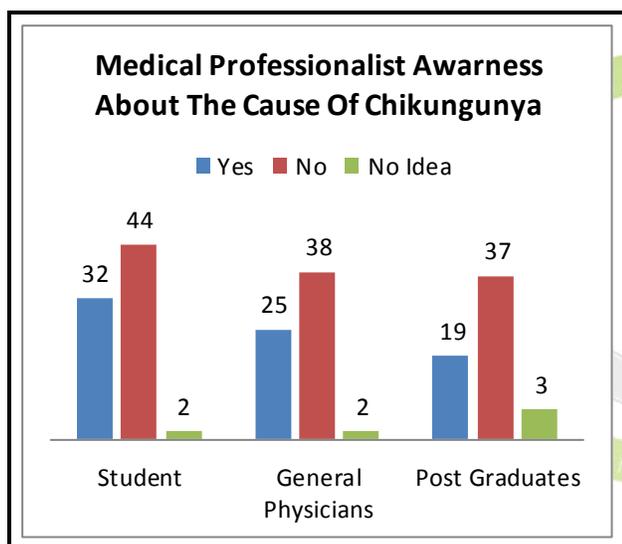


Figure 2: Knowledge about the cause of Chikungunya among the population n=202

The second part of the questionnaire covered if the surveyed population was aware of the symptoms and the treatment methods of Chikungunya.

Out of 202 individuals 27.7% answered that bleeding occurs in Chikungunya while 72.2% had no idea about that. 17.3% answered Chikungunya is fatal, 25.7% predicted the disease is treated symptomatically and that there is no specific treatment for Chikungunya while the rest of them did not have any idea about the treatment.

Since Chikungunya is a lookalike of dengue fever about which 31.1% individuals knew the fact while 68.8% did not know this. The above chart (fig 2) showing the knowledge about the cause of Chikungunya among different groups. From the group of 78 students, only 32 knew the cause, 44 did not know about it while only 2 of them had no idea.

From the group of 65 general physicians 25 were aware of the cause while only 19 out of 59 groups of postgraduates were well aware of the cause.

## CONCLUSION

From the above analysis it can be concluded that the level of awareness about chikungunya in the population of Karachi, Pakistan was almost scanty and only 50 out of 202 individuals knew a little about chikungunya.

Even the health care professionals and medical students had heard about the disease for the first time that reveals the importance of conducting awareness program in hospitals, medical universities as 157 out of 202 individuals emphasized on conducting the awareness program since Chikungunya presents itself more like a dengue fever yet differs in the type of vector and is mistreated and mistaken as dengue fever, So awareness needs to be spread about the distinctive features that may help them to differentiate the two diseases and treat them accordingly by keeping in mind the severity of one of the chikungunya symptoms like arthritis pain that should not be mistreated as less severe myalgia and joint pain as in dengue fever.

Although Chikungunya is not fatal as dengue fever yet the symptoms like arthritis pain cannot be neglected which turn fatal if may remain untreated.

## REFERENCES

1. Lahariya, C., & Pradhan, S. K. (2006). Emergence of chikungunya virus in Indian subcontinent after 32 years: a review. *Journal of Vector Borne Diseases*, 43(4), 151-160.

2. Jancin, B. (2011). Dengue or Chikungunya? Arthritis Is the Key, *ACEP News*. <http://www.acep.org/MobileArticle.aspx?id=82232&parentid=>
3. Blagrove, M. S., Arias-Goeta, C., Failloux, A. B., & Sinkins, S. P. (2012). Wolbachia strain wMel induces cytoplasmic incompatibility and blocks dengue transmission in *Aedes albopictus*. *Proceedings of the National Academy of Sciences*, 109(1), 255-260.
4. Pialoux, G., Gaüzère, B. A., Jauréguiberry, S., & Strobel, M. (2007). Chikungunya, an epidemic arbovirolosis. *The Lancet infectious diseases*, 7(5), 319-327.
5. (March 2014). WHO, Media Centre, Fact sheet N°327. Chikungunya. [www.who.int/mediacentre/factsheets/fs327/en/](http://www.who.int/mediacentre/factsheets/fs327/en/)
6. Brighton, S. W., & Simson, I. W. (1984). A destructive arthropathy following Chikungunya virus arthritis—a possible association. *Clinical rheumatology*, 3(2), 253-258.
7. Litzba, N., Schuffenecker, I., Zeller, H., Drosten, C., Emmerich, P., Charrel, R., & Niedrig, M. (2008). Evaluation of the first commercial chikungunya virus indirect immunofluorescence test. *Journal of Virological Methods*, 149(1), 175-179.
8. Caglioti, C., Lalle, E., Castilletti, C., Carletti, F., Capobianchi, M. R., & Bordini, L. (2013). Chikungunya virus infection: an overview. *The New Microbiologica*, 36(3), 211-227.
9. Chikungunya—Fact sheet (2013). *Comment, E. C. D. C. European Centre for Disease Prevention and Control*. Retrieved 12-17 [http://ecdc.europa.eu/en/healthtopics/chikungunya\\_fever/Pages/index.aspx](http://ecdc.europa.eu/en/healthtopics/chikungunya_fever/Pages/index.aspx)
10. Type-3 virus responsible for VHF outbreak. (2006). Daily Times, Karachi, Pakistan, [www.archives.dailytimes.com.pk/karachi/22-Dec-2006/type-3-virus-responsible-for-vhf-outbreak](http://www.archives.dailytimes.com.pk/karachi/22-Dec-2006/type-3-virus-responsible-for-vhf-outbreak).
11. Kennedy, A. C., Fleming, J., & Solomon, L. (1979). Chikungunya viral arthropathy: a clinical description. *The Journal of rheumatology*, 7(2), 231-236.
12. Jean-Paul, Chretien. Assaf Anyamba, Sheryl A. B., Robert F. B., Rosemary, S., Kibet S., Ann M. Powers, Clayton O. Onyango, Jennifer Small, Compton J. Tucker and Kenneth J. L. (2007). Drought-Associated Chikungunya Emergence along Coastal East Africa, *The American Journal of Tropical Medicine and Hygiene*. 76(3), 405-407.
13. Sampath, P. (2013). *Have severe joint pain and fever? Could be chikungunya!*, The Health Site, [www.health.india.com/diseases-conditions/have-severe-joint-pain-and-fever-could-be-chikungunya/](http://www.health.india.com/diseases-conditions/have-severe-joint-pain-and-fever-could-be-chikungunya/)
14. Fourie, E. D., & Morrison, J. G. (1979). Rheumatoid arthritic syndrome after chikungunya fever. *South African medical journal= Suid-Afrikaanse tydskrif vir geneeskunde*, 56(4), 130-132.
15. Simon, F., Parola, P., Grandadam, M., Fourcade, S., Oliver, M., Brouqui, P., & Tolou, H. (2007). Chikungunya infection: an emerging rheumatism among travelers returned from Indian Ocean islands. Report of 47 cases. *Medicine*, 86(3), 123-137.
16. Gérardin, P., Barau, G., Michault, A., Bintner, M., Randrianaivo, H., Choker, G., & Robillard, P. Y. (2008). Multidisciplinary prospective study of mother-to-child chikungunya virus infections on the island of La Reunion. *PLoS Medicine*, 5(3), e60.
17. Saxena, S. K. (2007). Re-emergence of the knotty chikungunya virus: facts, fear or fiction. *Future Virology*, 2(2), 121-126.