



CHIKUNGUNYA FEVER: ASSESSMENT OF KNOWLEDGE AMONGST PHYSICIANS OF LAHORE.

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Article received on:

25/02/2020

Accepted for publication:

16/05/2020

ABSTRACT... Objectives: The objective of this study was to assess the knowledge of doctors regarding chikungunya fever and their practices. **Study Design:** Cross Sectional study. **Setting:** Medicine OPDs of Ghurki Trust Teaching Hospital, Sheikh Zayed Hospital, and Sir Ganga Ram Hospital. **Period:** From January to March 2018. **Material & Methods:** Sample of 121 carried out using a structured questionnaire. Sampling population were doctors working in medicine departments of the three hospitals. Questionnaire assessed knowledge of doctors and were scored accordingly and grouped into good, adequate and poor knowledge. Scores of doctors were then analyzed with different variables. **Results:** Mean score was 9.4 ± 3.5 with 45.5% having poor knowledge, 37.2% with adequate knowledge and only 17.4% with good knowledge. Applying test of significance showed the variables with significant difference in scoring were age of doctors, designation of doctors and whether a doctor was confident enough to treat a chikungunya patient. **Conclusion:** Knowledge regarding chikungunya was adequate however a significant number of doctors pointed out that their knowledge was insufficient and they felt under-confident treating a patient. Therefore, more education and awareness in the form of workshops, seminars and conferences are required on chikungunya.

Key words: Chikungunya, Knowledge, Physicians.

Article Citation: Ayub S, Hussain R, Daud S. Chikungunya Fever: Assessment of knowledge amongst physicians of Lahore. Professional Med J 2020; 27(10):2235-2240. DOI: 10.29309/TPMJ/2020.27.10.4592

INTRODUCTION

In the midst of the unwavering burden of infectious diseases, arthropod-borne viral diseases have emerged out as an important public health concern, primarily due to climate change, poor public awareness and adoption of inadequate preventive strategies. Chikungunya shares the same vector as dengue, *Aedes aegypti*, with more or less same clinical spectrum; the disease however, follows a less fatal clinical course.^{1,2} The causative agent is alpha virus genus of the family *Togaviridae*. Chikungunya, derived from Kimakonde language, means 'to become contorted' referring to the crouched posture attained as a result of the debilitating polyarthralgias in chikungunya. Chikungunya is characterised by symptoms of fever and severe joint pain and may also include muscular aches, headache, nausea, fatigue and a morbilliform rash in 60-80% of the patients.^{2,3} Though the disease itself is self-limiting, the arthritic pains may last up to months or even years.⁴

Chikungunya originates from central Africa but the first major outbreak was reported in the 1960s in Bangkok.⁵ Chikungunya was discovered in Pakistan in rodents back in 1983 but it was not until November 2016 that Pakistan saw its first epidemic.⁶ A few cases of Chikungunya were also reported during the 2011 dengue epidemic.⁷ A deaf ear to NIH alerts after outbreaks in India and the unchecked cross-border mobility led to Chikungunya outbreak here in Pakistan in 2016.⁸ A study carried out in Karachi Pakistan in 2017 found 199 confirmed cases of chikungunya out of suspected 1275 patients. This study also highlighted the lack of knowledge regarding chikungunya amongst patients.⁹ It was seen that in tropical climates like those in South Asia, there is co-existence of dengue and chikungunya. This was documented by various studies conducted in Pakistan, India and Singapore. These studies compared clinical presentation of both diseases followed by confirmation of diagnosis of Chikungunya.⁹⁻¹²

In Pakistan, Dengue attained huge media-hype followed by tremendous public fright, and a golden chance for the government to attain political interests yielding huge allocation of funds and health sector resources for its prevention and control. Hence a disease so similar to dengue should be undoubtedly diagnosed in order to prevent over-enthusiastic management and treatment plans. In doing so many unreported cases of chikungunya would be identified and the unnecessary resources that are spent on dengue could be spent elsewhere. The objective of this study is to assess knowledge and practices of doctors regarding chikungunya fever in a private, a government and a trust hospital of Lahore, Pakistan.

MATERIAL & METHODS

Our study is a cross-sectional study carried out at three different hospitals of Lahore namely Ghurki Trust teaching hospital (GTTH), Sheikh Zayed Hospital (SZH) and Sir Ganga Ram Hospital (SGRH) to assess knowledge and practices of treating Chikungunya fever patients. Data collection was carried out from January to March 2018. Sampling technique used was convenience sampling. Total sample size was 121 with a response rate of 71% from a total of 170 doctors in medicine departments of the 3 hospitals combined. Inclusion criteria for sample were all doctors working in medicine departments of GTTH, SZH and SGRH. Other health care workers and medical students were excluded from the study. Data collection was done using a structured questionnaire. The questionnaire consisted of two sections. Section one comprised of demographic profile of each doctor while section two assessed the knowledge of each doctor about chikungunya followed by their practices.

Data was collected after informed consent from each participant. Statistical software spss version 21 was used for data entry and analysis. Knowledge was assessed by adding up of correct answers. There were a total of 19 correct answers. Average score was calculated followed by categorization of scores in poor, adequate and good. Each questionnaire was scored on a scale of 0-19 with poor scoring from 0-8, adequate from

9-12 and good score from 13-19.

Scores were compared between different variables followed by application of non-parametric tests kruskal wallis and mann whitney U to calculate P-value and to analyze its significance. Before commencement of the research approval was taken from the ethical review board of Lahore Medical and Dental College as well as from medical superintendents of the concerned hospitals.

RESULTS

The respondents had a mean age of 27.5 ± 6.0 . Total respondents were 121 out of which 71% (86) were female. There were 23 (19%) respondents from GTTH, 26 (21.5%) from SZH and 72 (59.5%) from SGRH. 81% (98) held only an MBBS degree and 23 (19%) also held an additional post-graduation qualification. 57 (47%) were house officers and medical officers, while there were 56 (46%) post-graduate trainees and 8 (7%) were consultants. Overall the knowledge assessed showed that mean score was 9.4 ± 3.5 with 55 (45.5%) having poor knowledge, 45 (37.2%) with adequate knowledge and only 21 (17.4%) with good knowledge regarding chikungunya.

Respondents were categorized into 20-25 years, 26-30 years and >30 years of age and their scores compared (as shown in Table-I) using Kruskal Wallis test which showed P-value of 0.002 indicating age had a very significant effect on chikungunya knowledge. With increasing age and thus experience, a doctor was more likely to have superior knowledge regarding chikungunya. Though, it seemed that doctors of Ganga Ram hospital had better scores but on applying Kruskal Wallis Test a P-value of 0.534 was obtained demonstrating that difference in scores of the three hospitals was insignificant. Kruskal Wallis test was again applied to see significance of difference in scores amongst doctors with different designation. Consultants ranked the highest followed by post-graduate trainees and house/ medical officers with similar results. A P-value of 0.001 was obtained depicting that difference in scores of different designations was significant. Therefore with higher designation

there were higher scores. 88 (73%) of doctors agreed that they were not confident about managing a patient with chikungunya. On comparing scores, higher scores were seen in those who said they were confident enough to treat patients with their current knowledge as opposed to the under confident doctors (p-value =0.03). 107 (88.4%) wished to receive more information about Chikungunya. Most doctors (41%) said that their main source of information regarding chikungunya was the internet or electronic media as shown in Figure-1. 77% (93) wished for more seminars, workshops and conferences in order to enhance their present knowledge regarding chikungunya.

The last portion of the questionnaire comprised of practices of doctors while treating patients of chikungunya. Only 16 doctors (13.2%) said they encountered a chikungunya patient. Out of these 16, only 8 (50%) said they gave anti-pyretic and analgesics to the patients, and 9 (56%) said they hospitalized the patients for observation. The scores of these doctors who encountered chikungunya patients are also shown in Table-I. Mann-Whitney U test was applied which obtained a P-value of 0.556 signifying no difference of scoring between those who did and those who didn't encounter patients. Only 14% of the respondents said there was a standard isolation area in their hospital for dengue or chikungunya

patients whereas 19.8% were not even aware if any isolation area was present in the hospital or not.

Sources of information

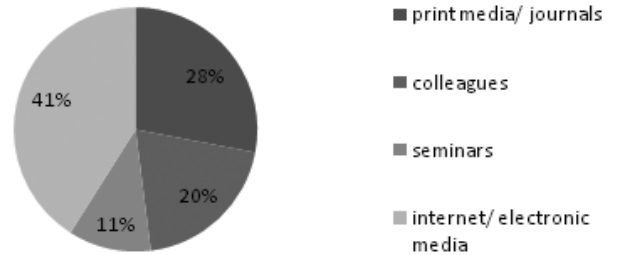


Figure-1. Source of current information regarding Chikungunya.

DISCUSSION

The eyes see what the mind knows. Early diagnosis and prompt treatment are the pivotal modes of secondary level of disease prevention. Early clinical diagnosis based on clinical signs and symptoms of the disease is inevitable in an economically friable country like Pakistan. The clinicians can make the correct clinical diagnosis only when the knowledge of the disease is comprehensive and the clinical practice regarding the treatment is flawless.

Variable (N=121)		Questionnaire Score			P-Value
		Poor	Adequate	Good	
Age (years)	20-25 (n=54)	27	19	8	0.002
	26-30 (n=53)	26	22	5	
	>30 (n=14)	2	4	8	
Hospital	Ghurki Trust Hospital (n=23)	9	12	2	0.534
	Sheikh Zayed Hospital (n=26)	15	7	4	
	Sir Ganga Ram Hospital (n=72)	31	26	15	
Designation	PG Trainee (n=56)	27	22	7	0.001
	House/ Medical Officer (n=57)	28	21	8	
	Consultant (n=8)	0	2	6	
Confident enough to manage a Chikungunya Patient?	Yes (n=33)	11	12	10	0.031
	No (n=88)	44	33	11	
Encountered chikungunya patient?	Yes (n=16)	6	7	3	0.556
	No (n=105)	49	38	18	

Table-I. Chikungunya knowledge score with respect to different variables.

In our study, the average knowledge score came out to be “adequate” (this outcome variable labelled as fair in similar studies), the results being consistent with another nationwide study.¹² Based on the knowledge scores majority of the participants had poor knowledge, a considerable number had adequate/fair knowledge while only a small number had good knowledge. This discrepancy among the knowledge scores are contrary to the already conducted nationwide study among Health Care Workers¹² where the majority had fair/adequate knowledge while those with poor and good knowledge were almost nearly of the same percentages. Another study conducted in Rawalpindi in 2017 also had results in contrast to ours where only a small percentage had poor/inadequate knowledge and a clear majority had good knowledge score.¹³

A large majority of the clinicians were aware that mosquito is the responsible vector for the spread of chikungunya, similar to previous studies^{12,13,14} however in contrast another study¹⁵ conducted in 2014 showed only a small percentage of participants knew about the vector. In our study 59.5% knew about the breeding sites of mosquito as opposed to 89% in an Indian study.¹⁶

Similarly, our study showed only a small majority (44.6%) knew of the causative viral agent, contrary to another study, where an overwhelming majority (76.24%) knew about the exact etiological agent.¹³ However, in a study conducted in 2015 in Karachi¹⁷ this particular knowledge was found to be as low as 22.2%. The particular question was considered as more of the “bookish” content rather than of any clinical significance. The distinction of the exact viral agent is of utmost diagnostic significance serologically. Awareness of majority of clinicians regarding the specific diagnostic test PCR and ELISA was in contrast with the previous study (43.7%).¹³

When inquired about the clinical course majority (78%) were sure about the clinical symptoms of chikungunya which is very much comparable to the other studies (64.5% and 65.5%) respectively^{12,13}, while in a Columbian study 92% correctly identified the symptoms.¹⁸ Though, it is

in contrast to another study conducted in Karachi where only 27.7% knew about the symptoms¹⁷ and in India where only 22% of the health care workers knew the symptoms.¹⁶

Alarmingly, only a small number (38%) were aware of arthritis as a distinguishing clinical feature between chikungunya and dengue, and an even more marginal number (19%) knew of the life-long immunity yielded by one time chikungunya infection. However, in contrast to a previous study¹², majority knew that symptomatic management with fluid and electrolyte replacement along with anti-pyretics and anti-inflammatory was the treatment of choice; these results were also similar to another study where 72% knew about the exact management.¹³

In our study 67% of the respondents knew that chikungunya had no currently available commercial vaccine, the results being consistent with a previous Indian study¹⁹ while in another local study only 34.5% of the health care workers knew about the non-availability of the vaccine.¹²

Like any other vector-borne disease, preventive measures form the most important mode of disease control in case of chikungunya. In our study 58% of the respondents knew about mosquito repellents and nets, while 56% agreed upon drainage of stagnant water, while only 22% agreed upon the wearing of protective clothing as preventive measures against chikungunya which is in contrast to the previous studies results^{13,20} where a good majority knew about the exact preventive measures.

Though falsified in our study, there is a general public perception that there is disparity of knowledge among the clinicians belonging to different clinical settings viz a government hospital, a semi-government and a private/trust hospital which is in contrast to the previous studies.^{12,13} However there was a very strong positive association between designation and knowledge level, and also between age and knowledge level, portraying that there is plenty of room for learning among the young juniors and a lot for the seniors to impart. A significant

majority admitted that they were less confident about managing a patient with chikungunya and wished to receive more knowledge about it. In fact, when scores of those who had encountered chikungunya patients were compared with those who had not, no significance was seen reiterating the doctors' lack of confidence.

Our study proved the scarcity in knowledge of doctors, especially young doctors concerning chikungunya. This evokes a dire need for the medical education departments of the medical colleges to lay stress on emerging diseases like chikungunya. All the previous studies agreed to the fact that chikungunya was not a topic that was dealt in medical colleges. Hence it is the responsibility of the medical education departments in collaboration of the public health and clinical departments to stay abreast with the emerging diseases, emphasizing on them in lectures and tutorials. Moreover on post graduate level, as rightly pointed out by our respondents, more seminars, workshops and conferences should be conducted while print and electronic media should go hand in hand to keep the clinicians abreast with the emerging disease threats and how to control them, primarily by prevention and then early diagnosis and treatment.

CONCLUSION

Our study established that knowledge regarding chikungunya aetiology as well as prevention and treatment were adequate amongst doctors of Ghurki Hospital, Sheikh Zayed Hospital and Ganga Ram Hospital. On the other hand, majority of the doctors felt their knowledge on the subject was insufficient making them under confident in treating a chikungunya patient. Most respondents pointed out the dire need for more seminars, workshops and conferences in order to enhance their current knowledge on the subject.



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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Saadia Ayub	Concept, Literature review, Designing Questionnaire, Data collection, Data entry, Data analysis, Write up.	
2	Rafia Hussain	Concept, Literature review, Designing Questionnaire, Data collection, Data entry, Write up.	
3	Seema Daud	Concept, Designing Questionnaire, Data analysis, Overall supervision.	