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Frequency of Suspected and Probable Case of Dengue in Adult Febrile Patients and their Knowledge about Dengue Fever

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Abstract

Background: illness is considered a frequent medical syndrome of dengue. Due to the increasing prevalence of dengue infectivity, appropriate diagnosis among patients helps regarding timely medical intervention, etiological examination as well as disease control.

Objective: To estimate the frequency of suspected and probable cases of dengue in febrile patients and their knowledge about dengue fever, presenting at outdoor of Jinnah Hospital, Lahore.

Methodology: It was a cross-sectional study, in which 400 adult febrile patients visiting at outdoor of Jinnah Hospital, Lahore were included. A convenient sampling technique was carried out. Among the total febrile patients included, the frequency of suspected and probable cases was calculated. Data was collected through a questionnaire, which was entered and analyzed using SPSS version 20.0.

Results: Out of 400 patients, 36.5% were 21-30 years old and 53.5% were female. Among these patients, 100% had fever (>2 and <10 days), 31.8% had headache, 51.8% had myalgia and43.8% patients had arthralgia while 12.5% were suspected cases of dengue. Majority (97.2%) had knowledge that full sleeve shirt can prevent dengue, none of the respondents had knowledge regarding dengue symptoms and 76% of respondents had knowledge that dengue is fatal. For the majority (76%) of respondents, the main source of information regarding dengue was health teams.

Conclusion: The study concluded that symptoms of dengue fever in the study patients, as well as the dengue, suspected cases were mainly headache, retro-orbital pain, myalgia, and arthralgia. The majority of the patients had knowledge about dengue prevention. Most of the adult febrile as well as suspected had no knowledge about the symptomology of dengue fever.

Keywords: Dengue, Suspected, Probable, Febrile, Adult

Article Citation: Khan FN, Maqsood F,Hashmi SF, Ali A, Bashir MU, Malik AR. Frequency of Suspected and Probable Case of Dengue in Adult Febrile Patients and their Knowledge about Dengue Fever. JSZMC 2021;12(2):08-12. **DOI:** https://doi.org/10.47883/jszmc.v12i02.51

Introduction

Febrile illness is considered a frequent medical syndrome of dengue, Japanese encephalitis, typhoid, leptospirosis, chikungunya, malaria, and influenza-A. Dengue is believed a disease that normally demonstrates warning signs just flu-like illness along with nausea, vomiting, fever, and body ache.[1] Dengue fever is one of the most broadly spread mosquito-borne diseases, transferred by contaminated mosquitoes of the Aedes genus. Among humans, dengue infectivity occurs due to 4 dengue virus serotypes i.e. DEN-I, -II, -III, and -IV) of Flavivirus species. According to the 1997 World Health Organization (WHO) classification, dengue virus infectivity was categorized into dengue fever (DF), dengue shock syndrome (DSS), and dengue hemorrhage fever (DHF).[2]

Currently, dengue fever is the most significant arthropod-borne contagious disease due to its extensive dissemination in over 100 world states and its capability for massive eruptions of dangerous diseases. The two-fifth of the population or 2500 million individuals worldwide are currently at dengue risk while each year almost 50 to 100 million dengue cases take place globally.[3]

In Karachi, during 1994, dengue first case was recorded and after that gradually moved to several other towns and cities of the country.[4] In 2013, WHO reported 8,546 dengue cases including 33 mortalities in district Swat, with common serotypes being DENV-I, II, and III. In addition to KPK, random cases of dengue were recorded from Balochistan, Sindh, and Punjab provinces as well. During 2013 in Punjab, 2165 cases were declared by health authorities and out of these cases fifty percent were only from the city Rawalpindi.[5]

Due to the increasing prevalence of dengue

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infectivity, appropriate diagnosis among patients helps regarding timely medical intervention, etiological examination as well as disease control, therefore, priority must be given to dengue diagnosis during the severe phase.[6] Dengue infection control is a leading challenge as it needs not just efficient control of the vectors that are considered responsible regarding virus transmission but also rapid and accurate diagnosis. So far, timely and accurate identification of early recognition of the dengue virus remains an issue regarding the management of patients infected with dengue among several areas of the world, particularly among low-income countries. An arrangement scheme regarding DENV was published by WHO that comprises criteria about probable, suspected, and confirmed cases of dengue.[7] Clinical suspected case of dengue is described like severe feverish illness ≥2 of symptoms like retro-orbital pain, rash, myalgia, arthralgia, leucopenia, hemorrhagic manifestations, and headache. Dengue probable case is well-matched with medical manifestation and positive Immunoglobulin G (IgG) test among severe serum samples. Dengue confirmed case is described as well-matched with medical manifestation and lab-confirmed case either by nucleic acid recognition in serum or recognition of NS1 antigen through authenticated immunoassay or fourfold increase in IgG or IgM (immunoglobulin M) antibodies in the paired samples gathered in convalescent and acute stages.[8]

Even now dengue fever is developing with the association of newer localities, population, and increase in amount, outbreak after outbreak. Dengue viral infectivity is yet a great challenge for treating health care providers.[9] Differentiating dengue from other febrile illnesses is the key to providing timely and appropriate care. Therefore, the current study is carried out regarding the frequency of suspected and probable cases of dengue in febrile patients presenting at outdoor of Jinnah Hospital Lahore; and to assess the knowledge of the febrile patients regarding the symptomology of dengue fever and its presentation.

Methodology

It was cross-sectional study, in which 400 adult febrile patients visiting outdoor Jinnah Hospital, Lahore, were included. Convenient sampling technique was carried out. Data was collected through a questionnaire, which was entered and analyzed using SPSS version 20.0. Among the total febrile patients included, the frequency of suspected and probable cases was calculated. Knowledge about different aspects of dengue fever was also assessed. Frequencies and percentages were calculated and data were presented in tables and graphs. The Chi-square test was applied to find out the association between categorical variables. Informed verbal consent of the patient was taken prior to the interview. Ethical approval was sought from the ethical committee of the hospital. The confidentiality of all the information was ensured and maintained.

Results

Among 400 patients, 78 (19.5%) were up to 20 years old, majority 146 (36.5%) were 21-30 years old and 98 (24.5%) were 31-40 years old while 78 (19.5%) patients were more than 40 years old. The mean age of the patients was 32.3±12.32 years. Among 400 patients, 186 (46.5%) were male while 214 (53.5%) were female patients.

Table-I shows that among patients, all 400 (100%) had fever (>2 and <10 days), 127 (31.8%) had headache, 60 (15.0%) retro-orbital pain, more than half 207 (51.8%) had myalgia, 175 (43.8%) had arthralgia/severe backache/ bone pain, only 2 (0.5%) had rashes and 180 (45%) had severe abdominal pain while 95 (23.8%) patients had decreased urine output.

Table-II depicts that among patients, 50 (12.5%) were suspected cases of dengue while none of the patients was found as a probable case.

Table-III indicates that among 400 respondents, 30 (7.5%) had knowledge about possible sites of dengue larvae and mosquito, 20 (5.0%) were able to check these places to kill larvae and mosquito, 25 (6.2%) had knowledge about mosquito bite and 136 (34.0%) had a history of family member suffered from dengue fever.

Among respondents, 389 (97.2%) had knowledge that a full sleeve shirt can prevent dengue and 7 (1.8%) said non-use of short can prevent from dengue. Out of these respondents, 127 (31.8%), 128 (32.0%), 140 (35.0%), and 26 (6.5%) had knowledge that the use of mosquito net, mospel, coil, and mat, respectively, can prevent from dengue during the night. The result shows that 44 (11.0%) respondents

had nets on doors and windows available while 385 (96.2%) respondents were aware that nets on doors and windows prevent from dengue. (Table-III)

Table-IV asserts that none of the respondents had knowledge regarding dengue symptoms. There were 304 (76.0%) respondents who had knowledge that dengue is fatal.

Table-III describes that among respondents major source of information regarding dengue was health teams 304 (76.0%), followed by television 91 (22.8%), radio 5 (1.2%), and newspaper 2 (0.5%).

Dengue suspected cases have a headache in 9.4% while 13.9% have no headache. As there is no significant difference, so the P-value is 0.208. In dengue suspected cases 15.0% have retro-orbital pain while 12.1% have no retro-orbital pain. As there is no significant difference thus p-value is 0.525. In dengue suspect cases 9.7% have myalgia while 15.5% have no myalgia. As there is no significant difference, so the p-value is 0.075 (Table-IV).

Table-I: Frequency distribution of febrile patients according to symptoms

Symptoms	Yes		No	
	Freq.	%age	Freq.	%age
Fever (>2 &<10 days)	400	100.0	0	0.0
Headache	127	31.8	273	68.2
Retro orbital pain	60	15.0	340	85.0
Myalgia	207	51.8	193	48.2
Arthralgia/severe backache/ bone pain	175	43.8	225	56.2
Rashes	2	0.5	398	99.5
Severe abdominal pain	180	45.0	220	55.0
Decreased urinary output	95	23.8	305	76.2

Table-II: Frequency distribution of febrile patients according to suspected and probable cases

Identification of cases	Yes		No	
	Freq.	%age	Freq.	%age
Suspected	50	12.5	350	87.5
Probable	0	0.0	400	100.0

Table-III: Frequency distribution of family head of febrile patients according to knowledge about dengue

Knowledge	Yes		No	
	Freq.	%age	Freq.	%age
Knowledge about possible sites of dengue larvae and mosquito	30	7.5	370	92.5
Can you check these places to kill larvae and mosquito	20	5.0	380	95.0
Knowledge about mosquito bite	25	6.2	375	93.8
Any family member suffered dengue fever	136	34.0	264	66.0
Knowledge about dengue prevention				
Full sleeve shirt	389	97.2	11	2.8
Non-use of short	7	1.8	393	98.2
Knowledge about dengue prevention during night				
Use of mosquito net	127	31.8	273	68.2
Use of Mospel	128	32.0	272	68.0
Use of coil	140	35.0	260	65.0
Use of mat	26	6.5	374	93.5
Availability of net on doors and windows	44	11.0	356	89.0
Net on doors and windows prevent from dengue	385	96.2	15	3.8
Knowledge about dengue symptoms				
Fever (>2 and <10 days)	0	0.0	400	100.0
Severe headache	0	0.0	400	100.0
Retro orbital pain	0	0.0	400	100.0
Myalgia and arthralgia	0	0.0	400	100.0
Rash	0	0.0	400	100.0
Bleeding from nose	0	0.0	400	100.0
Change in blood report	0	0.0	400	100.0
Dengue is fatal	304	76.0	96	24.0
Source of information about dengue				
Health team	304	76.0	96	24.0
Television	91	22.8	309	77.2
Radio	5	1.2	395	98.8
Newspaper	2	0.5	398	99.5

Table-IV: Distribution of dengue suspect with symptoms

Symptoms	Case		Total	P-value
	Dengue suspect	Other		
Headache				
No	38 (13.9%)	235 (86.1%)	273 (100%)	0.208
Yes	12 (9.4%)	115 (96.6%)	127 (100%)	
Total	50 (12.5%)	350 (87.5%)	400 (100.0%)	
Retro-orbital pain				
No	41 (12.1%)	299 (87.9%)	340 (100%)	0.525
Yes	9 (15.0%)	51 (85.0%)	60 (100%)	
Total	50 (12.5%)	350 (87.5%)	400 (100%)	
Myalgia				
No	30 (15.5%)	163 (84.5%)	193 (100%)	0.075
Yes	20 (9.7%)	187 (90.3%)	207 (100%)	
Total	50 (12.5%)	350 (87.5%)	400 (400.0%)	

Discussion

Fever is one of the clinical features of dengue, other common features include, headache, myalgia, retroorbital pain, and bleeding.[9] To overcome the threatening condition and spread of dengue fever, the present study was conducted in Jinnah Hospital Lahore. A total of 400 adult febrile patients were checked at Jinnah Hospital, Lahore randomly with the major complaint of fever. The result showed that females are more prone to the disease than males. Out of 400 study adult, febrile patients females were 214(53.5%) while males were 186 (46.5%). The current study showed that out of 400 adult febrile participants 50 (12.5%) were filled the criteria of the case definition of suspected dengue fever. In a previous study, the frequency of the suspected dengue was 107 (2%), this was also higher than our study findings. In a previous study, confirmed dengue cases were 40 (0.8%). In that study fever with chills and rigors, body aches, headache, myalgia, rash, hemorrhagic manifestations, platelet count, total leukocyte count, and ALT, are parameters to screen the cases of suspected dengue virus infection; the diagnosis cannot be confirmed unless supported by molecular studies or dengue specific IgM.[10] The mean age of study participants was 32.3±12.2 years. Out of 400 patients, headache 127 (31.8%), myalgia 207 (51.7%), arthralgia 175 (43.8%) were the major symptoms.

Out of 400 patients, 370 (92.5%) told that they people knew about larvae places in their homes which showed their good knowledge about dengue fever. Out of 400 participants, 329 (82%) had not known about the symptoms of dengue fever which was very alarming while only 71 (17.8%) had some knowledge about dengue fever symptoms. There should be some public awareness campaigns conducted by concerned authorities about dengue fever. Out of 400 patients, 304 (76%) had known that dengue fever was fatal but 96 (24%) did not know about its fatality. A previous study showed that the participants had reported that basic information regarding dengue transmission vector and symptoms, and were generally aware of the seriousness of the disease, and practiced some level of prevention, much remains to be done to enhance the capacity of the community to combat dengue and dengue fever.[12] The source of information about dengue fever was by health teams 304 (76%), TV 91 (22.8%), radio 5 (1.3%) and newspapers 2 (0.5%) which showed the good working of concerned health department authorities like proper awareness of dengue fever to the health staff, their trainings, their regular field visits and their monitoring by the higher health authorities. The majority of study subjects had good information and knowledge on the transmission of DF, and good practices to prevent the disease. The study subject had better knowledge of the signs and symptoms.[13]

Conclusion

The study concluded that females were more febrile than males. The symptoms of dengue fever among patients as well as the dengue suspected cases were mainly headache, retro-orbital pain, myalgia, and arthralgia. The majority of patients were aware of larvae places in their houses and also about dengue prevention. Most of the adult febrile and suspected had no knowledge about the symptomology of dengue fever.

Authors Contribution: FNK: Conception of work and Drafting. **FM:** Interpretation of data and revising. **SFH:** Design of work and revising. **AA:** Analysis of data and Drafting. **MUB:** Design of work and revising. **ARM:** Conception of work and revising. All authors critically revised and approve its final version.

Conflict of Interest: Authors has declared no conflict of interest.

Sources of Funding: The source of funding was self.

Disclaimer: None

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