DENGUE FEVER MANAGEMENT PRACTICES OF GENERAL PHYSICIANS: DIAGNOSIS AND FOLLOWING WHO/ DENGUE GOOD CLINICAL PRACTICE(GCP) GUIDELINES

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ABSTRACT

General physicians (GPs) are first contact by the majority of patients for management of any illness. So the way they manage dengue fever (DF) in community can architect the fate of epidemic in terms of morbidity and mortality. This study aimed at exploring how GPs diagnose DF and whether they are following WHO/ Dengue GCP guidelines for DF.

Methodology: A total of 350 GPs were interviewed for their diagnostic practices regarding DF and whether they followed the above mentioned guidelines of not.

Results: Out of 350 doctors, 204 (58.2%) doctors used diagnostics tests where they had suspicion of dengue fever and most of them, 188 (53.6%) relied on serial Complete blood count (CBC) for the diagnosis while 16 (4.7%) doctors claimed that they ordered NS 1 protein. For reasons for not using the tests, 119 (81.5%) said that due to strong clinical suspicion they thought it was unnecessary and 8 (5.4%) said the patients unwilling while 17(11.6%) doctors mentioned unaffordability of patients. 306(86.6%) doctors knew that either WHO guidelines/ Dengue GCP guidelines existed for management of DF. 171(48.8%) doctors followed these guidelines for management of DF while 66 (32.2%) doctors partially used it while rest(18.8%) said that they never used it.

Conclusions: diagnostic practices were not upto standards and a big proportion of GPs did not follow WHO/ Dengue GCP guidelines and hence training of GPs in this regard is recommended.

Keywords: dengue fever, general practitioners, management practices, WHO/ Dengue GCP guidelines

INTRODUCTION

Dengue fever (DF) is one of the most rapidly spreading mosquito borne viral disease in the world. [1] In the last fifty years incidence has increased 30 folds with increasing geographic expansion to new countries and due to rapid urbanization. An estimated 50 million cases occur every year and around 1.8 billion population is vulnerable to contract this disease globally.[1] Dengue fever was not known in Pakistan few years back. Earliest reported cases were in initial years of previous decade that is in 1994.[2, 3] In 2006 a dengue outbreak was again reported in Karachi.[4] Dengue cases were reported in 2003, 2006 and 2007 in Punjab.[5] However in year 2008 and 2010, a dengue epidemics hit Lahore city .[5, 6] Unexpectedly in year 2011 residents of city Lahore experienced world's largest epidemic of this disease where case toll reached over twenty thousands and around four hundred deaths and later the disease has been rampant on KPK province as well.

Dengue Virus has four serotypes (DEN1, DEN2, DEN3, DEN4). and infection is caused by any one of them conferring lifelong immunity for that type. [7,8]The incubation period of dengue fever (DF) ranges from 3-15 days.[1] Dengue virus infection can lead to a range of syndromes that is, from asymptomatic infection to DF and to more severe form i.e. DHF or dengue shock syndrome (DSS).[8] Fluid and electrolyte management is the main stay of treatment due to lack of antiviral therapy .[9,10]

General practitioners retain an important position in the hierarchy of health care providers as far as this disease is concerned. They are the first contact by the majority of patients for management of any illness. So the way they manage dengue fever in community can architect the fate of epidemic in terms of morbidity and mortality. Rafique et al conducted a survey to find out that a large number of physicians were lacking knowledge of diagnosis of dengue fever.[11] Lee et al,

reported that there were significant variations in physicians' practices as far as dengue fever management was concerned.[12] A study from Taiwan reports significant deficits in knowledge of health care providers regarding dengue fever and other mosquito borne illnesses. [13] Another study from Taiwan has shown lack of knowledge among physicians.[14] Thaver et al, identified need of training for clinical management of dengue fever in General physicians of Karachi. [15] In the light of above mentioned facts it was pertinent to conduct a study that appraised clinical practices of general practitioner of Lahore about management of dengue fever.

METHODOLOGY
A total of 350 general physicians from Abbottabad and Lahore were interviewed and asked about how they diagnose dengue fever in patients presenting to them and do they follow either WHO guidelines or Dengue GCP guidelines for management of dengue fever.

RESULTS
A total of 350 general physician, 127(36.3%) from Abbottabad and 223(63.7%) from Lahore participated in the study. Out 350, 327(93.4%) were males and 23(6.5%) were females. 234(66.8%) were having basic

medical qualification i.e MBBS while rest of them 117(33.2%) had some postgraduate qualification like FCPS, MD or some clinical Diploma.

Out of 350 doctors, 204 (58.2%) doctors used diagnostics tests where they had suspicion of dengue fever while 146(41.7%) never employed any tests for diagnosis of dengue fever. Amongst 204 doctors; most of them, 188 (53.6%) relied on serial Complete blood count (CBC) for the diagnosis while 16 (4.7%) doctors claimed that they ordered NS1 protein test to diagnose dengue fever. Remaining doctors who did not used laboratory investigations for diagnosis of DF were asked the reasons for not using the tests. 119 (81.5%) said that due to strong clinical suspicion they thought it was unnecessary and 8 (5.4%) said the patients were not usually willing for blood testing while 17(11.6%) doctors mentioned unaffordability of patients for not ordering the tests.

306(86.6%) doctors know that either WHO guidelines or Dengue GCP guidelines existed for management of DF. When asked about following either of the guidelines, only 171(48.8%) doctors said that they used these guidelines for management of DF while 66 (32.2%) doctors said that they partially used it while rest (18.8%) said that they never used any such guidelines.

Table 1: Sociodemographic characteristics of participants N=350

characteristics	categories	Frequency	percentage
gender	male	327	93.4%
	female	23	6.5%
province	Lahore	223	63.7%
	Abbottabad	127	36.3%
Qualification	Basic medical education	234	66.8%
	postgraduation	117	33.2%

Table 2: Management practices of GPs regarding DF n=350

Questions	responses		Frequency	percentage
Ordering Lab test to confirm DF	yes	CBC	188	53.7%
		NS1	16	4.5%
	no		146	41.7%
Reasons for not using Laboratory tests for diagnosis of dengue fever	Relying on clinical assessment		119*	81.5%
	Patients not willing		8	5.4%
	Patients affordability		17	11.6%
Knowledge of WHO/Punjab Provincial DF management guidelines	yes		304	86.6%
	No		46	13.4%
Following WHO/Punjab Provincial DF management guidelines	Yes		171	48.8%
	Partially		66	18.8%
	No		113	32.2%

*n=146

DISCUSSION

Dengue fever is an important disease making 1.8 billon people vulnerable to it globally.[1] How general practitioners manage the case, being the first contacts in the hierarchy of health care providers, is an important consideration regarding the morbidity and mortality caused by DF. Its noteworthy that despite government efforts the management practices were not upto standards given in WHO/ Dengue GCP guidelines. As only 58.2% used either CBC or NS1 test to diagnose dengue fever while rest of 41.8% never used any test to diagnose DF. Lee also reported wide variation in DF management by doctors.[12] Rafique et al also pointed out lacking in diagnostic practices of doctors in Pakistan.[11] The lack of knowledge amongst doctors of WHO or Punjab provincial guidelines of DF management is also point of concern. Punjab government also arranged workshops regarding training of a General physicians regarding DF management according to these guidelines. Study from Taiwan also reports similar finding where doctors lack knowledge regarding dengue fever.[13]

Thus, training of general physicians is recommended on continuous basis to bring standardization to DF management according to guidelines. Thaver in his finding endorsed the need of training of doctors regarding DF mangemant.[15]

RECOMMENDATIONS AND CONCLUSIONS

Study results show variations in diagnostic practices of general physicians which were not upto the standards laid down in WHO/Punjab Provincial guidelines and hence training workshops of general physicians regarding DF management are highly recommended.

REFERENCES

1. World Health Organization. Dengue: guidelines for diagnosis, treatment, prevention and Control. WHO/HTM/NTD/DEN/2009.1. Geneva: [cited on 16 February, 2011] availabe from:URL:httpV/apps.who.int/tdr/svc/publicatio ns^ainina-guideline publications/denque-diaanosis-treatment>
2. llyas, M. Public Health and Community Medicine, 18thed. Karachi:Times Publishers; 2007.
3. Paul RE, Patel AY, Mirza S, Fisher-Hosch SP. Expansion of epidemic dengue viral infections to Pakistan. Intl. J of Inf Dis. 1998;2(4,):197–201
4. E. Khan E, Siddiqui J, Shakoor S, MehrajV, B. Jamil B.Dengue outbreak in Karachi, Pakistan, 2006: experience at a tertiary care center. Transactions of the Royal Society of Tropical Medicine and Hygiene. 2007;101(11):1114-1119
5. Tahir Z, Hafeez S, Chaudhary A. Spatial and seasonal variations of dengue fever in Lahore 2008. Biomedica Jul - Dec 2010;26(2):166-72.
6. Mahmood N, Rana, Younus M, Qureshi, Zafar, Mujtaba, Shaukat G et al. Prevalence and Molecular Characterization of Dengue Viruses Serotypes in 2010 Epidemic. Am J of Med Sc.2012;343(1):61–64
7. Halstead SB. Pathogenesis of dengue: challenges to molecular biology. Science 1988;239:476-81.
8. Kurane I. Dengue hemorrhagic fever with special emphasis on immunopathogenesis. Comp Immunol. Microbiol Infect Dis 2007; 30:329-34.
9. WHO. Comprehensive guidelines for prevention and control of dengue and dengue haemorrhagic fever: Revised and expanded. World Health Organization, Regional Office for South Asia, 2011.
10. Solomon T, Dung NM, Vaughn DW, Kneen R, Thao LT, Raengsakulrach B, et al. Neurological manifestations of dengue infection. Lancet 2000: 255: 1053-9.
11. Rafique I, Saqib MAN, Siddique S, Munir MA, Malik IA, Rao MH et al. Dengue management and its practices amongs physicians of major cities of Pakistan. JPMA. 2015; 65(4):392-396.
12. Lee LK, Thein TL, Kurukularatne C, Gan VC, Lye DC, Leo YS. Dengue Knowledge, Attitudes, and Practices among Primary Care Physicians in Singapore Ann Acad Med Singapore 2011;40:533-8.
13. Huang HL, Chin TY, Huang KC, Cheng SY, Yao CA, Lee LT. Travel- Related Mosquito-Transmitted Disease Questionnaire Survey among Health Professionals in Taiwan J Travel Med 2011;18: 34-8. Int Health 2011;3:126-30.
14. Ho TS, Huang MC, Wang SM, Hsu HC, Liu CC. Knowledge, attitude, and practice of dengue disease among healthcare professionals in southern Taiwan. J Formos Med Assoc 2013;112:18-23.
15. Thaver AM, Sobani ZA, Qazi F, Khan M, Zafar A, Beg MA. Assessing the need for training: general practitioners\' knowledge, attitude and practice concerning dengue and malaria in Karachi, Pakistan. Int Health 2011;3:126-30.