

# Knowledge and Practices of General Practitioners Regarding Management and Prevention of Dengue Fever

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## ABSTRACT

**Background:** Dengue is caused by the infection of dengue virus. The virus is transmitted by the Aedes mosquito, of which Aedes aegypti is the most important vector. Early recognition of dengue is a crucial first step in this process, with a robust management strategy at the first point of care having the invaluable potential to reduce unnecessary hospitalization and prevent death. General practitioners have a vital and active role to play in providing care, support and identifying the sign of impending haemorrhagic dengue fever which is serious consequences of dengue fever needs referral tertiary care for intravenous fluid replacement, platelet transfusion along with supportive care.

**Aim:** To assess knowledge about dengue fever, its management and prevention among GPs.

**Methods:** It was cross-sectional descriptive study included 38 general practitioners practicing in Shakargarh city, District Narowal over a period of one month from 20.07.2012 to 20.08.2012.

**Results:** There were 28 (73.7%) were males and 10 (26.3%) were females with mean age of 45.0±11.07 years. Five (39.5%) practitioners attended short course/symposium on management of dengue fever, 33 (86.8%) advised full blood count on first visit of dengue suspected patients and diagnosed as dengue fever patients. Twenty (68.4%) practitioners classified the patients of dengue fever into different management groups as per WHO guidelines. Eleven (28.9%) practitioners referred the patients to specialized center. Nineteen (50%) practitioners gave emergency treatment and referred to specialized center. Twenty eight (73.7%) practitioners advised ORS and 25 (65.8%) gave intravenous fluids for management of dehydration.

**Conclusion:** Intravenous fluids and ORS were preferred extensively for the management of dehydration and strict bed rest was also advised.

**Key words:** Knowledge, Practice, Management, Dengue Fever

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## INTRODUCTION

The first confirmed dengue haemorrhagic fever outbreak in Pakistan occurred in 1994.<sup>1</sup> Epidemic dengue infection was present in southern Pakistan for 2 consecutive years.<sup>2</sup> During 2005-2006, there was an unprecedented ascent in epidemic dengue haemorrhagic fever activity in the country, with a large number of cases being reported from Karachi. More than 3,640 patients with signs and symptoms suggestive of dengue fever were admitted to several referral hospitals in the country, and 40 were reported dead. It was appalling to note that 37 of these deaths occurred in Sindh. Most of the cases were from the east, center and north of Karachi. There is now evidence that co-circulation of DEN-2 and DEN-3 was responsible for the 2006 out-break.<sup>3</sup> In previous studies, significant independent association of male gender with dengue haemorrhagic fever has been

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observed. A higher mortality rate was however seen in females. Dengue fever is increasingly becoming an

epidemic in Pakistan. Due to the high cost of treatment, the disease spread more rapidly in 2011 than in previous years.<sup>4</sup> It has attracted the attention of the Government of Pakistan, especially the Punjab Government since it is widespread in that particular province of the country. As of November 2011, it has killed over 300 people in the several months and over 14,000 were infected by this mosquito born disease. Majority of the people infected are from the Lahore area in Punjab, Pakistan. General practitioners have a vital and active role to play in providing care, support and identifying the sign of impending haemorrhagic dengue fever which is serious consequences of dengue fever needs referral to tertiary care for intravenous fluid replacement, platelet transfusion along with supportive care. The present study helps to assess the knowledge of general practitioners about dengue fever, its management and prevention in Shakargarh, District Narowal.

## SUBJECTS AND METHODS

This cross-sectional descriptive study was conducted in Shkargarh city, District Narowal over a period of one month from 20.07.2012 to 20.08.2012. Thirty eight general practitioners practicing in Shakargarh

having at least MBBS degree or above and are registered with Pakistan Medical and Dental Council. All general practitioners having at least MBBS degree or above and are registered with Pakistan Medical and Dental Council were included and all health care provided without MBBS degree were excluded. A semi-structured questionnaire was prepared by researcher and finalized after pre-testing. Data was entered in to computer using Epi Info 6. Frequencies and percentages were calculated.

## RESULTS

Table 1: Demographic data of the subjects

Variable	No.	%
<b>Age (years)</b>		
≤30	5	13.2
31 – 40	6	15.8
41-50	13	34.2
>50	14	36.8
<b>Gender</b>		
Male	28	73.7
Female	10	26.3
<b>Experience (years)</b>		
<10	9	23.7
10 – 20	12	31.6
>20	17	44.7
<b>Post graduation</b>		
Yes	13	34.2
No	25	65.8
<b>IV management of dehydration</b>		
Yes	25	65.8
No	13	34.2

There were 28 (73.7%) were males and 10 (26.3%) were females with mean age of 45.0±11.07 years. Nine (23.7%) had <10 years, 12(31.6%) had 10-20 years and 17(44.7%) had <20 years experiences after graduation. Thirteen (34.2%) had done their post graduation while majority 25(65.8%) had not done their post graduation. Fifteen (39.5%) attended short course/symposium on management of dengue fever while majority 23(60.5%) did not attend any short course/symposium. Thirty three (86.8%) did full blood count on first visit of dengue suspected patient while only 5(13.2%) had not doing the full blood count. Twenty six (68.4%) practitioners notify dengue fever disease while 12(31.6%) did not notify. Twenty six (68.4%) practitioners classify the patient of dengue fever into different management groups as per WHO guidelines while 12(31.6%) were not classified. Only 3(7.9%) said they give intramuscular injection to patients with dengue fever while majority of the GPs 35(92.1%) said they did not give IM injection. Twenty eight (73.7%) practitioners advised ORS for management of dehydration while 10(26.3%) practitioners no advised. Twenty five (65.8%) practitioners give intravenous fluids for management of dehydration while 13(34.2%) had not

given the IV management of dehydration. Eight (21.8%) practitioners gave antibiotics during treatment while 30(78.9%) not given the antibiotics. Six (15.8%) practitioners advises their patients to contact the clinic within 24 hours if they develop warning signs, 9(23.7%) said contact the clinic immediately and 23(60.5%) said contact the specialized center immediately (Table 1).

## DISCUSSION

Dengue fever is increasing rapidly in Pakistan like other countries namely Sri Lanka, Indonesia, Bangladesh, India, Maldives, Myanmar, and Thailand<sup>5</sup>. Dengue fever is found in Pakistan mostly during and shortly after the rainy season. This disease has created devastating situation in Pakistan during the year 2011<sup>4</sup>. General practitioners play a vital and active role in providing care, support and identifying the sign and symptoms of dengue fever<sup>6</sup>. The present study was conducted to assess the knowledge of general practitioners about dengue fever, its management and prevention in Shakargarh, District Narowal. A group of thirty-eight general practitioners was approached to acquire appropriate outcomes. It was found during study that 29.0% general practitioners were up to 40 years old and 71.0% were more than 40 years old. The findings of our study are comparable with the study conducted by Lee and coworkers<sup>7</sup> who reported that 30.5% general practitioners were upto 40 years old and 69.5% were more than 40 years old. Our study showed that majority (73.7%) of the general practitioners were males. The same study conducted by Lee et al<sup>7</sup> also confirmed that majority (61.8%) of the general practitioners were males. Experience is imperative and plays a significant role for general practitioners in health care delivery. It was encouraging that majority of the GPs had enough experience (between 10-20 years or more than 20 years). Only 23.7% GPs had experience less than 10 years but managed dengue cases efficiently. As far as education of general practitioners is concerned, 34.2% had done their post-graduations. There were only 10.5% GPs working in the tertiary care hospitals. Short courses/symposium on management of dengue fever play a considerable role but it was discouraging to know that majority (60.5%) of the general practitioners did not attend any short course which is very essential for updating their knowledge about dengue.

Internet is one of the leading sources to have information about numerous diseases. During current years, due to prevalence of dengue much data is available on internet regarding management and prevention. Study revealed that 60.5% GPs used internet to acquire adequate information regarding dengue fever. Rao and colleagues<sup>8</sup> also confirmed in

their study that internet has empowered the human race in the pursuit of knowledge as no other media have before. It is continuously evolving as a global communications network, with several hundred million people worldwide using the Internet. It was encouraging that general practitioners were well aware about the symptoms of dengue fever because 86.8% GPs ordered full blood count on first visit of dengue suspected patients and 57.9% ordered haematocrit to cure the patients instantly. World Health Organization also recommends complete blood count (during the first visit of every suspected patient with white blood cell count, haematocrit, thrombocytopenia and liver function test<sup>9</sup>).

The present study revealed that a mainstream of the general practitioners confirmed the diagnosis of dengue fever through laboratory investigations. Majority also informed the community regarding dengue fever. A major proportion of the GPs classified dengue fever patients into numerous management groups (i.e. A, B and C) according to WHO guidelines<sup>9</sup>. An overwhelming number of GPs managed group-A patients at clinic as outpatients and follow up. In case of group-B and C patients, majority of the GPs gave them emergency treatment and referred to specialized centers which is rather in accordance to the WHO recommended guidelines to decrease the mortality and morbidity. A study done by Lee and coworkers<sup>7</sup> also confirmed that an enormous amount of general practitioners monitored confirmed or suspected cases daily, and one-third referred patients to a hospital always or often.

It is evident from study that for better management majority (89.5%) of general practitioner were more watchful and they assessed warning signs in dengue patients on daily basis. Majority also monitored adequacy of urine output. Intramuscular injection practice was not observed among the majority but 7.9% general practitioners gave injection to dengue patients. During treatment, Aspirin/NSAIDS are not useful for dengue patients. Study also disclosed that 89.5% general practitioners did not prescribe Aspirin /NSAIDS to dengue patients which are directly needed in the management of dengue fever. The findings of our study are comparable and showed better results than the study conducted by Iftikhar and Burney<sup>10</sup> who reported that 76.0% physicians knew that drugs like Aspirin, NSAIDS and Intramuscular injections etc. should be avoided.

Oral rehydration salt (ORS) is considered one of the best liquids for management of dehydration which not only prevents dehydration but also maintains electrolyte balance. 73.7% general practitioners advised their dengue patients to use ORS. Schexneider and Reedy<sup>11</sup> confirmed that increased

oral fluid intake is recommended to prevent dehydration and significant haemoconcentration.

For better treatment intravenous fluids were also given by most of the GPs to the dengue patients while majority also avoided giving steroid and antibiotic during treatment. The bed rest was strictly advised by the general practitioners to cure the patients with immediate effect. It is recognized that dengue is a perilous disease, adequate attention of health department and media role can overcome this devastating problem. Refresher courses should be arranged for general practitioners by health dept to enhance their knowledge for better management.

## CONCLUSION

Dengue fever is the most common mosquito-borne viral illness worldwide. Asia remains disproportionately affected by this disease. The first confirmed dengue haemorrhagic fever outbreak in Pakistan occurred in 1994. Changing environmental conditions have increased the transmission period for dengue. In this situation, the role of general practitioners cannot be ignored. Majority of the general practitioners were male and had ample knowledge and experience to manage the dengue cases. Only 10.5% were presently working in tertiary care hospital. An extensive proportion (60.5%) did not attend any short course on the management of dengue fever.

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