

Atypical Manifestations Among Dengue Cases of Rawalpindi and Islamabad (Pakistan) Afflicted with Dengue Epidemic 2019

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ABSTRACT

Objectives: To determine the frequency of unusual clinical presentations among dengue cases amidst dengue epidemic 2019.

Subjects & Methods: A cross-sectional descriptive study was carried out among 423 dengue cases who presented with atypical manifestations during dengue epidemic 2019. Data was collected from the files of dengue patient admitting in 3 teaching hospitals (Holy Family Hospital (HFH), Benazir Bhutto Hospital (BBH) and DHQ Hospital Rawalpindi) with informed consent of hospital administrators. Data was gathered pertaining to demographics, Dengue Fever (DF), Dengue Hemorrhagic Fever (DHF), Dengue Shock Syndrome (DSS) and atypical manifestations. Data analysis was done by Microsoft Excel 2010.

Results: Of the total 12,192 dengue cases admitted in the tertiary care hospitals affiliated with Rawalpindi Medical University, about 423 were identified with atypical presentation. Median age of our study participants was 39 ± 17.2 years. Most (68%) of them were males. Majority (33.1%) had respiratory distress while 11.3% and 10.4% had tachypnea and cyanosis respectively. In addition to this feeble pulse, cold clammy extremities, chest pain, metabolic acidosis, tachycardia and convulsion were also reported in small fraction. Around 5.2% of our patients were comatose and 82% of them were males. Most (45.1%) of our study subjects were diagnosed cases of DSS while rest of the 35.2% and 19.7% had DHF and DF respectively.

Conclusion: Unusual clinical presentations among dengue cases may attribute to unconsciousness and miserable health consequences.

Introduction

Dengue fever likewise other hemorrhagic fever is also getting enormously common in Southeast Asian region of the globe [1]. Dengue epidemic 2019 terrifying jolted the healthcare system of

Pakistan; apart from developing an extensive framework for patient care, disease surveillance and vector control by the concerned health officials, stringent efforts were also directed for social mobilization in tertiary care hospitals of Rawalpindi and Islamabad [2]. Dengue

fever has become abundantly perplexing for the population of afflicted regions due to their interaction with numerous risk factors around them [3]. Pakistan is at risk of being smashed by gigantic infectious disease epidemics due to numerous provoking states of affairs such as overcrowding, pitiable environmental sanitation, urbanization and water stagnation [4]. A broad spectrum of disease ranging from subclinical illness to severe ailment is attributed to dengue virus infection [5]. Leo Y et al in his research concluded that patients without warning signs can harmlessly be managed by prompt provision of healthcare [6]. World Health Organization recommends the admission of dengue patients manifesting the warning signs in need for their management under direct observation of healthcare personnel [7]. Centers for Disease Control and Prevention (CDC) have also highlighted the requisite for urgent visit to a healthcare facility in case of emergence of warning signs among dengue patients [8]. Examining the dengue cases for risk factors has also been determined beneficial for apt supervision and appropriate clinical management in order to lessen the likelihood of disease progression to severity [9]. The current study is therefore deliberated to have an overview of accompanying clinical signs among dengue patients who were admitted in public sector tertiary care hospitals of Rawalpindi amidst dengue epidemic 2019. Appraising the propensity of accompanying atypical signs among dengue cases would enable our strategic planners to significantly

perceive the seriousness of the issue deemed necessary for its efficient management.

Subjects & Methods

A cross-sectional descriptive study was done among 423 dengue cases who presented with unusual manifestations during dengue epidemic 2019 in 3 teaching hospitals (Holy Family Hospital (HFH), Benazir Bhutto Hospital (BBH) and DHQ Hospital Rawalpindi) affiliated with Rawalpindi Medical University. Data was collected from the files of admitted dengue patients with due permission of hospital administrators. Data was collected pertaining to demographics, Dengue Fever (DF), Dengue Hemorrhagic Fever (DHF), Dengue Shock Syndrome (DSS) and atypical manifestations. Data analysis was done by Microsoft Excel 2010.

Results

Of the total 12,192 dengue patients admitting in our 3 teaching hospitals amidst dengue epidemic 2019, about 423 patients were reported with some atypical clinical manifestations. Mean age of the patients in our study was 39 ± 17.2 years. Around 68% of them were males as depicted below in Figure 1. About 257, 92 and 74 patients in our study were admitted in HFH, BBH and DHQ Hospital Rawalpindi respectively. Most (45.1%) of them were diagnosed with DSS as depicted below in Figure 2.

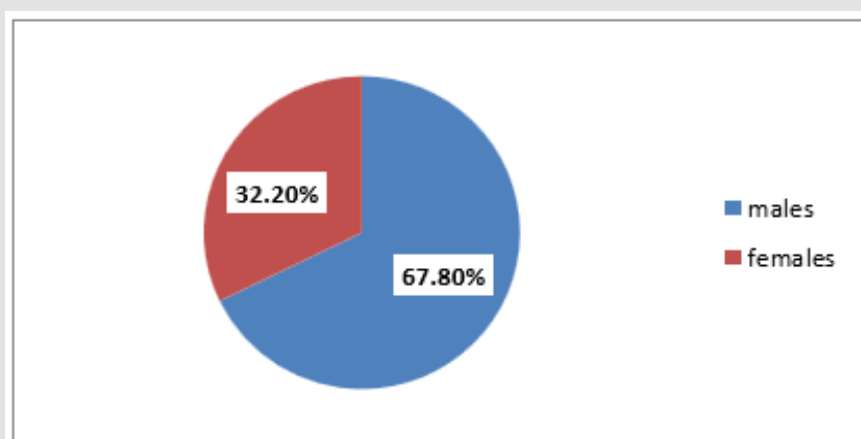


Figure 1: Gender distribution of dengue cases with atypical manifestations.

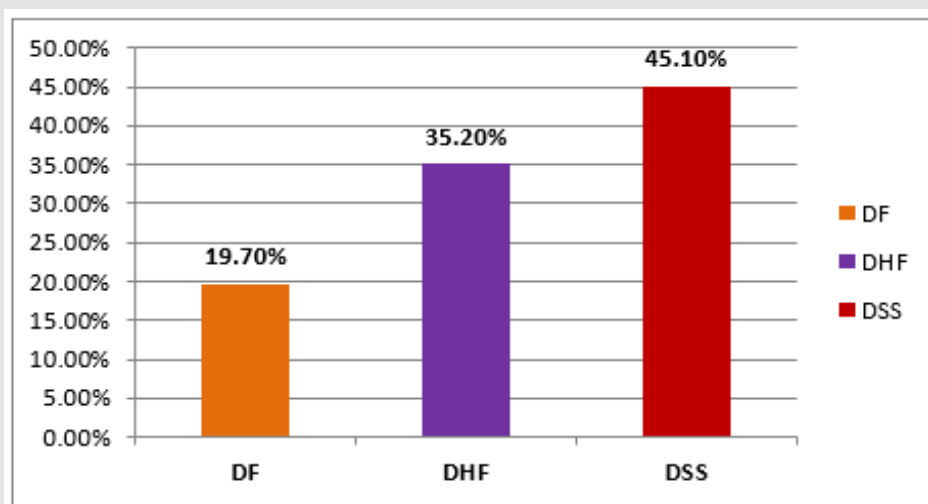


Figure 2: Dengue viral infections among dengue cases with atypical manifestations (n =423).

Discussion

Apart from commonest signs and symptoms associated with dengue fever, its atypical clinical manifestations should also be contemplated for getting rid of dreadful consequences [10]. Atypical clinical presentations among dengue patients might be attributed to complications of shock and numerous co-infections such as typhoid fever and malaria [11]. Although atypical manifestations are quite rare; but in addition to febrile, arthritic and hemorrhagic signs and symptoms, involvement of various systems and organs may lead to certain unusual clinical presentations [12]. Most (33.1%) of the dengue patients in our study were determined with respiratory distress followed by about 11.3% with tachypnea and 10.4% with cyanosis. A similar research by Mohamed NA et al to analyze the degree of respiratory symptoms among hospitalized dengue cases of International Yemen Hospital-Taiz revealed acute respiratory distress syndrome as the most frequent clinical manifestation followed by pulmonary hemorrhage, pneumonitis and pleural effusion [13]. Respiratory distress might be attributed to dengue hemorrhagic fever [14]. Similarly, an Indian dengue case was identified with transfusion - related acute lung injury secondary to transfusion with platelets that presented with hypotension, fever, difficulty in breathing and hypoxemia about 6 hours post transfusion [15]. Contrary to this, profuse pulmonary bleeding was

observed among children in dengue endemic regions was found to be secondary to dengue shock syndrome [16].

Although the involvement of the lungs during dengue fever is apparently unusual but it should aptly be noticed by healthcare professionals for prompt management and to halt the progression to complications. Getting aware of atypical manifestations pertaining to dengue fever is indispensable for our healthcare workforce in order to mitigate the risk of multi-organ failure and other life threatening conditions. About 27 out of 423 dengue cases recognized with atypical clinical presentation had tachycardia. Likewise, another study carried out by Mohan K et al during 2011-2018 shown bradycardia as an atypical manifestation among only 4% subjects in addition to meningitis (1.2%), hemoptysis (1%) and acute pancreatitis (0.4%) [17]. In fact, elucidating atypical clinical presentations in context of dengue fever is substantially vital for provision of primary care and to arrest the disease progression toward severity Table 1. The present study revealed atypical clinical manifestation among 19.7%, 35.2% and 45.1% of the patients diagnosed with DF, DHF and DSS respectively. About 22 patients in our study were found to be comatose in response to dengue and 82% of them were males. Kumar J et al also brought to our attention a comatose 68 years old that was initially diagnosed with dengue hemorrhagic fever. Her cerebrospinal fluid also revealed dengue specific IgM antibodies.

Table 1: Atypical manifestations among dengue patients (n=423).

Atypical manifestations among dengue patients - Hospital wise										
Hosp.	Cap. Refill (> 2 sec)	Cold clammy ext.	Tachycardia	Tachypnea	Feeble pulse	Metabolic acidosis	Resp. distress	Chest pain	Cyanosis	Convulsion
HFH	18	13	13	26	18	16	76	35	32	10
BBH	05	02	05	12	03	03	49	04	07	02
DHQ	08	06	09	10	07	08	15	03	05	03
Total	31	21	27	48	28	27	140	42	44	15

Atypical clinical manifestations among dengue patients – dengue clinical syndrome wise										
DF	06	06	05	07	06	08	23	10	07	05
DHF	13	11	12	13	13	11	30	22	14	10
DSS	12	04	10	28	09	08	87	10	23	0
Total	31	21	27	48	28	27	140	42	44	15
Atypical clinical manifestations among dengue patients – Gender wise										
Males	24	16	19	30	21	19	95	26	25	12
Females	07	05	08	18	07	08	45	16	19	03
Total	31	21	27	48	28	27	140	42	44	15

Unfortunately, she remained comatose with Glasgow coma scale of 6 and ultimately succumbed to dengue fever [18]. Of the varied atypical manifestations reported among pediatric population suffering from dengue, impaired consciousness was noticed among 1.9% of the affected children and 4 of these children ultimately succumbed to multi-organ failure and encephalopathy [19]. Atypical manifestations among dengue cases can also be perceived secondary to an abdominal surgery in the form of bilateral pleural effusion and severe respiratory distress that demands adequate fluid replacement and organ support for reversal of unfortunate health consequences [20]. Dengue shock syndrome alone or in amalgamation with neurological complication or respiratory

anguish is frequently associated with expiry of the patients [21]. Dengue epidemic 2009 at India also led to the exploration of some uncommon clinical findings like acalculus cholecystitis in addition to non-fulfillment of WHO proposed criteria for DHF and DSS [22]. In fact, dengue viral infections have now been reported worldwide with certain atypical presentations that are labeled by some experts as Dengue Expanded syndrome in order to comprehend the severity of the symptoms and associated fatality [23]. Nonetheless early diagnosis and swift interventions for reversal of these unusual manifestations can play pivotal role in survival of the infected individuals Table 2.

Table 2: Coma among dengue patients in tertiary care hospitals of Rawalpindi (n = 22).

Hospitals			Dengue clinical syndrome			Gender	
HFH	BBH	DHQ	DF	DHF	DSS	Males	Females
13	2	7	5	13	4	18	4

Conclusion & Recommendations

Unusual clinical manifestations among dengue cases are getting common. The urgent response of healthcare providers is necessitated in this regard for deterring the pitiable outcomes.

Funding Source

None to declare.

Conflict of Interest

Nil.

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