Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Index Copernicus value = 85.10

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Assessment of outcome of dengue fever in adult patients- A clinical study

Dr. Abhishek Singh[1], Dr. Pradeep Shailat[2]

[1,2]Assistant Professor, Department of General medicine, Noida International Institute of Medical Sciences, Greater Noida, U.P., India

ABSTRACT:

Background: The present study was conducted to assess outcome of dengue fever in adult patients. **Materials & Methods:** 64 patients with dengue fever of both genders was recruited. Symptoms such as abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation (ascites, pleural effusion), mucosal bleed, lethargy, restlessness, liver enlargement >2 cm, increase in hematocrit with a rapid decrease in platelet count was recorded. **Results:** The mean platelet count in males was 0.65lakhs/cu.mm and in females was 0.64 lakhs/cu.mm, AST was 328.4 IU in males and 329.5 IU in females, ALT was 294.6 IU in males and 296.1 IU in females, Albumin level was 3.2 g/L in males and 3.1 g/L in females. Common warning signs fluid leakage (rising haematocrit, ascites, pleural effusion) was seen in 20.4%, platelet count <1,00,000/cumm in 70.6%, ALT/AST >3 times normal upper limit in 52.3% and persistent vomiting in 30.7%. **Conclusion:** Dengue is usually a short lasting and self-limiting disease. severe infections can be lethal, especially if it is a secondary infection.

Key words: Abdominal pain, Dengue fever, Vomiting.

Received: 12 January, 2020 Accepted: 22 February, 2020

Corresponding author: Dr. Pradeep Shailat, Assistant Professor, Department of General medicine, Noida International Institute of Medical Sciences, Greater Noida, U.P., India

This article may be cited as: Singh A, Shailat P. Assessment of outcome of dengue fever in adult patients- A clinical study. J Adv Med Dent Scie Res 2020;8(3):147-150.

INTRODUCTION

Dengue is a self-limiting acute mosquito borne disease characterized by fever, headache, muscle and joint pains, rash, nausea and vomiting. It is caused by an arbovirus and spread by Aedes mosquitoes.[1] Some infections result in hemorrhagic manifestations and in its severe form is known as dengue shock or severe dengue, which can threaten the patient's life primarily through increased vascular permeability and hypotensive shock. Time and again dengue has given rise to pandemics all over the world.[2]

The revised WHO classification of 2009 categorizes dengue patients according to different levels of severity as dengue without warning signs, dengue with warning signs (abdominal pain, persistent vomiting, fluid accumulation, mucosal bleeding, lethargy, liver enlargement, increasing haematocrit with decreasing platelets) and severe dengue. Dengue fever is endemic in more than 100 countries with most cases reported from the Americas, South-East Asia and Western Pacific regions of WHO.[3]

Every year during the period of July-November there is an upsurge in the cases of dengue/dengue hemorrhagic fever (DHF).[4] Children are at higher risk of acquiring severe dengue. High dengue disease burden and frequent outbreaks result in a serious drain on country's economy and stress on the health systems. In India, case detection, case management, and vector control are the main strategies for prevention and control of dengue virus transmission. A new dengue vaccine is now available and several vaccines are in the process of development.[5] Information about dengue disease burden, its prevalence, incidence and geographic distribution is necessary in decisions on appropriate utilization of existing and emerging prevention and control strategies.[6]

The present study was conducted to assess outcome of dengue fever in adult patients.

MATERIALS & METHODS

The present study was conducted on 64 patients with dengue fever of both genders in the department of general Medicine. Ethical approval for the study was obtained before starting it. All patients were informed regarding the study and their consent was obtained. The patients were considered to have dengue fever if they presented with fever along with at least two of symptoms such as anorexia and nausea, rash, aches and pains, warning signs, leucopoenia, and positive tourniquet test.

Data such as name, age, gender etc. was recorded. Symptoms such as abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation (ascites, pleural effusion), mucosal bleed, lethargy, restlessness, liver enlargement >2 cm, increase in hematocrit with a rapid decrease in platelet count was recorded. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 64		
Gender	**Males**	**Females**
Number	26	38

Table I shows that out of 64 patients, males were 26 and females were 38.

Table II Assessment of parameters

Parameters	Males	Females	P value
Platelets (lakhs/cum)	0.65	0.64	0.14
AST (IU)	328.4	329.5	0.32
ALT (IU)	294.6	296.1	0.84
Albumin (g/L)	3.2	3.1	0.12
PT	24.5	25.7	0.25
aPTT	60.3	61.4	0.72
INR	2.48	2.54	0.13

Table II shows that mean platelet count in males was 0.65 lakhs/cumm and in females was 0.64 lakhs/cumm, AST was 328.4 IU in males and 329.5 IU in females, ALT was 294.6 IU in males and 296.1 IU in females, Albumin level was 3.2 g/L in males and 3.1 g/L in females, PT was 24.5 seconds in males and 25.7 seconds in females, aPTT was 60.3 seconds in males and 61.4 seconds in females and INR was 2.48 in males and 2.54 in females.

Table III Assessment of warning signs

Warning signs	Percentage
Fluid leakage (rising haematocrit, ascites, pleural effusion)	20.4%
Platelet count <1,00,000/cumm	70.6%
ALT/AST >3 times normal upper limit	52.3%
Persistent vomiting	30.7%

Table III, graph I shows that common warning signs fluid leakage (rising haematocrit, ascites, pleural effusion) was seen in 20.4%, platelet count <1,00,000/cumm in 70.6%, ALT/AST >3 times normal upper limit in 52.3% and persistent vomiting in 30.7%.

Graph I Assessment of warning signs

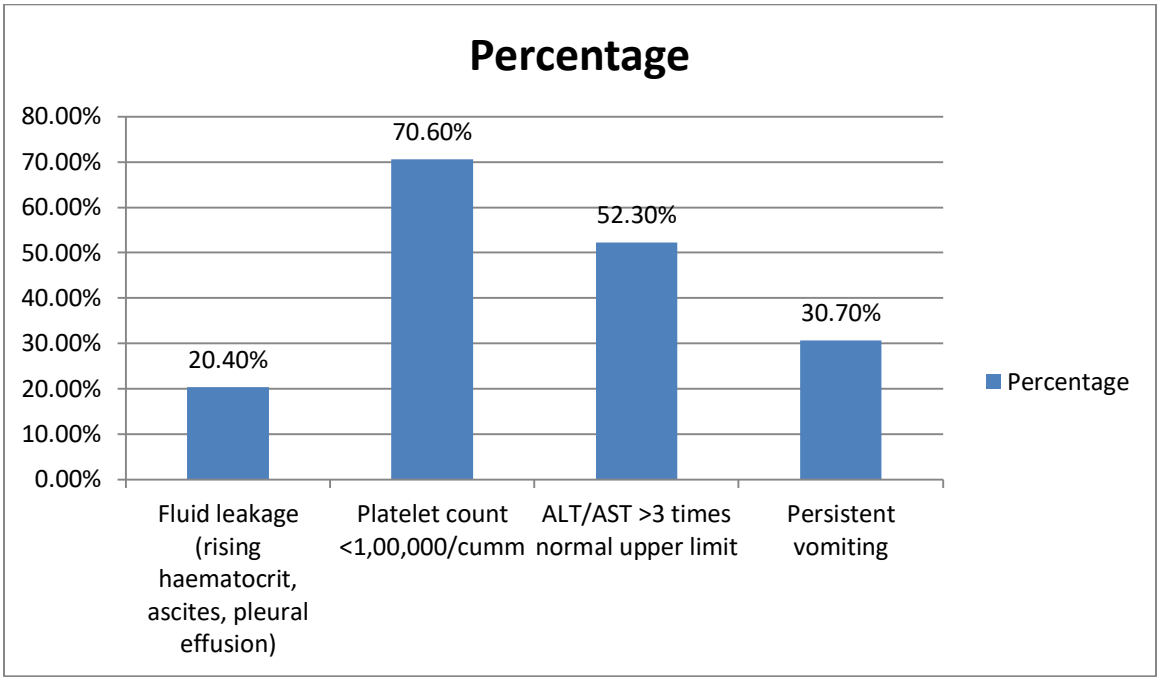

Table IV Management of cases

Treatment	Percentage	P value
Ringer lactate	41.2%	0.021
Ampicillin	15.6%	
Ceftriaxone	24%	
Isolyte P	38.5%	
Ceftriaxone + amikacin	8.4%	
Ceftriaxone + tazobactum + amikacin	1.2%	
Antiemetic drug (ondansetron)	42%	

Table III shows that management comprised of ringer lactate in 41.2%, Ampicillin in 15.6%, Ceftriaxone in 24%, Isolyte P in 38.5%, Ceftriaxone + amikacin in 8.4%, Ceftriaxone + tazobactum + amikacin in 1.2% and Antiemetic drug (ondansetron) in 42%. The difference was significant (P< 0.05).

DISCUSSION

According to WHO estimates, currently there are 50-100 million dengue cases around the world.[7] Dengue virus can lead to a spectrum of diseases ranging from sub-clinical infection to dengue fever and most severe forms like dengue hemorrhagic fever and dengue shock syndrome.[8] World Health Organization (WHO) has conferred it as a notifiable disease and since 2005 dengue is considered as a public health emergency of international concern. WHO statistics have also shown that dengue burden from children in South East Asian Region (SEAR) countries is increasing. The first evidence of occurrence of dengue fever in India was reported during 1956 from Vellore district in Tamil Nadu.[9] The present study was conducted to assess outcome of dengue fever in adult patients.

In present study, out of 64 patients, males were 26 and females were 38. Ghazala et al[10] a total of 110 patients diagnosed with dengue fever with one or more warning signs were admitted during the study period. Thirty percent cases had liver enzymes more than 3 times the normal and 68% patients had platelet count <1 lakh/cu.mm of blood. Two cases of dengue encephalitis were reported. Most common intravenous fluid given was ringer lactate followed by isolyte P and others. Most common antibiotic prescribed was ceftriaxone followed by ampicillin and others. The symptomatic treatment given consisted of paracetamol, anti-acidity drugs and antiemetic drugs. Vitamin K was prescribed to 41% and zinc and folic acid supplements were prescribed to 30% children. There was no correlation found between vitamin K and outcome of the disease.

We found that mean platelet count in males was 0.65 lakhs/cumm and in females was 0.64 lakhs/cumm, AST was 328.4 IU in males and 329.5 IU in females, ALT was 294.6 IU in males and 296.1 IU in females, Albumin level was 3.2 g/L in males and 3.1 g/L in females, PT was 24.5 seconds in males and 25.7 seconds in females, aPTT was 60.3 seconds in males and 61.4 seconds in females and INR was 2.48 in males and 2.54 in females. Ganesh kumar et al[11] found that of the 2285 identified articles on dengue, 180 reported prevalence of laboratory confirmed dengue infection, seven reported seroprevalence as evidenced by IgG or neutralizing antibodies against dengue and 77 reported case fatality. The overall estimate of the prevalence of laboratory confirmed dengue infection among clinically suspected patients was 38.3% (95% CI: 34.8%–41.8%). The pooled estimate of dengue seroprevalence in the general population and CFR among laboratory confirmed patients was 56.9% (95% CI: 37.5–74.4) and 2.6% (95% CI: 2–3.4) respectively. There was significant heterogeneity in reported outcomes (p-values<0.001).

We found that common warning signs fluid leakage (rising haematocrit, ascites, pleural effusion) was seen in 20.4%, platelet count <1,00,000/cumm in 70.6%, ALT/AST >3 times normal upper limit in 52.3% and persistent vomiting in 30.7%. We found that management comprised of ringer lactate in 41.2%, Ampicillin in 15.6%, Ceftriaxone in 24%, Isolyte P in 38.5%, Ceftriaxone + amikacin in 8.4%, Ceftriaxone + tazobactum + amikacin in 1.2% and Antiemetic drug (ondansetron) in 42%.

Saqib et al[12] found that of 556 cases studied, 390 (70%) were males. The mean age was 36 years and 30% of the cases were between 20-29 years. Average duration of the hospital stay was 6 days. Out of the total, 435 (78%) were dengue fever (DF) cases followed by dengue hemorrhagic fever (DHF) in 95 (17%) and dengue shock syndrome (DSS) in 26 (4%) cases. A total of 40 cases died and among them 17 were diagnosed with DSS, 13 DF and 10 DHF. Further the verbal autopsy from relatives of deceased cases showed 29 (60%) deceased had co-morbid diseases which included hypertension, diabetes etc. DSS was common in patients who had hypertension (27) either alone or associated with other illnesses.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that Dengue is usually a short lasting and self-limiting disease. severe infections can be lethal, especially if it is a secondary infection.

REFERENCES

1. Souza LJ, Alves JG, Nogueira RM, Gicovate Neto C, Bastos DA, Siqueira EW, et al. Aminotransferase changes and acute hepatitis in patients with dengue fever: analysis of 1,585 cases. Braz J Infect Dis. 2004;8(2):156-63.
2. Parkash O, Almas A, Jafri SM, Hamid S, Akhtar J, Alishah H. Severity of acute hepatitis and its outcome in patients with dengue fever in a tertiary care hospital Karachi, Pakistan (South Asia). BMC Gastroenterol. 2010;10:43.
3. Kanade T, Shah I. Dengue encephalopathy. J Vector Borne Dis. 2011;48(3):180-1. 10. Thangaratham PS, Jeevan MK, Rajendran R, Samuel PP, Tyagi BK. Dual infection by dengue virus and Plasmodium vivax in Alappuzha District, Kerala, India. Jpn J Infect Dis. 2006;59(3):211-2.
4. Bhalla A, Sharma N, Sharma A, Suri V. Concurrent infection with dengue and malaria. Indian J Med Sci. 2006;60(8):330-1.
5. Lee IK, Liu JW, Yang KD. Clinical characteristics and risk factors for concurrent bacteremia in adults with dengue hemorrhagic fever. Am J Trop Med Hyg. 2005;72(2):221-6.
6. Malavige GN, Velathanthiri VG, Wijewickrama ES, Fernando S, Jayaratne SD, Aaskov J, et al. Patterns of disease among adults hospitalized with dengue infections. QJM. 2006;99(5):299-305.
7. Bhaskar ME, Moorthy S, Kumar NS, Arthur P. Dengue haemorrhagic fever among adults – An observational study in Chennai, South India. Indian J Med Res. 2010;132:738-40.
8. Dung NM, Day NP, Tam DT, Loan HT, Chau HT, Minh LN, et al. Fluid replacement in dengue shock syndrome: a randomized, double-blind comparison of four intravenousfluid regimens. Clin Infect Dis. 1999;29(4):787-94.
9. Ngo NT, Cao XT, Kneen R, Wills B, Nguyen VM, Nguyen TQ, et al. Acute management of dengue shock syndrome: a randomized double-blind comparison of 4 intravenous fluid regimens in the first hour. Clin Infect Dis. 2001;32(2):204-13.
10. Ghazala Z, Anuradha HV, Shivamurthy MC. Pattern of management and outcome of dengue fever in pediatric in-patients in a tertiary care hospital: a prospective observational study. International Journal of Basic & Clinical Pharmacology. 2014;3(3):534-8.
11. Ganesh kumar P, Murhekar MV, Poornima V, Saravanakumar V, Sukumaran K, Anandaselvasankar A, John D, Mehendale SM. Dengue infection in India: A systematic review and meta-analysis. PLoS neglected tropical diseases. 2018 Jul 16;12(7):e0006618.
12. Saqib MA, Rafique I, Bashir S, Salam AA. A retrospective analysis of dengue fever case management and frequency of co-morbidities associated with deaths. BMC research notes. 2014 Dec;7(1):1-5.