

A Case Report on Management and Outcomes of Dengue Fever with Urinary Tract Infection

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ABSTRACT

Dengue fever is a serious tropical infection that can cause hemorrhagic symptoms. Concurrent dengue infection, on the other hand, is to be expected and is a fascinating condition in tropical medicine. The authors discuss an intriguing instance of dengue fever with a urinary tract infection that was discovered by chance. Urinary tract infections are quite prevalent, affecting one out of every five women at some point in their lives. UTIs are more frequent in women, although they can also affect men, the elderly, and children. Urinary tract infections affect one to two percent of youngsters. Urinary tract infections account for 8 million to 10 million doctor visits each year.

Patient specific information: -The patient is 32-year women admit in AVBRH. the chief complaint of high fever for 3 days, burning micturition, shivering, chills, lower abdominal pain. He was diagnosed as a Urinary tract infection with dengue fever.

Main symptoms or important clinical findings: My patient have a chief complaint of fever for 3 days, burning micturition, nausea vomiting, abdominal pain. The patient had undergone various investigation like careful history collection, physical examination, complete blood count, ultrasonography, CT scan etc.

Medical management: - Patient was treated with medications as order by doctors, such as antibiotics, antipyretic, analgesic etc. **Nursing management:** Administered fluid replacement like DNS, RL, blood transfusion, oral fluid etc. medications was prescribed by physician. Monitored all vital signs of patient 4 hourly.

Conclusion: A patient is 32-year women admit in AVBRH. the chief complaint of high fever for 3 days, burning micturition, shivering, chills, lower abdominal pain. He was diagnosed as a Urinary tract infection with dengue fever. After undergoing all investigation, she was diagnosed as dengue fever with Urinary tract infection.

Keywords: Dengue fever, urinary tract infection.

INTRODUCTION

Dengue fever is a feverish illness caused by infection with one of four dengue viruses (DENV) spread by mosquitoes *Aedes aegypti* or *Aedes albopictus* during a blood meal. Infections can be asymptomatic or show up in a number of ways, from a low fever to life-threatening shock syndrome. [1,2,3]

The earliest incidence of suspected dengue fever was documented in a Chinese medical encyclopaedia, which mentioned a "water poison" related with flying insects. From the 15th to the 19th century, the major vector spread out of Africa as a result of increased globalisation. Dengue fever was first reported in 1779 and 1780, when an outbreak affected Southeast Asia, Africa, and North America. Epidemics were rare from that time until 1940. [2,3]

Dengue fever became the second disease (after yellow fever) to be established to be caused by a virus when mosquito transmission was confirmed in 1906. Dengue transmission was better understood as a result of additional studies. [4,5]

Environmental disruption has been blamed for the rapid spread of dengue fever during and after the. The emergence of dengue haemorrhagic fever and the spread of other serotypes of the disease to other areas followed similar trends. This severe version of the disease was first documented in 1953, and by the 1970s, it had spread across the Pacific and the Americas, becoming a major cause of. In Central and South America, the first cases of dengue haemorrhagic fever and dengue shock syndrome were recorded in 1981, when DENV-2 was contracted by patients who had previously been infected with DENV-1 some years prior. [6]

Dengue fever is spread by female mosquitos, the most common of which is the. There are five serotypes of the virus, each of which confers lifetime immunity to that kind but only temporary immunity to the others. The chance of severe complications increases after a particular sort of infection. To confirm the diagnosis, a variety of tests are available, including detecting the virus or its components. [7,8,9]

In a number of countries, A has been approved and is commercially available. The vaccination is only advised for persons who have already been infected or for groups with a high rate of past infection by the age of nine as of 2018. Mosquito bites can also be avoided by minimising mosquito habitat and limiting bite exposure. This can be performed by removing or covering standing water and wearing clothing that covers a significant portion of the body. For mild to moderate cases of acute dengue fever, supportive treatment involves providing fluids by mouth or intravenously. In more serious circumstances, it may be necessary. For and in dengue fever, (acetaminophen) is preferred over (NSAIDs) due to the higher risk of bleeding. [10,11]

Patient Information

Patient specific information: The patient is 32-year women admit in AVBRH with the chief complaint of high fever for 3 days, burning micturition, shivering, chills, lower abdominal pain. He was diagnosed as a dengue fever with Urinary tract infection.

Primary concerns and symptoms of the patient: - My patient have a chief complaint of fever for 3 days burning micturition, Nausea vomiting, abdominal pain. The patient had undergone various investigation like careful history collection, physical examination, complete blood count, ultrasonography, CT scan Etc.

Medical family and psychosocial history: - Patient suffering from dengue fever with urinary tract infection for 3 days. In family history she is belong to nuclear family. his monthly family income is 50,000. In this family there is no any medical problems like Hypertension, Diabetes Mellitus, asthma etc. There are no hereditary or genetic disorders in family.

He was mentally stable. He is oriented to date time and place and he is Maintain good relationship with family member.

Relevant past intervention with outcome: My patient there is no any past history like diabetes mellitus, hypertension etc.

Clinical findings:

Physical Examination: -

State Of Health– unhealthy, body build – thin, Height -152cm, weight - 55kg, vital sign: Temperature is 104°C, Pulse -88 beats per minute, Respiration: - 18 breath per minute, Blood pressure -140/90 mmHg

In my case report we examine the patient head to foot. The patient has poor perfusion, the skin may be cold and clammy, erythema on face, rash petechiae may be present. abdominal pain or tenderness may be present, liver enlargement <2 cm. pedal edema or fluid accumulation also monitored. In clinical investigation hemoglobin 8.5gm %, Red blood cell 3,40000, white blood cell count is 5.3000, platelets 86,000, NS1 Antigen test is positive, dengue IgM antibody test is positive. the MAC –ELISA test is used for the qualitative detection of dengue virus IgM antibodies.

Timeline: My patient admitted in AVBRH with chief complaints of fever for 3 days, nausea, vomiting, rash present. A Symptoms of dengue typically last 2–7 days. Most people will recover after about a week. But my patient condition was improved.

Diagnostic assessment: On the basis of patient careful history collection, physical examination and all investigation like complete blood count, Routine test, random blood sugar, renal function test, hemogram, urine routine, ultrasound, CT scan, MRI (if needed) were all performed. my patient had a no any past history of hypertension, diabetes mellitus etc. **Therapeutic investigation:** - Medical management was provide to the patient antibiotics, analgesics, antipyretic was given by patient such as acetaminophen, paracetamol. He was looking all treatment and outcome was good. he is sign and symptoms was reduced. No any change in therapeutic interventions.

FollowUp and Outcomes: Antibiotic ceftriaxone 2g once daily for 14 days, route intravenous and Fluconazole 200 mg per oral antifungal medications were given to the patient daily for 13day. Intravenous fluids 0.9 percent normal saline should be given, antipyretics medicine such as paracetamol, and antiemetic were used to treat his symptoms. after treatment her condition was improved. Then after three weeks patient going to home because her fever was reduced, bilateral hand and foot edema had subsided, and the sub conjunctival hemorrhage had

resolved by the time she was discharged, but he still complained of pain while walking and lower limb weakness. Her leg pain and weakness had improved by the time he returned to the clinic for the first time.

Nursing perspectives: Administered fluid replacement like DNS, RL, blood transfusion, oral fluid etc. medications were prescribed by physician. Monitored all vital signs of patient 4 hourly.

Monitor & record intake output chart, record & report are maintained.

Discussion:

DF is a tropical ailment spread by mosquitos, with an increasing number of cases each year. In the 1950s, the World Health Organization (WHO) received roughly 900 cases each year from 10 different nations. DF has been more common over time, with approximately 0.5 million cases recorded in 2000 and 3.3 million cases reported in 2015. Over 390 million people are believed to be affected by DF each year, with 96 million displaying clinical symptoms of varying severity. [12,13,14]

The 18 patients with suspected concomitant UTI were all admitted to private hospitals. In 7 (38.9%) of the cases, positive nitrite and leukocyte esterase on dipstick tests were found, and in 11 (61.1%) of the cases, leukocyturia alone was found. Cefotaxime was administered in six (33.3%) cases, cefixime in five (27.8%), and Ceftriaxone was given in four cases.

As a result, only DVI patients without recurrent shock underwent a detailed medical record review to assess the reasons and antibiotic selection. As an academic institution, the teaching hospital had a more cautious approach to determining the diagnosis of a suspected concomitant bacterial illness. This regulation will reduce the use of antibiotics that aren't needed. [15,16,17]

A small but clinically significant number of dengue-infected patients brought to the hospital also had bacterial coinfection, according to our data. [18]

In the derivation cohort, the DDIS we designed and validated had an AUC of 0.793, and in the validation cohort, it had an AUC of 0.761. Bacterial coinfections were found in only around 5% of DDIS 1 patients, whereas they were found in over 95% of DDIS 4 patients. As a result, patients who are unlikely to require empirical antibiotics can be identified, as well as those who will benefit the most from early therapy. [16]

When compared to dengue without concomitant bacterial infections, which our patient group and others have shown, dengue dual infections are associated with high mortality and morbidity. In a recent study, 7 (7%) of 100 patients with dengue hemorrhagic fever or dengue shock syndrome had concurrent bacteremia. In contrast, 25 (1.2%) of our patients with laboratory-confirmed dengue had concurrent bacteremia, and 83 (4.0 percent) of our patients had contemporaneous bacteremia, which matches the 3.6 percent bacterial infection rate seen in 606 adult dengue patients in another study. As others have shown, the majority of bacteremia isolates were gram-negative. The failure of the intestinal mucosal barrier is assumed to be the source of primary gram-negative bacteremia in severe dengue infections. We also discovered a number of ailments listed in case reports, including cellulitis and cholecystitis (with possible secondary infection). However, the possibility that bacterial infection raises the chance of acquiring dengue fever cannot be ruled out. [17]

Conclusion: A patient is 32-year women admit in AVBRH with the chief complaints of high fever for 3 days, burning micturition, shivering, chills, lower abdominal pain. He was diagnosed as a Urinary tract infection with dengue fever. After undergoing all Investigation, she was diagnosed as dengue fever with Urinary tract infection. [19]

Reference:

1. Carrington LB, Simmons CP. Human to mosquito transmission of dengue viruses. *Frontiers in immunology*. 2014 Jun 17; 5:290.
2. Heilman JM, De Wolff J, Beards GM, Basden BJ. Dengue fever: a Wikipedia clinical review. *Open medicine*. 2014;8(4): e105.
3. Bhattacharya MK, Maitra S, Ganguly A, Bhattacharya A, Sinha A. Dengue: a growing menace--a snapshot of recent facts, figures & remedies. *International journal of biomedical science: IJBS*. 2013 Jun;9(2):61.
4. Guzman MG, Kouri G. Dengue and dengue hemorrhagic fever in the Americas: lessons and challenges. *Journal of Clinical Virology*. 2003 May 1;27(1):1-3.
5. Singh K, Zeeshan M, Ansari VA, Ahmad Z, Bagga P, Shakya P. Prevention and control of dengue by herbal remedies. *Journal of Chemical and Pharmaceutical Research*. 2016;8(3):708-13.
6. Luo R, Fongwen N, Kelly-Cirino C, Harris E, Wilder-Smith A, Peeling RW. Rapid diagnostic tests for determining dengue serostatus: a systematic review and key informant interviews. *Clinical Microbiology and Infection*. 2019 Jun 1;25(6):659-66.
7. Reiter P. Climate change and mosquito-borne disease. *Environmental health perspectives*. 2001 Mar;109(suppl 1):141-61.
8. Adrizain R, Setiabudi D, Chairulfatah A. The inappropriate use of antibiotics in hospitalized dengue virus-infected children with presumed concurrent bacterial infection in teaching and private hospitals in Bandung, Indonesia. *PLoS neglected tropical diseases*. 2019 Jun 21;13(6):e0007438.

9. Adrizain R, Setiabudi D, Chairulfatah A. The inappropriate use of antibiotics in hospitalized dengue virus-infected children with presumed concurrent bacterial infection in teaching and private hospitals in Bandung, Indonesia. *PLoS neglected tropical diseases*. 2019 Jun 21;13(6):e0007438.
10. Marques RE, Guabiraba R, Cisalpino D, Teixeira MM, Souza DG. Dengue. In *Colloquium Series on Integrated Systems Physiology: From Molecule to Function to Disease 2014 Feb 21* (Vol. 6, No. 1, pp. 1-104). Morgan & Claypool Life Sciences.
11. Bhokardankar, Prashant S., and Bharat Rathir. "Indigenous Wisdom of Ayurvedic Drugs to Treat Urinary Tract Infections." *INTERNATIONAL JOURNAL OF AYURVEDIC MEDICINE* 11, no. 3 (September 2020): 370–77.
12. Wadekar, Abhijit, Yash Gupte, ParthGodhiwala, Swapnil Lahole, Sachin Agrawal, and Sunil Kumar. "Emphysematous Cystitis an Unusual Case of Urinary Tract Infection in Long Standing Rheumatoid Arthritis: A Case Report." *MEDICAL SCIENCE* 24, no. 105 (October 2020): 2993–96.
13. Bhayani, P., Rawekar, R., Bawankule, S., Kumar, S., Acharya, S., Gaidhane, A., Khatib, M., 2019. Profile of urinary tract infection in a rural tertiary care hospital: Two-year cross-sectional study. *Journal of Datta Meghe Institute of Medical Sciences University* 14, 22–26. https://doi.org/10.4103/jdmimsu.jdmimsu_87_18
14. Chandi, D.H., Bankar, N., Ambad, R.S., Singh, B.R., 2020b. Urinary tract infection by esherichia coli in patients attending tertiary care hospital of central India. *Journal of Critical Reviews* 7, 1089–1092. <https://doi.org/10.31838/jcr.07.08.228>
15. Abbafati, Cristiana, Kaja M. Abbas, Mohammad Abbasi, Mitra Abbasifard, Mohsen Abbasi-Kangevari, HedayatAbbastabar, Foad Abd-Allah, et al. "Five Insights from the Global Burden of Disease Study 2019." *LANCET* 396, no. 10258 (October 17, 2020): 1135–59.
16. Abbafati, Cristiana, Kaja M. Abbas, Mohammad Abbasi, Mitra Abbasifard, Mohsen Abbasi-Kangevari, HedayatAbbastabar, Foad Abd-Allah, et al. "Global Burden of 369 Diseases and Injuries in 204 Countries and Territories, 1990-2019: A Systematic Analysis for the Global Burden of Disease Study 2019." *LANCET* 396, no. 10258 (October 17, 2020): 1204–22.
17. Franklin, Richard Charles, Amy E. Peden, Erin B. Hamilton, Catherine Bisignano, Chris D. Castle, Zachary Dingels V, Simon Hay I, et al. "The Burden of Unintentional Drowning: Global, Regional and National Estimates of Mortality from the Global Burden of Disease 2017 Study." *INJURY PREVENTION* 26, no. SUPP_1, 1 (October 2020): 83–95. <https://doi.org/10.1136/injuryprev-2019-043484>.
18. James, Spencer L., Chris D. Castle, Zachary Dingels V, Jack T. Fox, Erin B. Hamilton, Zichen Liu, Nicholas L. S. Roberts, et al. "Estimating Global Injuries Morbidity and Mortality: Methods and Data Used in the Global Burden of Disease 2017 Study." *INJURY PREVENTION* 26, no. SUPP_1, 1 (October 2020): 125–53. <https://doi.org/10.1136/injuryprev-2019-043531>.
19. James, Spencer L., Chris D. Castle, Zachary Dingels V, Jack T. Fox, Erin B. Hamilton, Zichen Liu, Nicholas L. S. Roberts, et al. "Global Injury Morbidity and Mortality from 1990 to 2017: Results from the Global Burden of Disease Study 2017." *INJURY PREVENTION* 26, no. SUPP_1, 1 (October 2020): 96–114. <https://doi.org/10.1136/injuryprev-2019-043494>.