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Research Article

Acute Kidney Injury In Dengue Fever, One Year Hospital Based Cross Sectional Study.

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INTRODUCTION

Arboviruses pose a significant public health challenge, particularly in tropical and subtropical regions, where they contribute to frequent epidemics with substantial economic and social impacts. Among them, the dengue virus (DENV), transmitted by Aedes mosquitoes, is the most prevalent arthropod-borne viral infection in humans. Dengue fever (DF) has a vast global footprint, with an estimated 2.5 billion people at risk, and outbreaks reported in over 100 countries, primarily in Southeast Asia, the Pacific, and the Americas. While traditionally considered an urban disease, dengue is increasingly affecting rural populations, particularly in Africa and the eastern Mediterranean.

Dengue infection presents with a wide spectrum of clinical manifestations, ranging from mild febrile illness to severe dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS), which contribute to significant morbidity and mortality. The disease burden has escalated over the years due to increasing globalization, trade, and travel, leading to the introduction of virulent strains into new regions. Despite preventive measures, dengue remains endemic in many countries, including India, where seasonal outbreaks occur annually, particularly during the monsoon season.

In recent years, atypical manifestations of dengue, including neurological, hepatic, and renal complications, have been increasingly recognized. Among these, acute kidney injury (AKI) is a relatively underreported but potentially serious complication. Dengue-related renal involvement may present as AKI, proteinuria, glomerulonephritis, or hemolytic uremic syndrome, necessitating early recognition and intervention. However, data on dengue-associated AKI remain scarce, with only a few case reports and studies available in the literature.

Given the recurrent epidemics of dengue and the limited understanding of its renal complications, this study aims to estimate the prevalence of AKI in dengue fever. Identifying such complications is crucial for improving early diagnosis, optimizing patient management, and reducing disease-related morbidity and mortality.

OBJECTIVES

The objectives of this study were

- To study the prevalence of acute kidney injury in dengue fever.
- To study the predictors of development of acute kidney injury in dengue fever.

METHODOLOGY

Study Design and Setting

This is a prospective observational study conducted at [Institution/Hospital Name], a tertiary care center in [Location], over a period of [Duration]. The study was designed to estimate the prevalence of acute kidney injury (AKI) in patients diagnosed with dengue fever (DF).

Study Population

Patients presenting with clinical features of dengue fever and confirmed by laboratory testing were included in the study. The inclusion and exclusion criteria were as follows:

Inclusion Criteria

1. Patients aged ≥[Age] years diagnosed with dengue fever based on clinical and serological confirmation (NS1 antigen or dengue IgM/IgG ELISA).
2. Patients with or without complications of dengue fever, including dengue hemorrhagic fever (DHF) and dengue

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shock syndrome (DSS).

Exclusion Criteria

1. Patients with pre-existing chronic kidney disease (CKD).
2. Patients with other concurrent infections or conditions known to cause AKI (e.g., sepsis, leptospirosis, malaria).
3. Patients on nephrotoxic drugs before hospitalization.

Data Collection

A structured proforma was used to collect patient demographics, clinical symptoms, laboratory parameters, and outcomes. The following data were recorded:

Demographic details

Age, sex, comorbidities.

Clinical features

Fever, rash, bleeding tendencies, hypotension, oliguria, neurological symptoms.

Laboratory investigations

- Complete blood count (CBC)
- Platelet count
- Hematocrit
- Liver function tests (LFTs)
- Renal function tests (RFTs) (serum creatinine, blood urea nitrogen)
- Serum electrolytes
- Dengue serology (NS1 antigen, IgM, IgG ELISA)
- Urine analysis (proteinuria, hematuria)
- Imaging (ultrasound for renal involvement if clinically indicated)

Definition of Acute Kidney Injury (AKI)

AKI was defined based on the ***Kidney Disease: Improving Global Outcomes (KDIGO) criteria*** as follows

1. Increase in serum creatinine by ≥0.3 mg/dL within 48 hours.
2. Increase in serum creatinine to ≥1.5 times the baseline within 7 days.
3. Urine output <0.5 mL/kg/h for more than 6 hours.

Patients were categorized into different AKI stages according to the severity of renal involvement.

Statistical Analysis

Data were analyzed using **[Statistical Software, e.g., SPSS version X or STATA]**. Continuous variables were expressed as mean ± standard deviation (SD) or median (interquartile range, IQR) depending on the distribution. Categorical variables were presented as frequencies and percentages. Chi-square or Fisher's exact test was used for categorical data, while Student's t-test or Mann–Whitney U test was used for continuous data. A **p-value <0.05** was considered statistically significant.

Ethical Considerations

The study was approved by the Institutional Ethics Committee of [Institution Name] (Approval No: [Reference No.]). Informed consent was obtained from all participants before enrollment. Confidentiality of patient data was maintained throughout the study.

This methodology provides a clear and structured approach to the study while ensuring scientific rigor and ethical compliance. Let me know if you need any modifications or additions!

In the present study 7.18% of the males developed AKI compared to 1.53% of the females and the difference observed was statistically significant (p=0.016).

In this study significantly higher number of patients who were aged between 61 to 70 years (52.94%) and 71 to 80 years (50%) developed AKI (p<0.001).

In the present study AKI was diagnosed in all the (100%) patients with DSS compared to DHF (4.76%) and DF (4.5%). The difference observed was statistically significant (p<0.001).

In the present study significant association was found between serum creatinine at admission and AKI (p<0.001).

In the present study 9.02% of the patients with platelet count < 20,000 /cumm developed AKI compared to other counterparts (p=0.026).

In this study positive association was found between AKI and blood urea at admission (p<0.001).

In the present study no association was found between serositis and AKI (p=0.097).

In this study significantly higher of patients with hypotension (28.57% vs 5.49% developed AKI (p<0.001).

In this study significantly higher mortality was noted in patients with AKI (100% vs 0%; p<0.001).

RESULTS

Table 1. Distribution of patients according to the AKI

AKI	Distribution (n=535)	
	Number	Percentage
Present	31	5.79
Absent	504	94.21
Total	**535**	**100.00**

In the present study 7.18% of the males developed AKI compared to 1.53% of the females and the difference observed was statistically significant (p=0.016).

Figure 1. In this study 5.79% of the patients developed AKI.

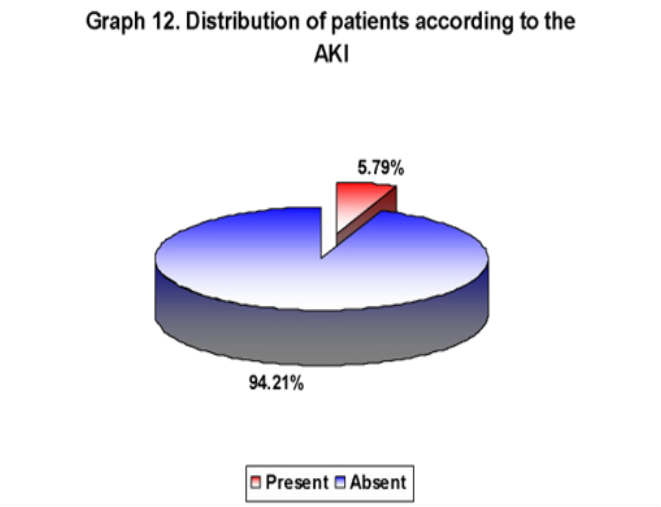

Table 2. Association of AKI with sex.

	AKI					
Sex	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Male	375	92.82	29	7.18	404	100.00
Femle	129	98.47	2	1.53	131	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p = 0.016

In the present study 7.18% of the males developed AKI compared to 1.53% of the females and the difference observed was statistically significant (p=0.016).

Table 3. Association of AKI with age.

	AKI					
Age group (Years)	**Absent**		**Present**		**Present**	
	No	**%**	**No**	**%**	**No**	**%**
18 to 30	309	97.48	8	2.52	317	100.00
31 to 40	112	94.92	6	5.08	118	100.00
41 to 50	44	88.00	6	12.00	50	100.00
51 to 60	29	96.67	1	3.33	30	100.00
61 to 70	8	47.06	9	52.94	17	100.00
71 to 80	1	50.00	1	50.00	2	100.00
81 to 90	1	100.00	0	0.00	1	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001

In this study significantly higher number of patients who were aged between 61 to 70 years (52.94%) and 71 to 80 years (50%) developed AKI (p<0.001).

Table 4. Association of AKI with severity of dengue fever.

Severity of dengue fever	AKI					
	Absent		Present		Total	
	No.	%	No.	%	No.	%
Dengue fever	424	95.50	20	4.50	444	100.00
Dengue haemorrhagic fever	80	95.24	4	4.76	84	100.00
Dengue shock syndrome	0	0.00	7	100.00	7	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

$p < 0.001$

In the present study AKI was diagnosed in all the (100%) patients with DSS compared to DHF (4.76%) and DF (4.5%). The difference observed was statistically significant ($p<0.001$).

Table 5. Association of AKI with serum creatinine at admission.

Serum creatinine (mg/dL)	AKI					
	Absent		Present		Total	
	No.	%	No.	%	No.	%
< 0.7	95	97.94	2	2.06	97	100.00
0.7 to 1.20	56	70.89	23	29.11	79	100.00
> 1.20	353	98.33	6	1.67	359	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

$p < 0.001$

In the present study significant association was found between serum creatinine at admission and AKI ($p<0.001$).

Table 6. Association of AKI with platelet count at admission.

Platelet count (x 103 /cumm)	AKI					
	Absent		Present		Total	
	No.	%	No.	%	No.	%
<20	121	90.98	12	9.02	133	100.00
20 to 49	173	97.74	4	2.26	177	100.00
50 to 99	108	90.76	11	9.24	119	100.00
100 to 150	68	97.14	2	2.86	70	100.00
>150	34	94.44	2	5.56	36	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

$p = 0.026$

In the present study 9.02% of the patients with platelet count < 20,000 /cumm developed AKI compared to other counterparts ($p=0.026$).

Table 7. Association of AKI with blood urea at admission.

Blood urea (mg/dL)	AKI					
	Absent		Present		Total	
	No.	%	No.	%	No.	%
<17	163	99.39	1	0.61	164	100.00
17 to 49	15	45.45	18	54.55	33	100.00
> 49	326	96.45	12	3.55	338	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study positive association was found between AKI and blood urea at admission (p<0.001).

Table 8. Association of AKI with serositis.

	AKI					
Serositis	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Present	245	92.45	20	7.55	265	100.00
Absent	259	95.93	11	4.07	270	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p = 0.097
In the present study no association was found between serositis and AKI (p=0.097).

Table 9. Association of AKI with hypotension.

	AKI					
Hypotension	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Present	5	71.43	2	28.57	7	100.00
Absent	499	94.51	29	5.49	528	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study significantly higher of patients with hypotension (28.57% vs 5.49% developed AKI (p<0.001).

Table 10. Association of AKI with mortality.

	AKI					
Mortality	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Survivor	504	95.09	26	4.91	530	100.00
Non survivor	0	0.00	5	100.00	5	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study significantly higher mortality was noted in patients with AKI (100% vs 0%; p<0.001).

DISCUSSION

Dengue infection presents with a wide clinical spectrum, ranging from asymptomatic cases and undifferentiated febrile illness to severe forms such as dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). While classical dengue fever is characterized by biphasic fever, myalgia, retro-orbital pain, rash, leukopenia, and thrombocytopenia, severe cases may lead to hemorrhagic manifestations, multi-organ dysfunction, and fatal outcomes. As dengue continues to emerge globally, atypical presentations and complications such as acute kidney injury (AKI) are increasingly recognized but may be underreported due to a lack of awareness.

Demographic and Clinical Characteristics

In our study, males were more commonly affected than females (male-to-female ratio: 3.08:1), consistent with previous studies by Sharma et al. (1998) and Agarwal et al. (2010). The most affected age group was 18–30 years (59.25%), with a mean age of 31.52 years, aligning with findings from AIIMS, Mexico, and other studies. Fever was the universal symptom (100%), followed by myalgia (69.91%), vomiting (67.66%), and nausea (66.92%). Petechiae (25.23%) and retro-orbital pain (18.32%) were also noted. Compared to previous studies, our findings on oliguria were noteworthy, suggesting a possible renal involvement even in early dengue infection.

Imaging Findings

Pleural effusion and acute respiratory distress syndrome (ARDS) were noted in 0.93% and 0.53% of patients, respectively, which was lower than the incidence reported by Kumar et al. (2010). Ultrasound findings revealed ascites (47.66%) and gallbladder thickening (40.19%), consistent with prior studies. The gallbladder thickening may be attributed to increased vascular permeability and plasma leakage, a hallmark of severe dengue.

Laboratory Parameters and Disease Severity

Thrombocytopenia was present in 57.9% of patients at admission, with platelet counts improving over time. Elevated transaminases (SGOT: 92.34%, SGPT: 82.06%) were observed, reflecting hepatic involvement, as seen in previous studies from Delhi and AIIMS. Most patients (82.99%) had classical dengue fever, while 15.7% had DHF, and 1.31% had DSS.

Acute Kidney Injury and Predictors

The prevalence of AKI in our cohort was 5.79%, comparable to studies by Mehra et al. (2012) and Khalil et al. (2012) but lower than studies from Malaysia and India reporting rates as high as 15.8%. The variation may be attributed to differences in study design, diagnostic criteria, and population characteristics.

Several factors were significantly associated with AKI:

Male gender

(7.18% vs. 1.53%, p=0.016), aligning with previous findings by Khalil et al. (2012) and Mallhi et al. (2015).

Age

>60 years had the highest prevalence (52.94%), suggesting older adults are at greater risk, consistent with Lee et al. (2009).

Severity of dengue

AKI was present in 100% of DSS cases, reinforcing its strong association with severe dengue (p<0.001).

Pathophysiologically, AKI in dengue may result from capillary leakage, hypotension, rhabdomyolysis, direct viral nephropathy, or immune-mediated injury. Dengue-associated AKI is often pre-renal due to plasma leakage and shock, as highlighted by Hommel et al.

Management, Complications, and Outcomes

Platelet transfusion was required in 48.97% of patients, correlating with significant thrombocytopenia. Other complications included serositis (49.53%), hepatitis (1.5%), and MODS (0.93%). Despite these complications, the majority (99.07%) recovered, with a low mortality rate of 0.93%.

Table 11. Association of AKI with serum creatinine at admission.

AKI						
Serum creatinine (mg/dL)	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
< 0.7	95	97.94	2	2.06	97	100.00
0.7 to 1.20	56	70.89	23	29.11	79	100.00
> 1.20	353	98.33	6	1.67	359	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001

In the present study significant association was found between serum creatinine at admission and AKI (p<0.001).

Table 12. Association of AKI with platelet count at admission.

AKI						
Platelet count (x 103 /cumm)	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
<20	121	90.98	12	9.02	133	100.00
20 to 49	173	97.74	4	2.26	177	100.00
50 to 99	108	90.76	11	9.24	119	100.00
100 to 150	68	97.14	2	2.86	70	100.00
>150	34	94.44	2	5.56	36	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p = 0.026
In the present study 9.02% of the patients with platelet count < 20,000 /cumm developed AKI compared to other counterparts (p=0.026).

Table 13. Association of AKI with blood urea at admission.

AKI						
Blood urea (mg/dL)	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
<17	163	99.39	1	0.61	164	100.00
17 to 49	15	45.45	18	54.55	33	100.00
> 49	326	96.45	12	3.55	338	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study positive association was found between AKI and blood urea at admission (p<0.001).

Table 14. Association of AKI with serositis.

AKI						
Serositis	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Present	245	92.45	20	7.55	265	100.00
Absent	259	95.93	11	4.07	270	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p = 0.097
In the present study no association was found between serositis and AKI (p=0.097).

Table 15. Association of AKI with hypotension.

AKI						
Hypotension	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Present	5	71.43	2	28.57	7	100.00
Absent	499	94.51	29	5.49	528	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study significantly higher of patients with hypotension (28.57% vs 5.49% developed AKI (p<0.001).

Table 16. Association of AKI with mortality.

AKI						
Mortality	**Absent**		**Present**		**Total**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Survivor	504	95.09	26	4.91	530	100.00
Non survivor	0	0.00	5	100.00	5	100.00
Total	**504**	**94.21**	**31**	**5.79**	**535**	**100.00**

p < 0.001
In this study significantly higher mortality was noted in patients with AKI (100% vs 0%; p<0.001).

Table 17. Comparison of clinical and laboratory characteristics in patients with and without AKI.

AKI					
Variables	**Present (=31)**		**Absent (n=504)**		**p value**
	Mean	SD	Mean	SD	
Age (Years)	45.20	17.63	30.69	11.63	**<0.001**
PR (bpm)	97.07	18.45	86.01	13.64	**0.004**
Systolic BP (mm Hg)	109.50	16.50	111.92	10.99	0.449
Diastolic BP (mm Hg)	73.79	11.92	77.03	7.31	0.165
RR (/minute)	23.13	6.72	18.18	2.17	**<0.001**
Temperature (0C)	96.46	11.06	99.12	0.93	0.198
Hb (mg/dL)	13.72	3.17	14.58	2.10	0.160
PCV (%)	39.97	7.33	42.05	6.10	0.137
Total count cells (/cumm)	9480.00	6545.09	5855.74	4613.55	**0.005**
Neutrophil (%)	68.93	17.35	55.11	17.27	**<0.001**
Lymphocyte (%)	24.93	16.11	35.55	17.22	**0.001**
Monocyte (%)	5.20	3.10	7.19	3.07	**0.002**
Eosinophils (%)	2.33	4.04	5.33	5.35	0.331
Platelet count on day 1 (x103)	58.17	51.54	59.41	54.12	0.901
PT/INR (sec)	1.39	0.59	1.11	0.29	**0.018**
aPTT (sec)	1.53	0.48	1.30	0.41	**0.032**
Blood urea (mg/dL)	60.33	34.18	22.54	10.88	**<0.001**
Serum creatinine Day 1 (mg/dL)	2.15	1.20	0.90	0.27	**<0.001**
Sodium (mmol/L)	135.63	4.44	135.99	4.18	0.672
Potassium (mmol/L)	4.39	0.93	4.25	0.53	0.423
Bicarbonate (mmol/L)	18.93	4.13	21.84	3.39	**0.001**
Total bilirubin (mg/dL)	3.00	3.03	0.88	0.97	**0.001**
Direct biliruibin (mg/dL)	2.32	2.66	0.49	0.80	**0.001**
SGOT (IU/L)	1053.53	2138.23	211.78	383.76	**0.040**
SGPT (IU/L)	440.17	796.96	123.00	198.75	**0.038**
Serum albumin (mg/dL)	3.16	0.50	3.71	0.48	**<0.001**
Alkaline phosphatase (mg/dL)	208.50	234.24	107.45	87.22	**0.025**
RBS (mg/dL)	130.20	61.34	127.24	56.11	0.798
Hospital stay (Days)	6.60	5.65	5.60	2.32	0.341

In the present study significant association was found between serum creatinine at admission and AKI (p<0.001).
In the present study 9.02% of the patients with platelet count < 20,000 /cumm developed AKI compared to other counterparts (p=0.026).
In this study positive association was found between AKI and blood urea at admission (p<0.001).
In the present study no association was found between serositis and AKI (p=0.097).
In this study significantly higher of patients with hypotension (28.57% vs 5.49% developed AKI (p<0.001).
In this study significantly higher mortality was noted in patients with AKI (100% vs 0%; p<0.001).
In the present study significant differences were noted in patients with and without AKI pertaining to age (45.20±17.63 vs 30.69±11.63 years; p<0.001), pulse rate (97.07±18.45 vs 86.01±13.64 per minute; p=0.004), respiratory rate (23.13±6.72 vs 18.18±2.17 per minute; p<0.001), total count (9480.00±6545.09 vs 5855.74±4613.55 per cumm; p=0.005), neutrophils

(68.93±17.35 vs 55.11±17.27 percent; p<0.001), lymphocyte (24.93±16.11 vs 35.55±17.22 percent; p=0.001), monocyte (5.20±3.10 vs 7.19±3.07 percent; p=0.002), International normalized ratio (1.39±0.59 vs 1.11±0.29; p=0.018), aPTT (1.53±0.48 vs 1.30±0.41; p=0.032), blood urea (60.33±34.18 vs 22.54±10.88 mg/dL; p<0.001), Serum creatinine on day one (2.15± 1.20 vs 0.90±0.27 mg/dL; p<0.001), bicarbonate (18.93±4.13 vs 21.84±3.39 mmol/L; p=0.001), total bilirubin (3.00±3.03 vs 0.88±0.97 mg/dL; p=0.001), direct bilirubin (2.32± 2.66 vs 0.49±0.80 mg/dL; p=0.001), SGOT (1053.53±2138.23 vs 211.78±383.76 IU/L; p=0.040), SGPT (440.17±796.96 vs 123.00±198.75 IU/L; p=0.038), serum albumin (3.16±0.5 vs 3.71±0.47 mg/dL; p<0.001) and alkaline phosphatase (208.50±234.24 vs 107.45±87.22mg/dL; p=0.025).

CONCLUSION

Based on the findings of this study it may be concluded that, there is high prevalence of AKI (5.79%) in patients presenting with dengue fever in the study area hence it cannot be neglected.

The significant predictors of AKI in patients with DF are male gender, advanced age, Hypotension, high serum creatinine and blood urea levels at the time of admission and lower platelet count at admission., evidence of polyserositis, other complications. Laboratory parameters including raised total count, International normalized ratio, a PTT, abnormal liver function tests at admission are also associated with risk developing AKI in patients with DF. Persons with DHF and DSS had more evidence of AKI compared to Dengue fever. The person who developed AKI had a more mortality.

SUMMARY

Renal complications in dengue fever remain an underexplored aspect, with manifestations ranging from mild urinary abnormalities to severe acute kidney injury (AKI). This study aimed to evaluate the prevalence of AKI in dengue fever and identify predictors for its development.

A one-year hospital-based cross-sectional study was conducted at the Department of General Medicine, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi, from January to December 2017. Of the 610 adult patients who tested positive for dengue NS1/IgM, 535 met the inclusion criteria. AKI was diagnosed using AKIN criteria, and potential risk factors were analyzed.

Key findings include

- The majority of patients were male (75.51%), with a male-to-female ratio of 3.08:1. The mean age was 31.52 ± 12.47 years.
- Fever was a universal symptom (100%), followed by myalgia (69.91%), vomiting (67.66%), and nausea (66.92%). Skin manifestations included rashes (31.79%) and petechial hemorrhages (25.23%).
- Laboratory findings revealed elevated SGOT (92.34%) and SGPT (82.06%). Proteinuria was observed in 21.31% of patients, while hematuria was rare (0.56%).
- Radiological findings showed thickened gallbladder (40.19%), ascites (47.66%), and splenomegaly (6.36%).
- Platelet transfusion was required in 48.97% of cases.
- Disease severity distribution: dengue fever (82.99%), dengue hemorrhagic fever (15.7%), and dengue shock syndrome (1.31%).
- AKI prevalence was 5.79%, with a significantly higher occurrence in males (7.18% vs. 1.53%, p=0.016) and older age groups (p<0.001). AKI was diagnosed in all patients with DSS (100%) compared to DHF (4.76%) and DF (4.5%) (p<0.001).
- Hypotension (28.57% vs. 5.49%, p<0.001) and complications like MODS or encephalitis (46.67% vs. 4.62%, p<0.001) were strongly associated with AKI.
- Significant predictors of AKI included elevated blood urea, serum creatinine, INR, aPTT, total and direct bilirubin, SGOT, SGPT, and alkaline phosphatase levels (p<0.001).
- Mortality was observed in five patients (0.93%), all of whom had AKI (p<0.001).

This study highlights a significant prevalence of AKI (5.79%) among dengue patients, emphasizing the need for early identification and management of renal involvement in dengue fever.

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