

COVID 19 - DENGUE CO-INFECTION
**Socio-demographic, Clinical and
Laboratory Characteristics in a Tertiary
Hospital in Bangladesh.**

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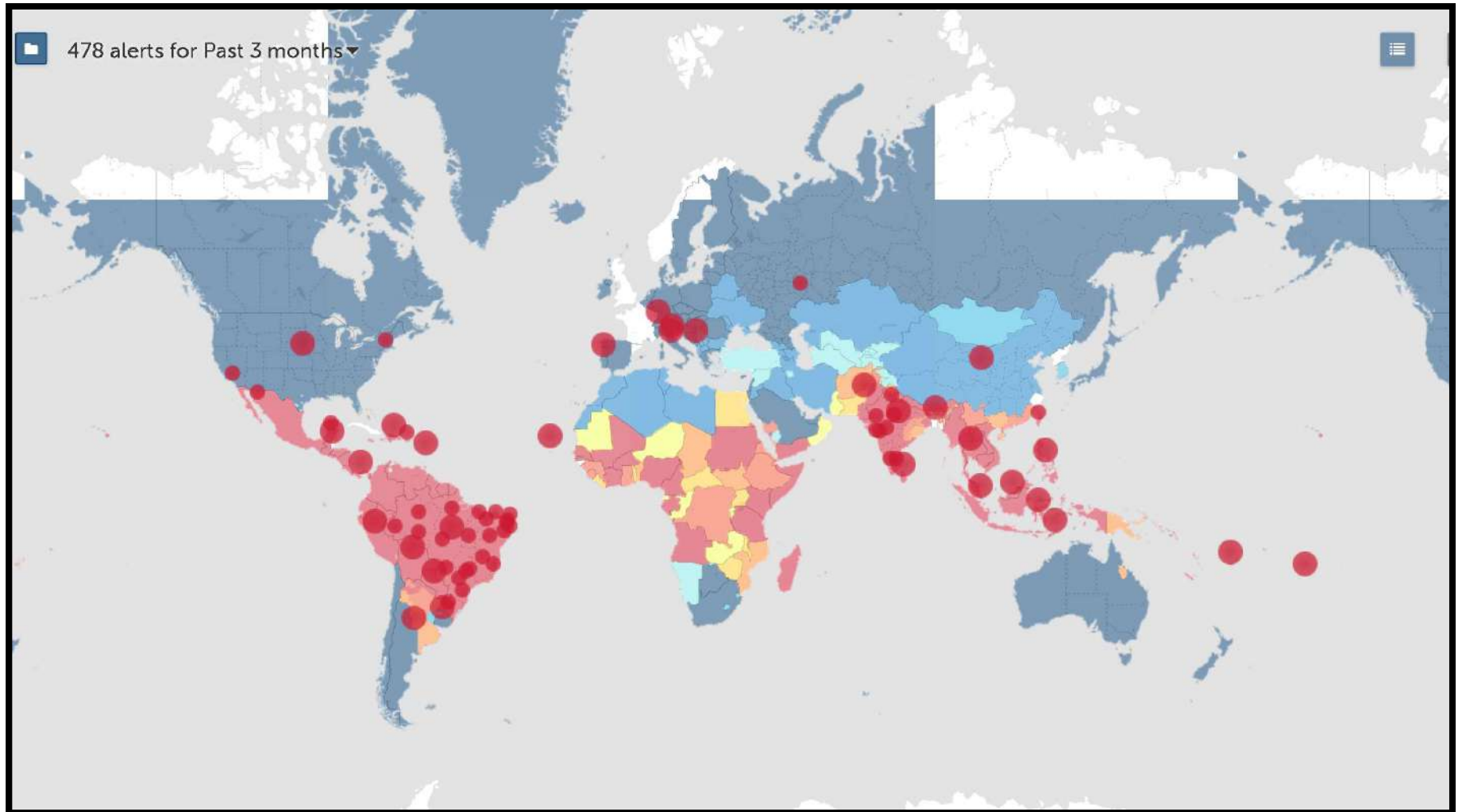
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Afroze SR*, Islam MJ*, Khalil I, Azimunnessa S, Afroze F,
Haque HF, Yasmin S, Ahmed MAU, Ahmed JU, Ahmed
AKMS, Hossain MD, Rahman MR, Uddin KN**

Background

- Since starting of the SARS-COV 2 pandemic till date, in **dengue endemic** countries co-infection of **dengue–COVID 19** remains a **healthcare concern**
- Cases have been **reported** from some countries.
- **Bangladesh** being a high endemic region for dengue infection **bears risk** of significant healthcare burden of such co-infection cases.
- During the **surge** of dengue cases in **monsoon season in 2021**, the possibility of dengue–COVID 19 co-infection cases also increased.

CDC World Dengue map



Coronavirus

A double struggle: Home ministry PRO battling Covid-19, dengue



Star Online Report

Fri May 22, 2020 11:34 AM Last update on: Sat May 23, 2020

India Governance Health

Covid-dengue 'co-infections' are Bengal's new challenge as doctors say treatment very tricky

Bengal has started to see dengue infection in Covid patients. Doctors say they need to be very alert while handling co-infection cases. Mamata govt has issued guidelines.

MADHUPARNA DAS 8 August, 2020 10:33 am IST

			1	Inpatient	COVID-19: RT-PCR; Dengue: RDT
			1	ICU	COVID-19: RT-PCR; Dengue: RDT
Lokida et al. (34)	June, 2020	Pakistan	5	Inpatient	COVID-19: RT-PCR; Dengue: RT-PCR
Mahajan et al. (33)	Not mentioned	Indonesia	7	Inpatient	COVID-19: RT-PCR; Dengue: RDT, ELISA &, RT-PCR
The Times of India (32)	April 2020	India	1	-	COVID-19: RT-PCR; Dengue: RDT
The Daily Star (30)	May 23, 2020	Bangladesh	1	-	-
The Daily Star (29)	May 15, 2020	Bangladesh	1	-	-
The Print (31)	August 8, 2020	India	1	-	-

RT-PCR: Reverse transcription polymerase chain reaction; RDT: Rapid diagnostic test; ELISA: Enzyme-linked immunosorbent assay; ICU: Intensive care unit



Bangladesh perspective

2021 (5 case reports)

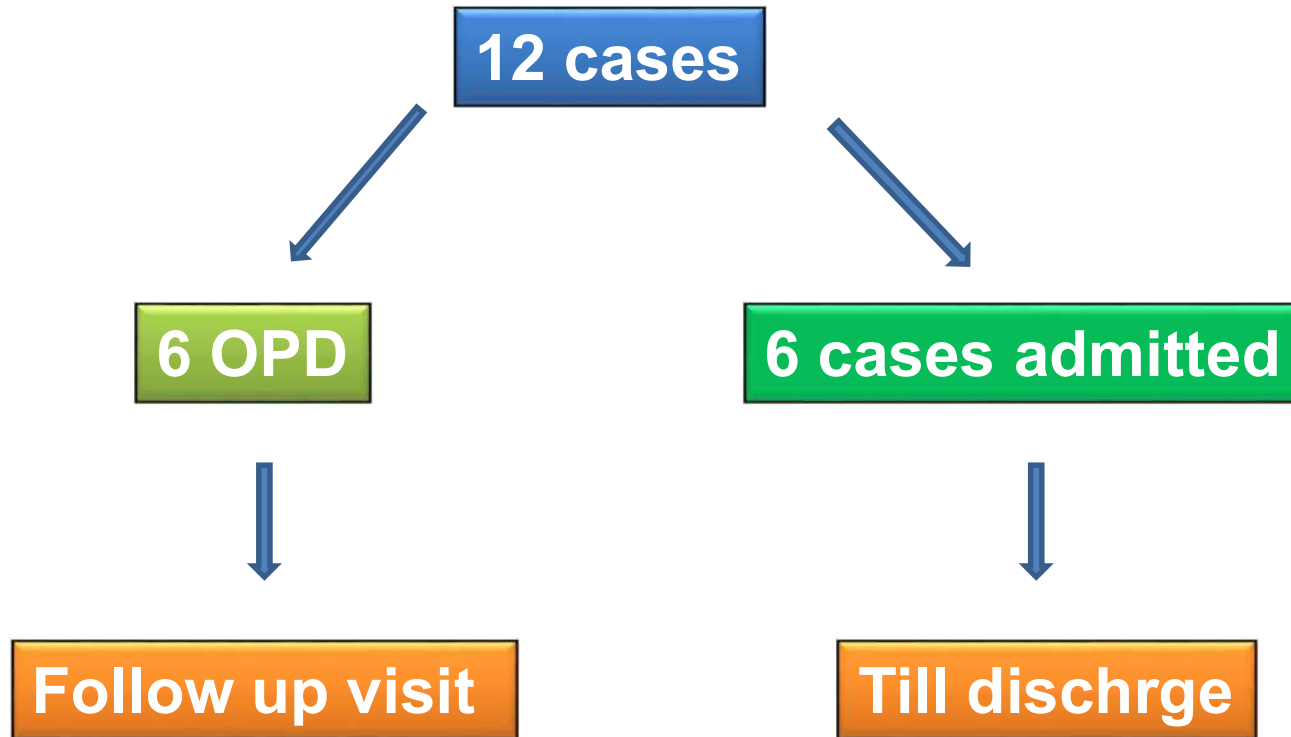
Reference	Outcome
Wahiduzzaman M, Rahim MA. Possible re-infection of SARS-CoV-2 complicated by dengue virus co-infection: report of a rare case from Bangladesh. <i>BIRDEM Med J</i> 2021; 11(1): 105-106)	cured
Hossain MT, et al. COVID-19 and Dengue Co-infection in a Young Girl: A Case Report. <i>Bangladesh J Medicine</i> 2022; 33: 104-108.	cured
Ferdous A, Hossain M, Afrin M, et al. (December 27, 2021) Dengue With COVID-19: Associated With Co-infection and Multiple Organ Dysfunction in a Child. <i>Cureus</i> 13(12): e20763. doi:10.7759/cureus.20763	cured
Amin MA, et al. COVID-19 and dengue infection in Bangladesh: A case of coinfection where hemoptysis as first presentation. <i>Clin Case Rep.</i> 2022;10:e05252. https://doi.org/10.1002/ccr3.5252	cured
Hossain MR, et al. SARS-CoV-2 and dengue virus coinfection in an adult with beta-thalassemia (trait): A case report from Bangladesh with literature review. <i>Heliyon</i> 7 (2021) e08229. https://doi.org/10.1016/j.heliyon.2021.e08229	cured

Method



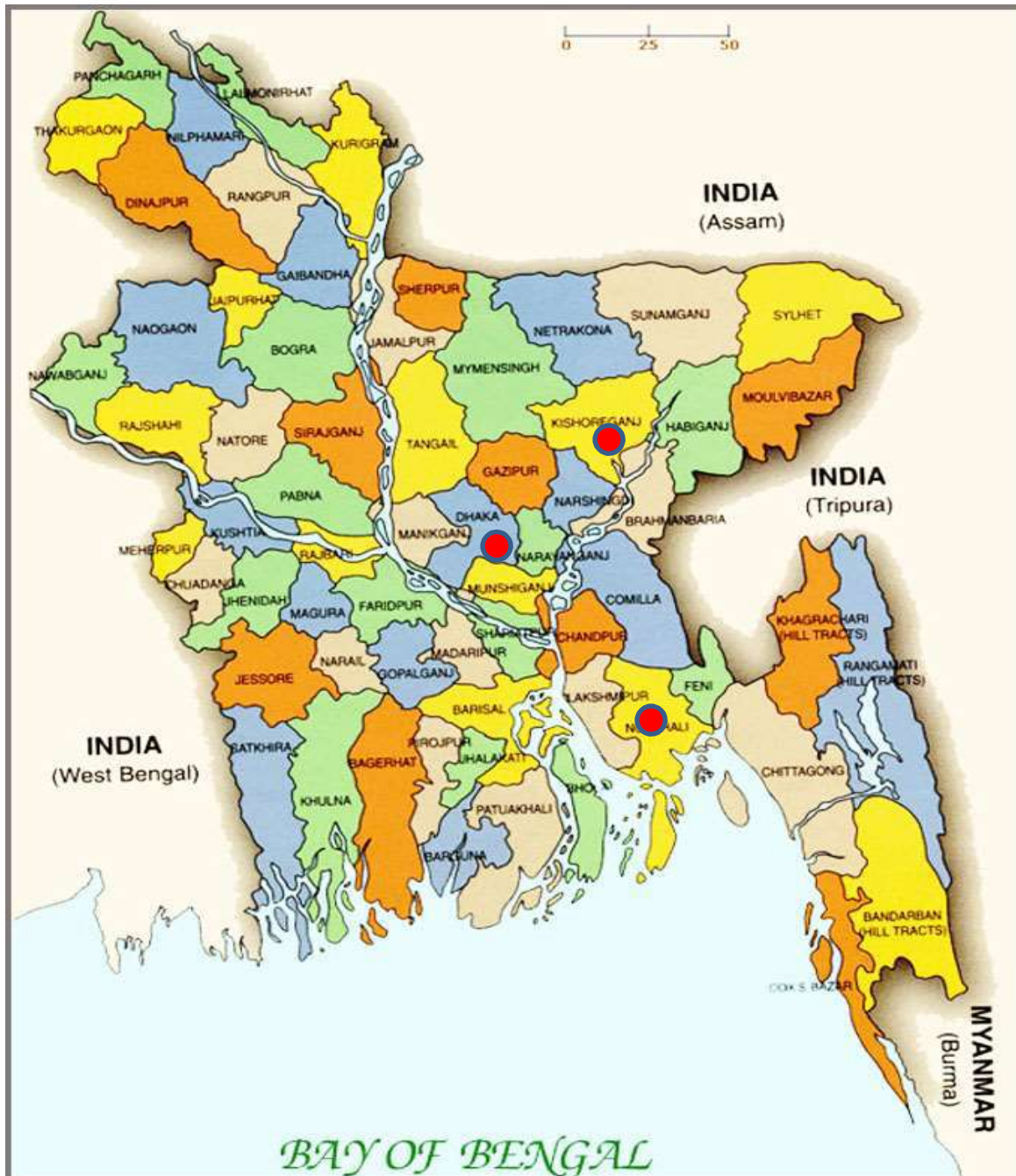
- **Observational study**
- **BIRDEM General Hospital, Dhaka**
- **June 2021 - December 2021**
- **NS1-Antigen & RT-PCR for SARS-CoV-2 positive cases on admission/1st visit : 12 cases (adult)**
- **Socio-demographic, clinical and laboratory characteristics & treatment outcome**





Results



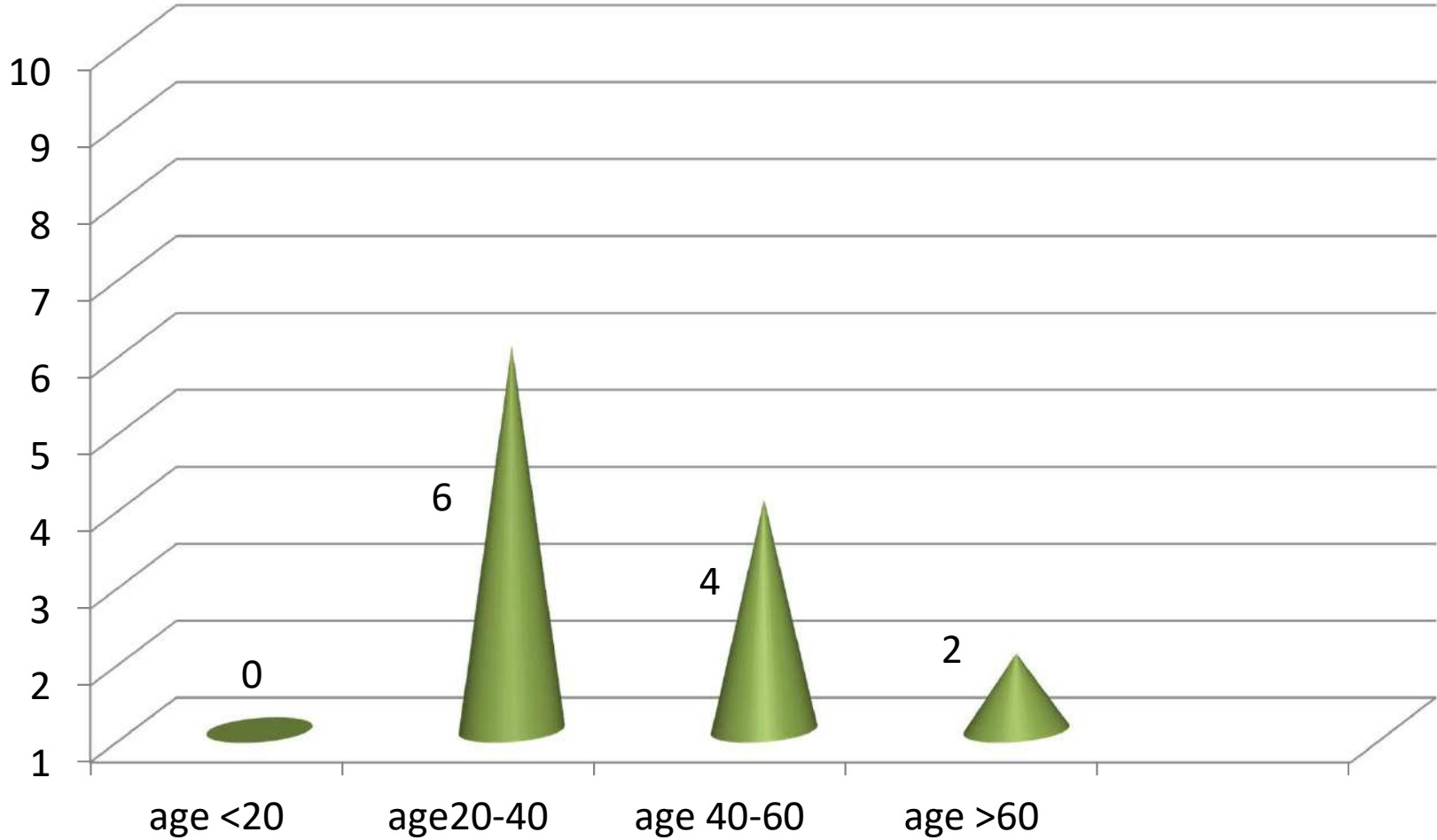


Within Dhaka : 10

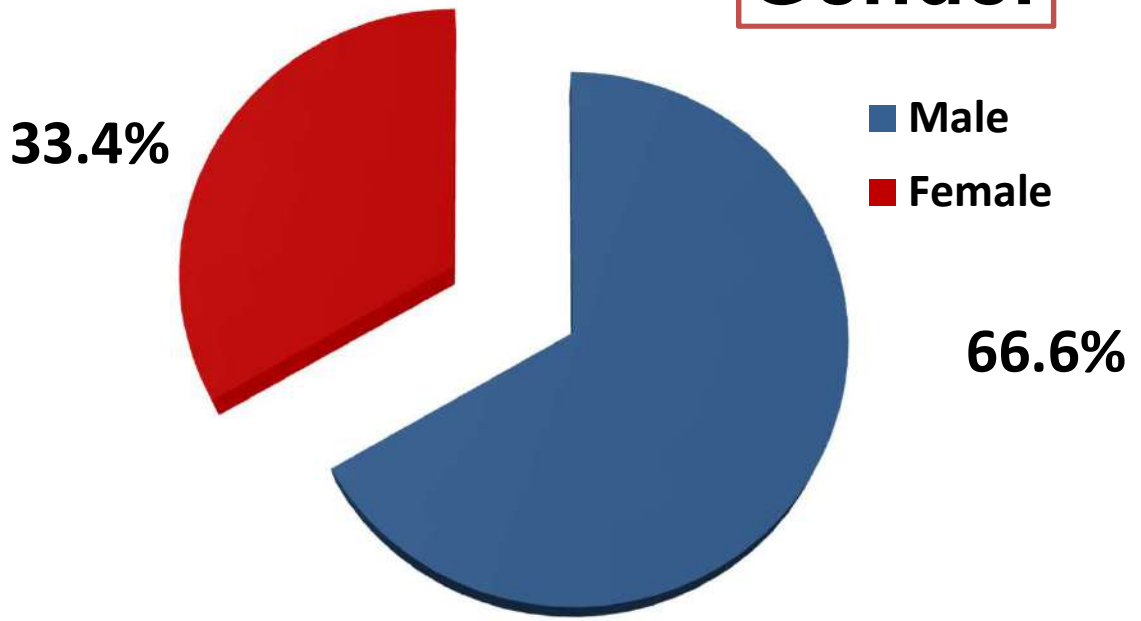
Noakhali : 1

Kishoreganj : 1

Mean age of 12 cases: 47.0 yrs (28-87yrs)



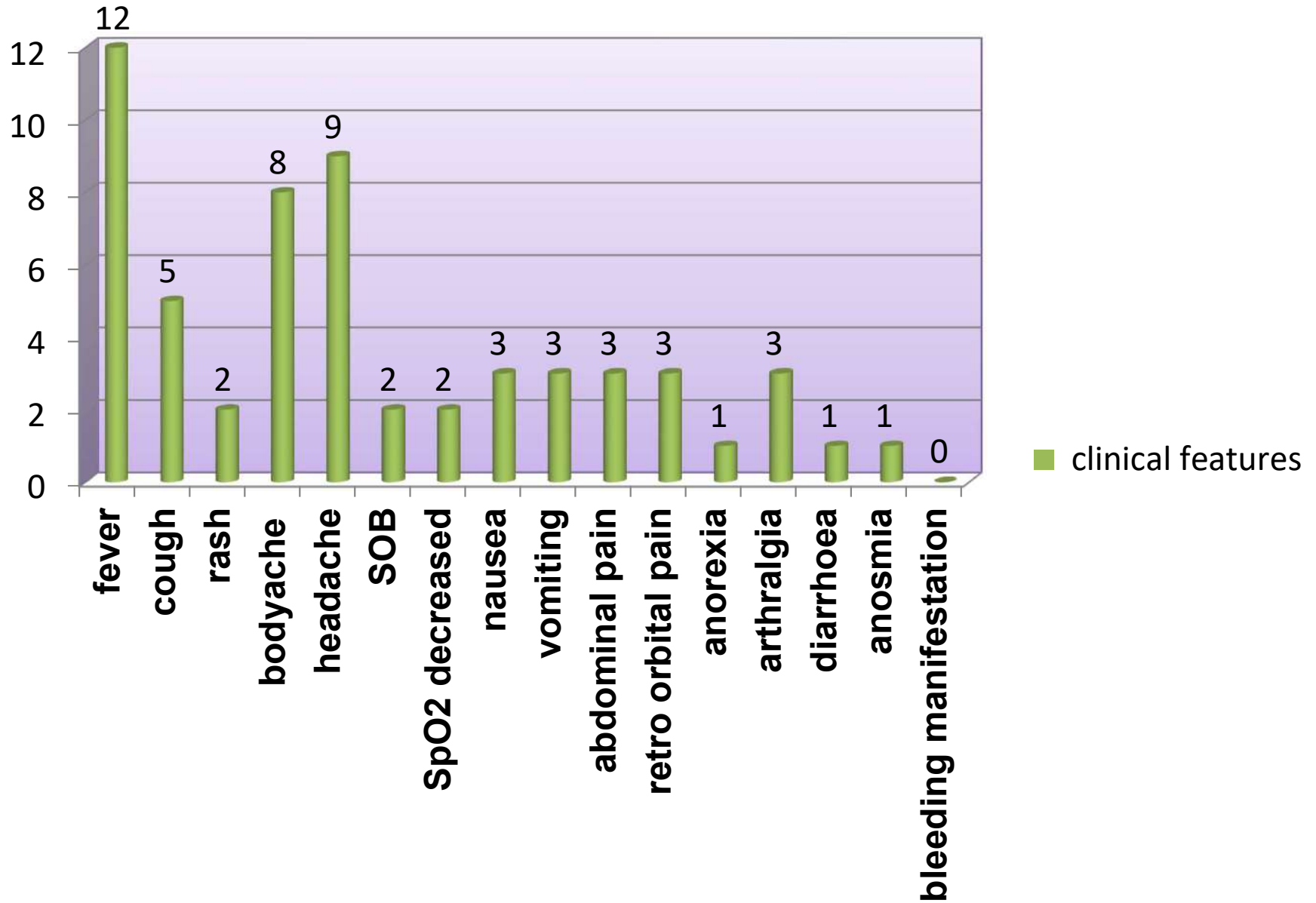
Gender





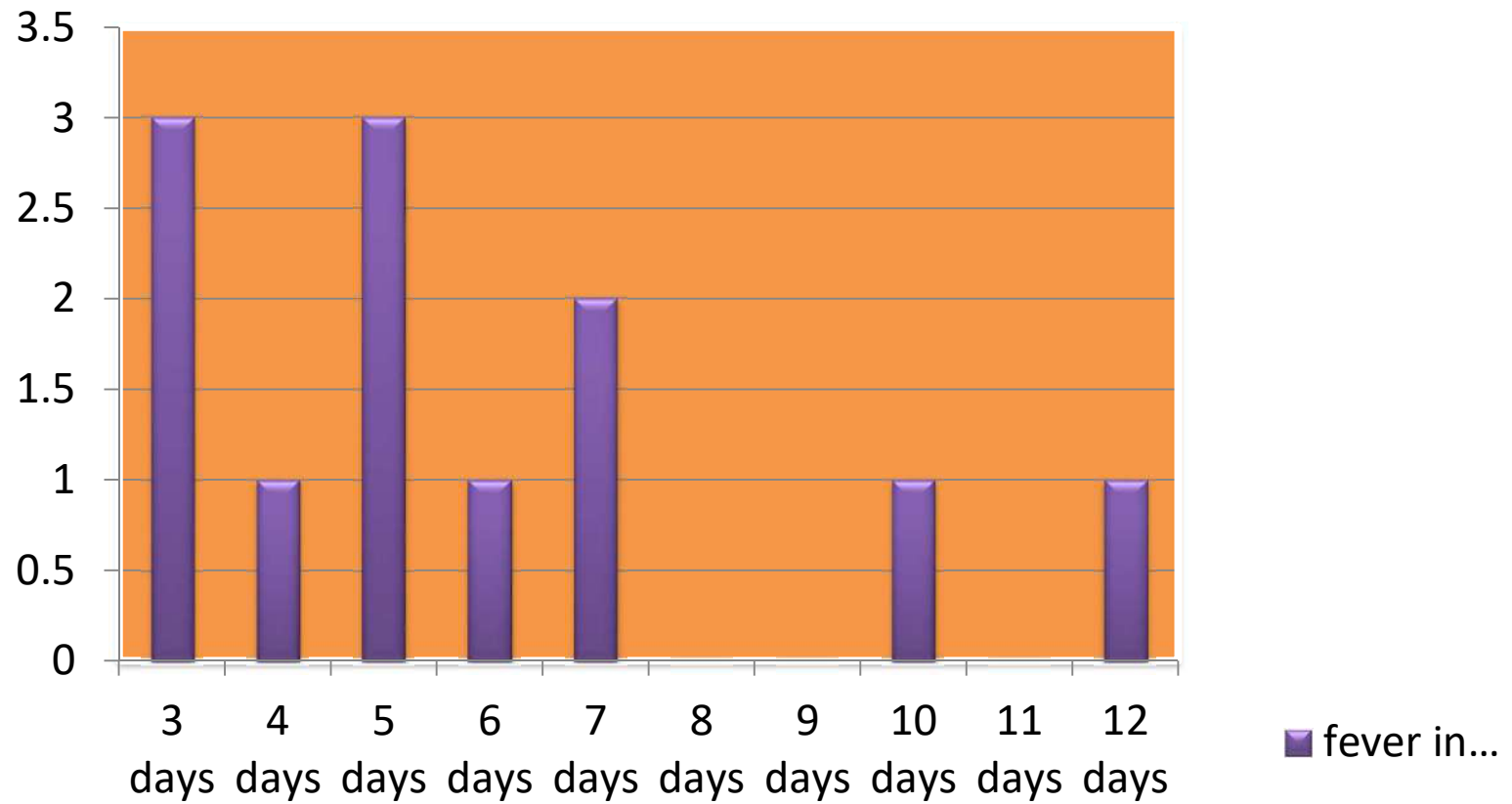
- **Diabetes mellitus (2)**
- **Hypertension (1)**
- **Both of above (3)**
- **Congenital adrenal hyperplasia
with adrenal insufficiency, on oral oradaxon (1)**

Presenting clinical features



Mean duration of fever was **5.8 days**

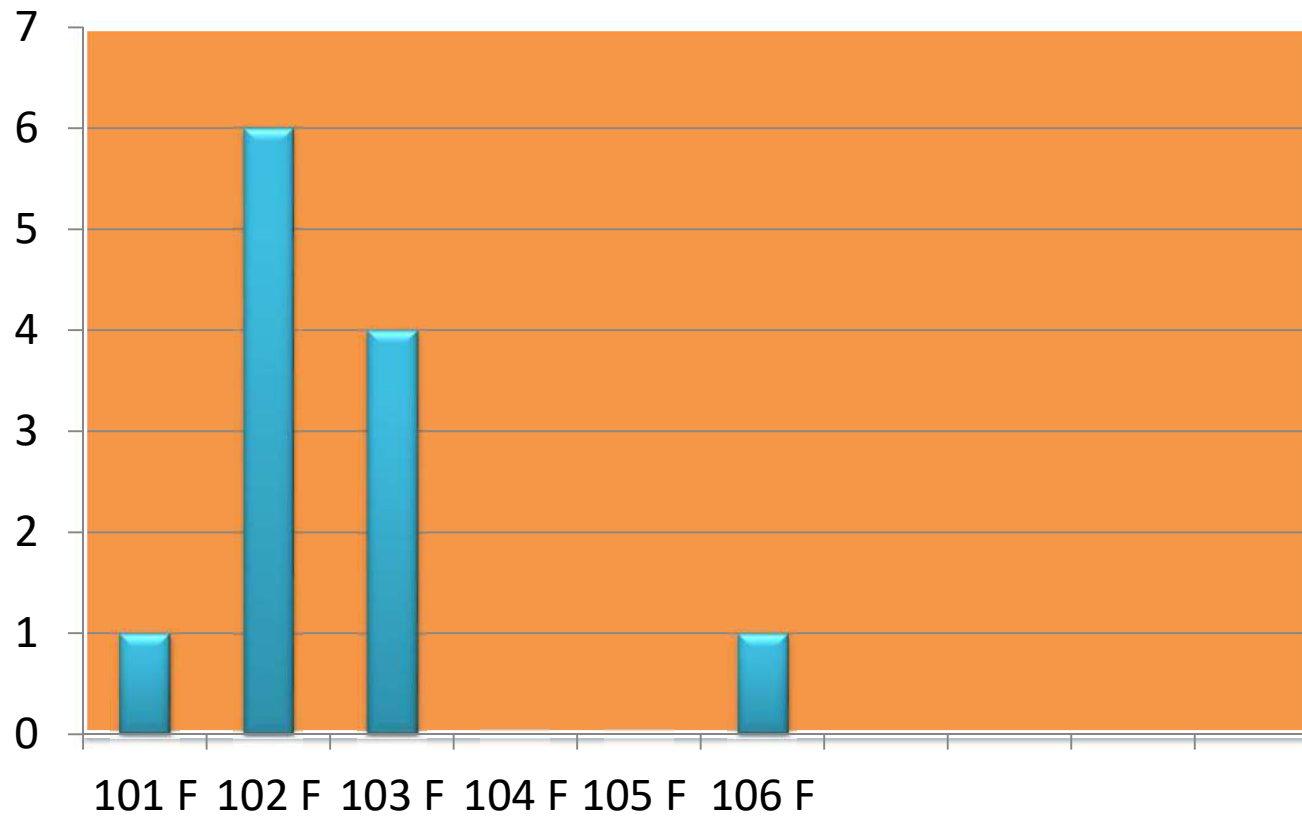
No of cases



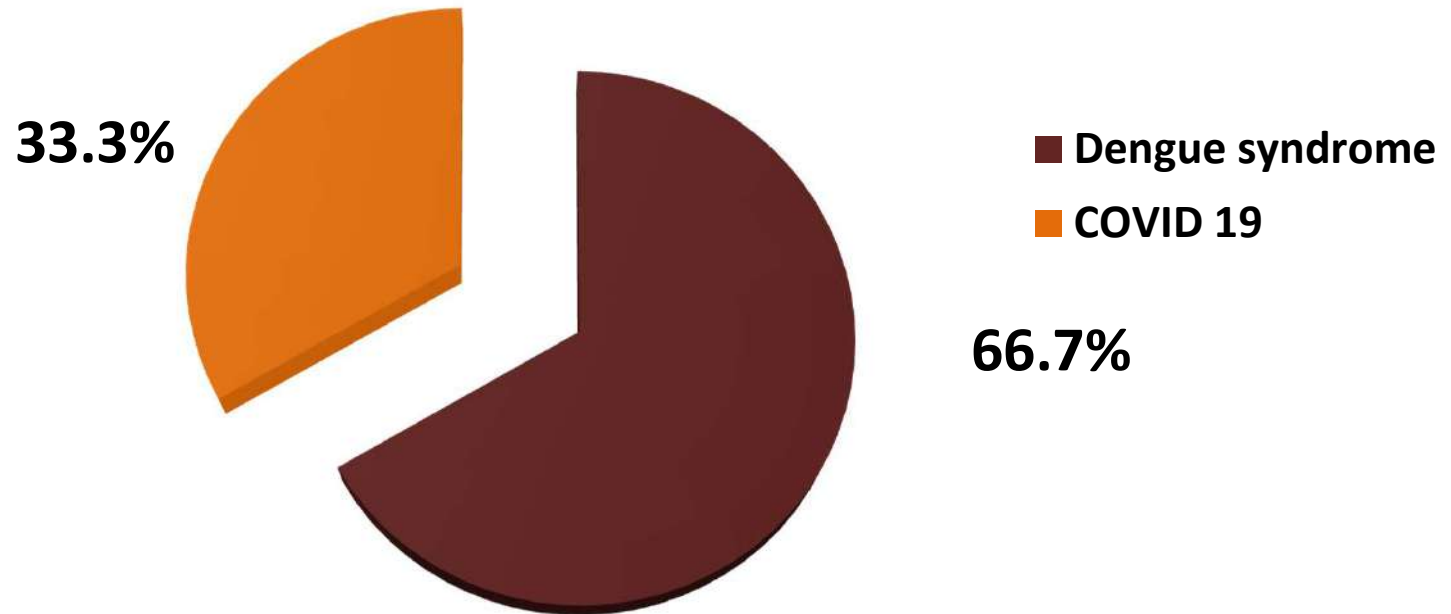
Mean recorded highest temperature was **102.5°F**

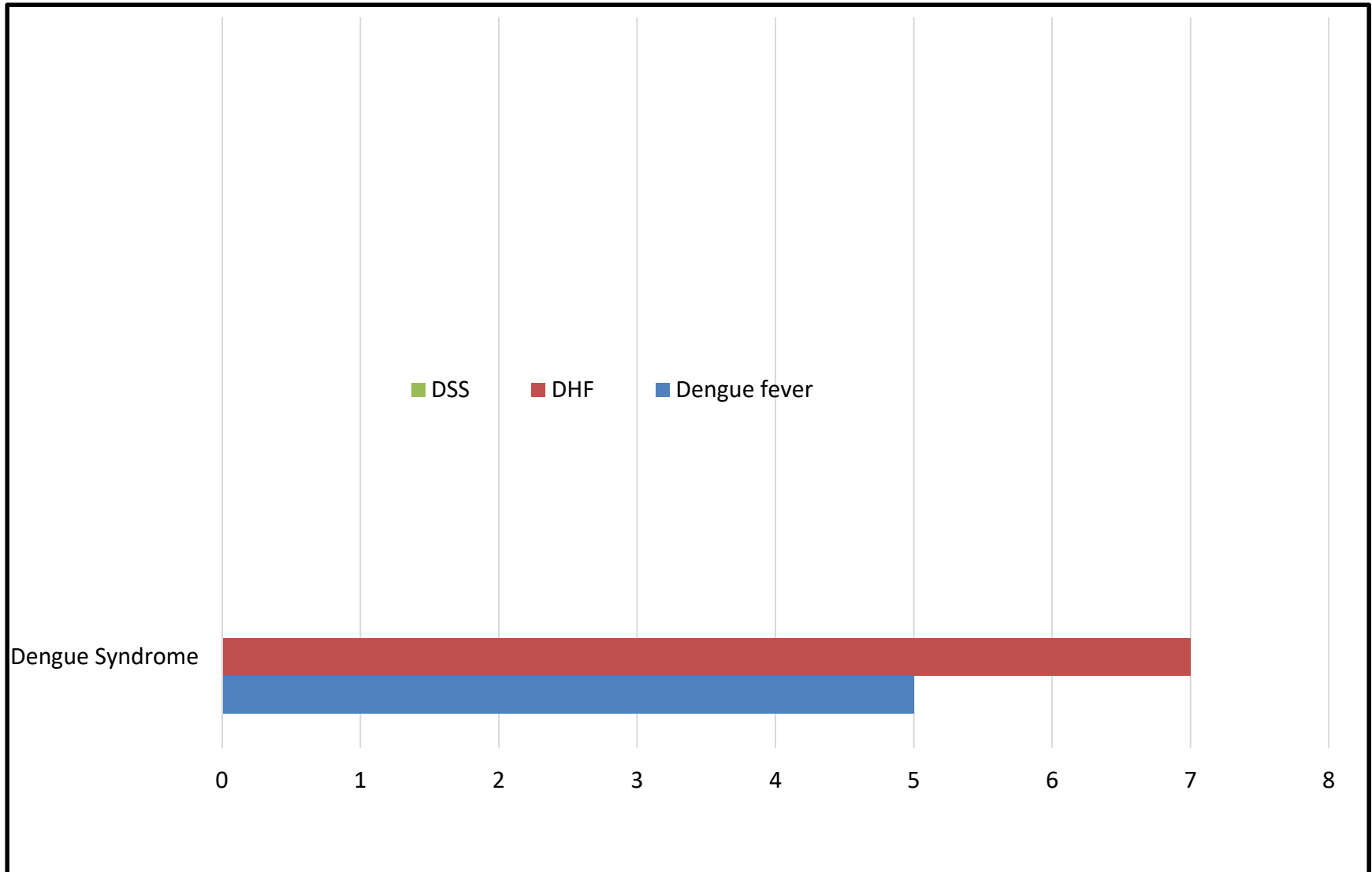
No of cases

■ max temp



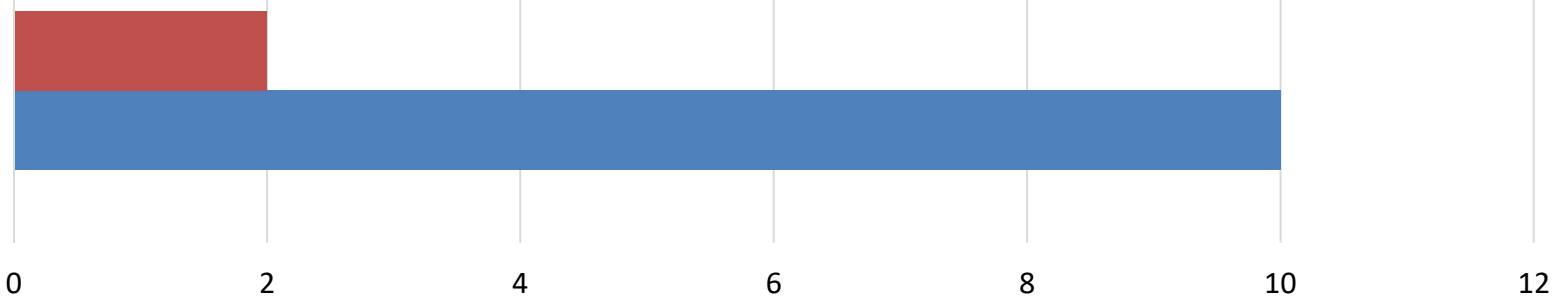
Predominant Clinical Features





COVID 19

■ Critical ■ severe ■ moderate ■ mild



	Baseline HCT	Baseline WBC x 10⁹/L	Baseline Absolute Neutro. Count x 10⁹/L	Baseline Absolute Lympho. count x 10⁹/L	Neutrophil Lymphocyte ratio
Mean	39.9%	5.20	4.60	3.10	2.4
Lowest	34.7%	2.10	1.30	1.10	0.2
Highest	47.9%	9.71	9.70	7.90	6.5

	Lowest Platelet Count x 10 ⁹ /L	Base line AST U/L	Base line ALT U/L	Highest CRP mg/L	Highest D.dimer µgm/ml	Highest LDH U/L	Highest Serum Ferritin ngm/ml	HbA1C %
Mean	100.4	88.2	73.0	47.4	2.0	668.2	888.2	9.34
Lowest	8.00	13.0	16.0	10.0	0.27	310.0	193.0	7.9
Highest	194.0	218	126	126.0	6.0	1230	4175	12.3

Radiological Investigation	Findings	No
Chest xray	Pneumonitis	4
	Pleural effusion (DHF)	1
HRCT	10% - 35% lung involvement	4
USG abdomen	Ascitis (DHF)	1

Management

- **All cases were managed as per national guidelines of Dengue & COVID 19**
- **No one required critical care support**
- **Average hospital stay : 4.8 days**

Conclusion

Observation revealed that

Dengue –COVID 19 co-infection may occur

If diagnosed & managed adequately

can **prevent** complications

fatal outcome can be **avoided**

In appropriate clinical scenario

high degree of suspicion of co-infection should be considered



***THANK
YOU
ALL***