The Study of Incidence, Clinical Profile and Outcome of Acute AcalculousCholecystitis In Dengue Fever

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Abstract:

Background & Objectives: Dengue fever is one of the commonest arboviral disease in this part of the world with sudden increase in number of patients in last few years. In most of the cases, it is asymptomatic or presents with features common to any viral infection. Dengue fever is usually non-specific, self limiting, biphasic febrile illness but the presentation may range from being asymptomatic to classical dengue fever, dengue hemorrhagic fever and dengue shock syndrome. In dengue fever patients, acute acalculouscholecystitis is not uncommon and is usually self-limiting and resolves with conservative management only.Aim of study to now the incidence, clinical profile and outcome of acute acalculouscholecystitis in admitted dengue patient.

Methods : Dengue patient admitted in Basavesshwar Teaching and General Hospital attached to MahadevappaRampure Medical college.A prospective clinical study,18months (1st October 2019 to 31st March 2021).Patients >18yrs age with clinical features suggestive of Dengue infection, later on confirmed by Dengue rapid test will be included in study.

Results : Study observed that, maximum number of patients 44 (57.0%) were belongs to the age group of 21-40 years, 75 (75.0%) of patients were diagnosed dengue fever, 19 (19.0%) of patients were diagnosed dengue hemorrhagic fever and 6 (6.0%) of patients were diagnosed dengue shock syndrome. USG findings 75 (75.0%) of patients were normal study and 25 (25.0%) of patients diagnosed by USG was pericholecystic oedema. The hospital prevalence of pericholecystic oedema was 25%

Interpretation & Conclusion: The incidence was found to be 25%. Similar studies have been conducted in various parts of the world. Keng liana wu et al. found the incidence of acalculouscholecystitis to be 28%.Acute acalculouscholecystitis is one of the most common atypical presentations in patients with dengue fever being seen in about 25 percent of patients. Conservative line of management with antibiotics, intravenous fluids, analgesics, regular monitoring is sufficient in managing this complication with no need for surgical intervention.

Key words:dengue , Acute acalculous, pericholecystic oedema

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I.   Introduction

Dengue fever is one of the commonest arboviral disease in this part of the world with sudden increase in number of patients in last few years. In most of the cases, it is asymptomatic or presents with features common to any viral infection. Dengue fever is usually non-specific , self -limiting, biphasic febrile illness but the presentation may range from being asymptomatic to classical dengue fever, dengue hemorrhagic fever and dengue shock syndrome [1]. Dengue fever is a mosquito borne viral disease caused by the dengue virus and is endemic in large areas of South East Asia [2]. Typically, dengue fever is an acute febrile illness characterized by frontal headache, retro ocular pain, muscle and joint pain, nausea, vomiting and rash[3,4]. Dengue virus infection manifests with wide range of severity from asymptomatic mild febrile illness to life threatening disease including hemorrhagic manifestations and severe dengue. The clinical picture of classic dengue begins with a high-grade fever, intense headache and myalgia, prostration, nausea, vomiting, arthralgia.

In dengue fever patients, acute acalculouscholecystitis is not uncommon and is usually self-limiting and resolves with   conservative management only. Role of ultrasonography has a supporting role in dengue fever for prognostic and diagnostic significance.

Aim of study to know the incidence, clinical profile and outcome of acute acalculouscholecystitis in admitted dengue patient.

Dengue fever (DF) and its severe forms—dengue haemorrhagic fever (DHF) and dengue shocksyndrome (DSS)—have become major international public health concerns. Over the past threedecades, there has been a dramatic global increase in the frequency of dengue fever (DF), DHF and DSS and their epidemics, with a concomitant increase in disease incidence. Dengue is found in tropical and subtropical regions around the world, predominantly in urban and semi-urban areas[.5] Dengue is a self-limiting acute mosquito transmitted disease characterized by fever, headache, muscle, joint pains, rash, nausea and vomiting. Dengue Fever (DF) is caused by an arbovirus and spread by Aedes mosquitoes. Some infections result in Dengue Haemorrhagic Fever (DHF) and in its severe form Dengue Shock Syndrome (DSS) can threaten the patient's life primarily through increased vascular permeability and shock.[6]

Acute acalculouscholecystitis is equally rare in dengue fever. The main pathophysiological changes in dengue fever could be due to increased vascular permeability causing plasma leakage and serous effusion with high protein content which causes thickening of gall bladder wall [7]. Gall bladder wall edema on ultrasound was a common associated finding of severe dengue in the index study similar. Gall bladder wall edema on ultrasound was a common

associated finding of severe dengue in the index study similar to the previous studies [8]

Study by ShaheenBhatty et al Acute acalculouscholecystitis was seen in a significant proportion of patients with dengue fever. All patients improved with good hydration and correction of thrombocytopenia. Based on these observations it is suggested that close observation and initial treatment of thrombocytopenia is mandatory[9].

Study by Manish Chandey et al showed that in dengue fever patients , acute acalculouscholecystitis is not un common and is usually self - limiting and resolves with conservative management only . Role of ultrasonography has a supporting role in dengue fever for prognostic and diagnostic significance .[1]

Study by Anurag Prasad, et al shows that Acute acalculouscholecystitis it is in dengue is not a very uncommon finding. Early diagnosis and appropriate treatment have very good prognosis.[2]

Sreeramulu et al showed that Acute acalculouscholecystitis is one of the most common atypical presentations in patients with dengue fever being seen in about 7.12 percent of patients. Conservative line of management with antibiotics, intravenous fluids, analgesics, regular monitoring is sufficient in managing this complication with no need for surgical intervention.[4]

Keng liana wu et al. found the incidence of acalculouscholecystitis to be 28% [3].A study done by S Khanna et al, the incidence was 16.36% [9] .A prospective study by Sharma et al. showed 14 out of 27 patients(51.8%) of DF with acalculouscholecystitis[45].

II.   Materials And Methods
This is a prospective study was carried out on patients admitted in Intensive care unit of Basaweshwara Teaching and general Hospital attached to Mahadevapparampure medical college, Kalaburagi ,Karnataka .
Study period : The Study period from November 2019- April 2021 .
Sample size: 100
Study design: Prospective observational study
Subjects and selection method : Cases of Dengue fever who fulfill the inclusion criteria were selected. Pretestcounseling will be given to patients. After taking written informed consent from patients/attenders ,case will be enrolled ,data will be collected in a predesigned semi-structured questionnaire. Patients evaluation was done by detailed history taking, clinical examination and relevant inveatigations.

INCLUSION CRITERIA :
1. Patients >18yrs age with clinical features suggestive of Dengue infection, later on confirmed by Dengue rapid test will be included in study
EXCLUSION CRITERIA : 1.Mixed infections will be excluded from the study.
2 .Chronic alcoholics will be excluded from the study.
3.Calculous cholecystitis
STATISTICAL ANALYSIS :
Statistical data was analyzed by IBM SPSS 20.0 version software. Collected data were spread on excel sheet and prepared master chart. Through the master chart tables and graphs were constructed. For quantitative data analysis t-test and ANOVA tests were applied. For qualitative data analysis chi-square test and Fisher exact probability tests were applied for statistical significance. If P-value was less than 0.05 considered as significant .

III.   Results
Results

Table No.1: Age wise distribution of Dengue patients

Age in years	Number of patients	Percentage
≤ 20	22	22.0
21-40	44	44.0
41-60	22	22.0
61-80	12	12.0
Total	**100**	**100.0**
Mean ± SD	**35.21 ± 12.40**	

Study observed that, maximum number of patients 44 (57.0%) were belongs to the age group of 21-40 years, followed by each 22 (22.0%) of patients were belongs to the age group of ≤ 20 and 41-60 years and 12 (12.0%) of patients were belongs to the age group of 60-80 years. The mean age of patients was 35.21

Simple bar diagram represents age wise distribution of Dengue patients
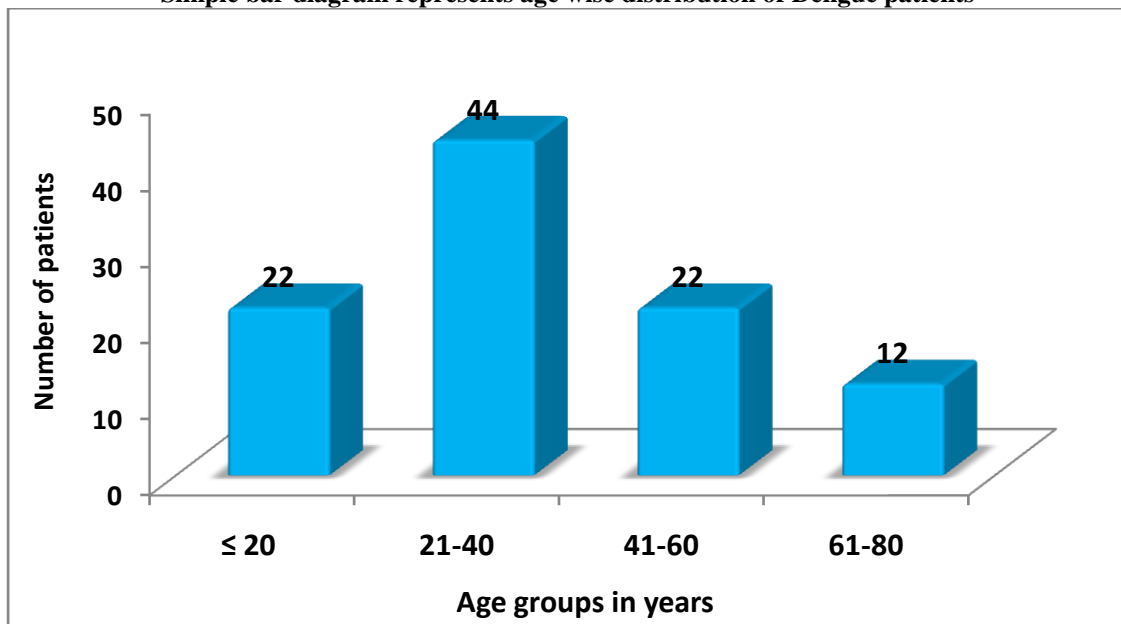
Table No.2: gender wise distribution of Dengue patients

Gender	Number of patients	Percentage
Males	**49**	**47.0**
Females	**51**	**53.0**
Total	**100**	**100.0**

Study observed that, out of 100 sample patients; 49 (49.0%) of patients were males and 51 (51.0%) of patients were females.

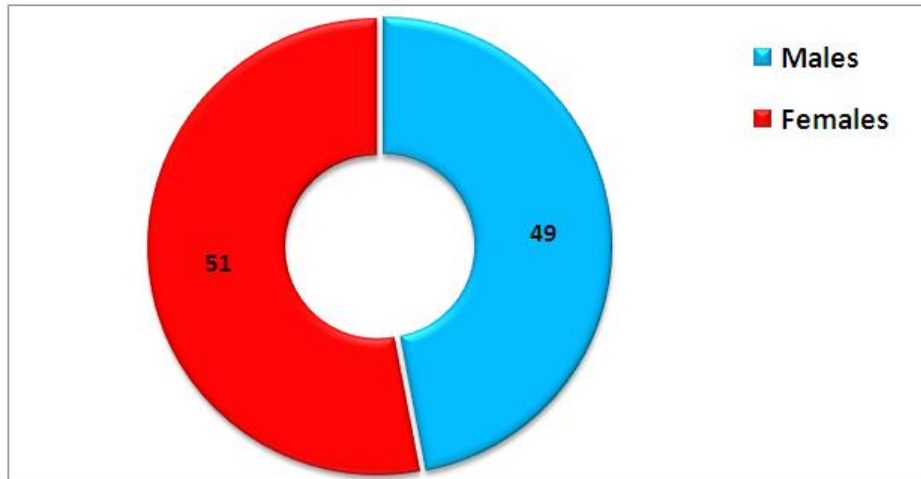**Pie diagram represents gender wise distribution of Dengue patients**

Table No.3: Bleeding manifestation wise distribution of Dengue patients

Bleeding manifestation	Number of patients	Percentage
Bleeding per vagina	1	1.0
Purpura	16	16.0
Bleeding Per rectum	1	1.0
Epistaxis	1	1.0
Hematuria	2	2.0
Malena	4	4.0
Bleeding gums	1	1.0
Ecchymosis	2	2.0
Subconjunctivalhemorrhage	1	1.0

In the present study, 25 (25.0%) of patients were seen the bleeding manifestation in pericholecysticedema, followed by 16 (16.0%) of patients were seen the bleeding manifestation in purpura.

Pie diagram represents bleeding manifestation wise distribution of Dengue patients
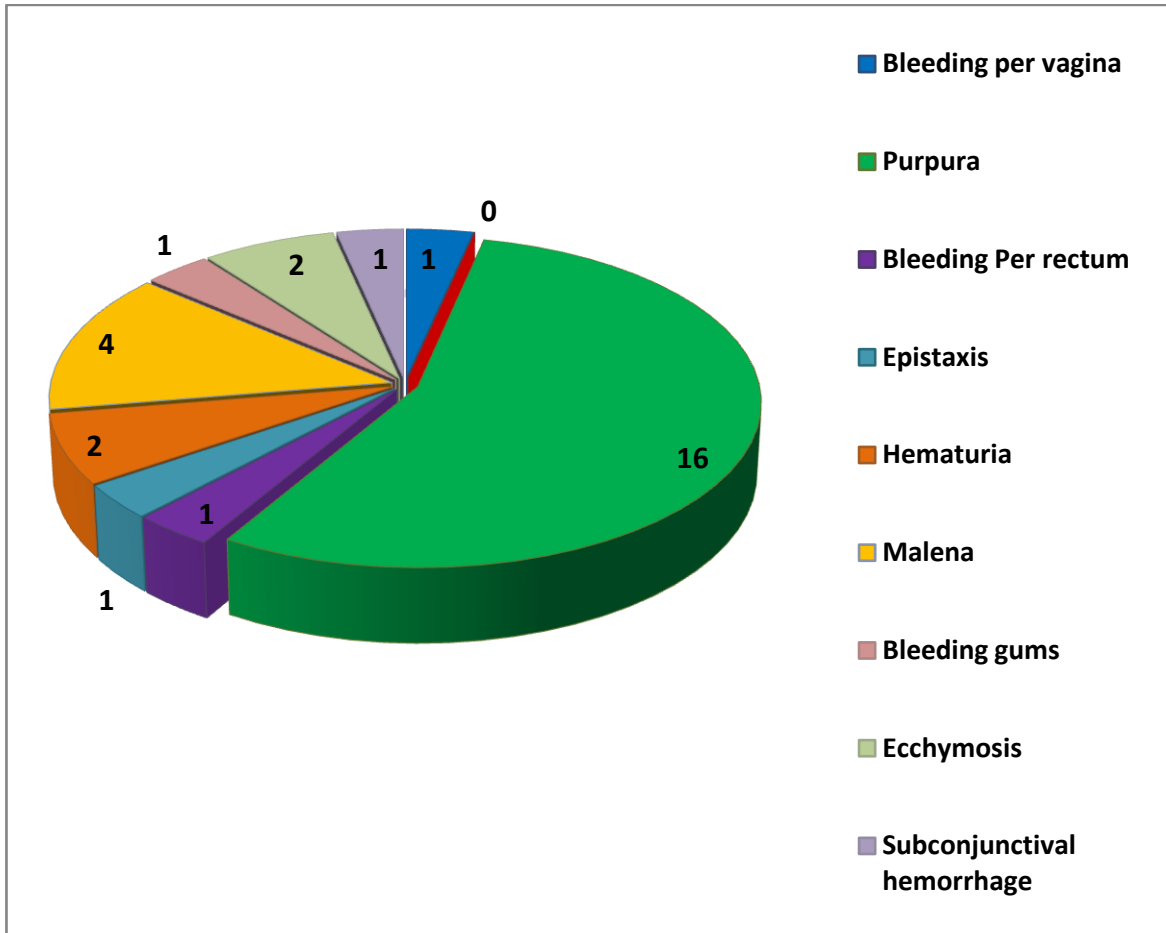
Table No.4: dengue categories wise distribution of patients

Diagnosis	Number of patients	Percentage
Dengue fever	75	75.0
Dengue hemorrhagic fever	19	19.0
Dengue shock syndrome	6	6.0
Total	100	100.0

Study observed that, out of 100 sample dengue patients; 75 (75.0%) of patients were diagnosed dengue fever, 19 (19.0%) of patients were diagnosed dengue hemorrhagic fever and 6 (6.0%) of patients were diagnosed dengue shock syndrome.

Pie diagram represents dengue categories wise distribution of patients
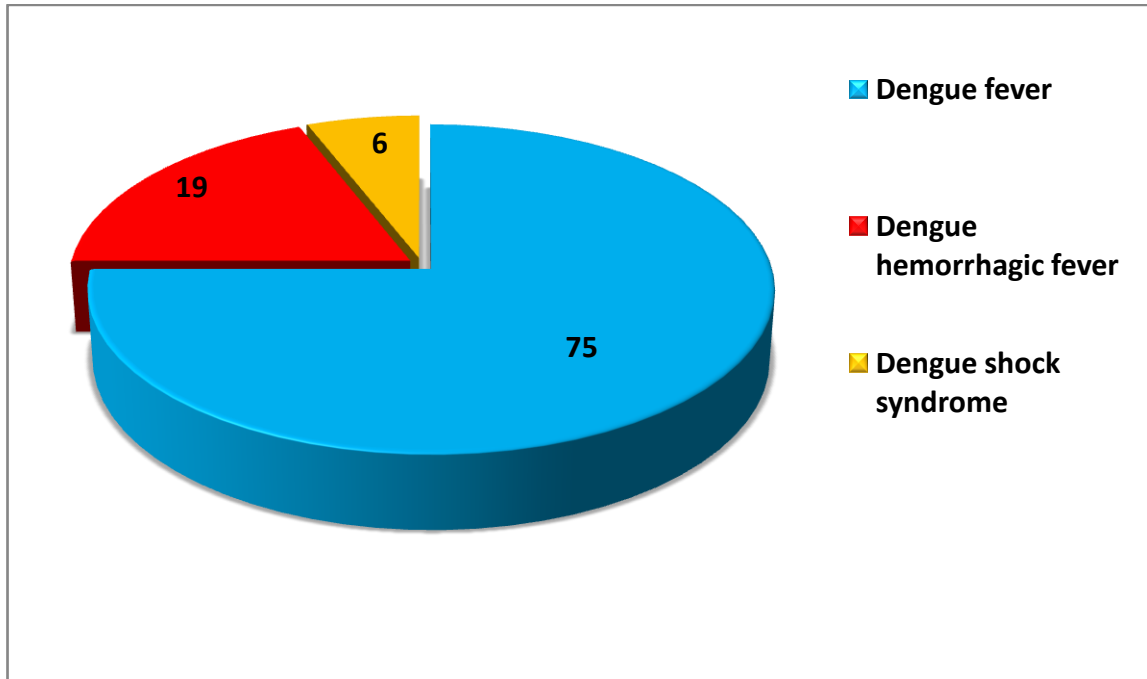
Table No.5: Variables wise distribution of Dengue patients

----Variables	Number of patients	Percentage
PALLOR	17	17.0
ICTERUS	3	3.0
EDEMA	3	3.0
TEMPERATURE (A.M. >98.9F; P.M. >99.9F)	99	99.0
HYPOTENSION (SBP<90mmHg)	12	12.0
TACHYCARDIA (RATE>100bpm)	29	29.0

In the study 99 (99.0%) of dengue patients had above normal temperature in AM and PM, 12 (12.0%) of patients were hypotension and 29 (29.0%) of patients had tachycardia,
17 (17.0%) of patients were seen pallor, each 3 (3.0%) of patients were seen icterus and edema respectively.

Simple bar diagram represents variables wise distribution of Dengue patients
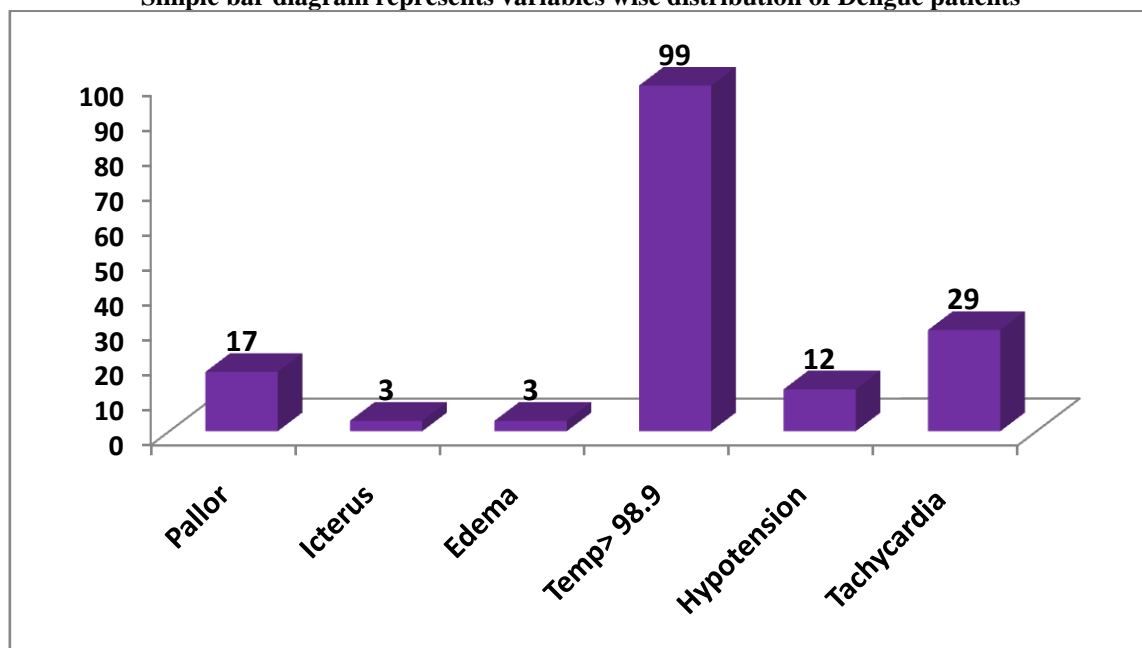
Table No.6: Variables wise distribution of Dengue patients

Variables		Number of patients	Percentage
BS	NS	87	87.0
	Cr	13	13.0
	BS	1	1.0
	PIE	1	1.0
CVS	NS	98	98.0
	S3	2	2.0
Per abdomen	NS	79	79.0
	ASC	10	10.0
	H	7	7.0
	HS	2	2.0
	S	6	6.0
CNS	NS	94	94.0
	NR	4	4.0
	ASC	2	2.0
	HS	1	1.0

Simple bar diagram represents variables wise distribution of Dengue patients

Table No.7: Hb% level wise distribution of Dengue patients

Hb% level	Number of patients	Percentage
< 12	22	12.0
≥ 12	78	78.0
Total	100	100.0
Mean ± SD	12.60 ± 2.32	--

Study observed that, 78 (78.0%) of patients had Hb% level in the range ≥ 12 and 22 (22.0%) of patients had Hb% level < 12. The mean Hb% level was 12.60

Simple bar diagram represents Hb% level wise distribution of patients
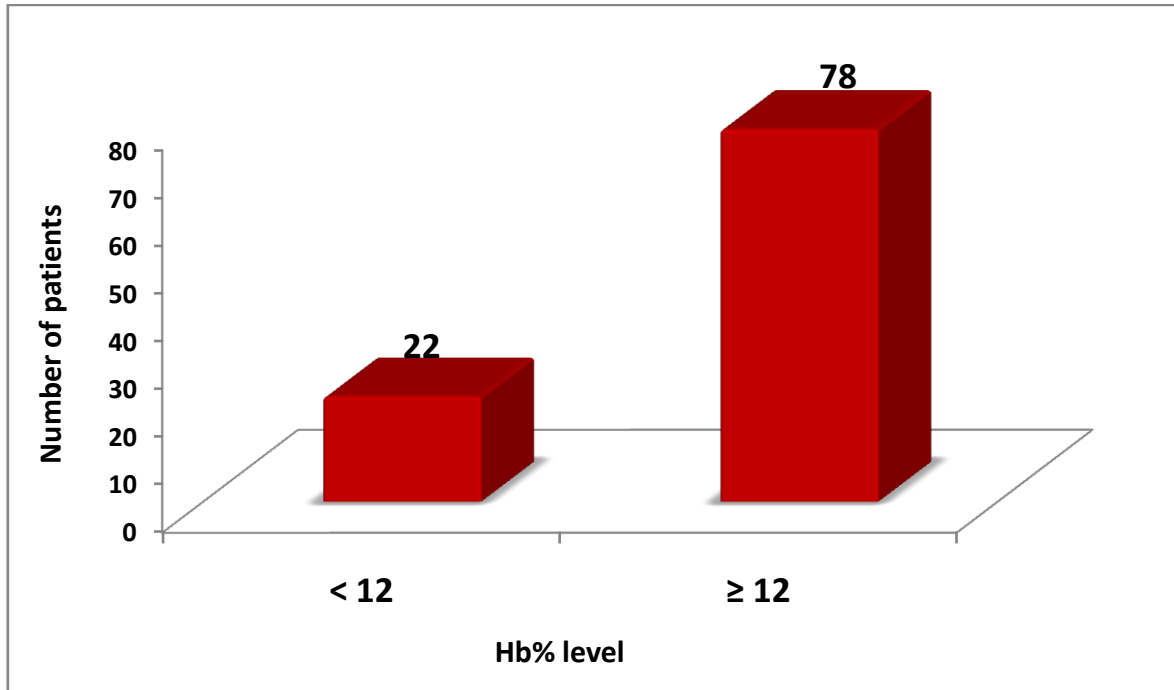
Table No.8: TC (cells/cu mm) level wise distribution of patients

TC (cells/cu mm)	Number of patients	Percentage
< 4000	35	35.0
≥ 4000	65	65.0
Total	100	100.0
Mean ± SD	7833.33 ± 1632.3	--

Study observed that, 44 (44.0%) of patients had TC (cells/cu mm) level was less than normal and 56 (56.0%) of patients had TC (cells/cu mm) level was normal. The mean TC (cells/cu mm) level was 5560.60 cell/cu mm

Simple bar diagram represents TC (cells/cu mm) level wise distribution of Dengue patients
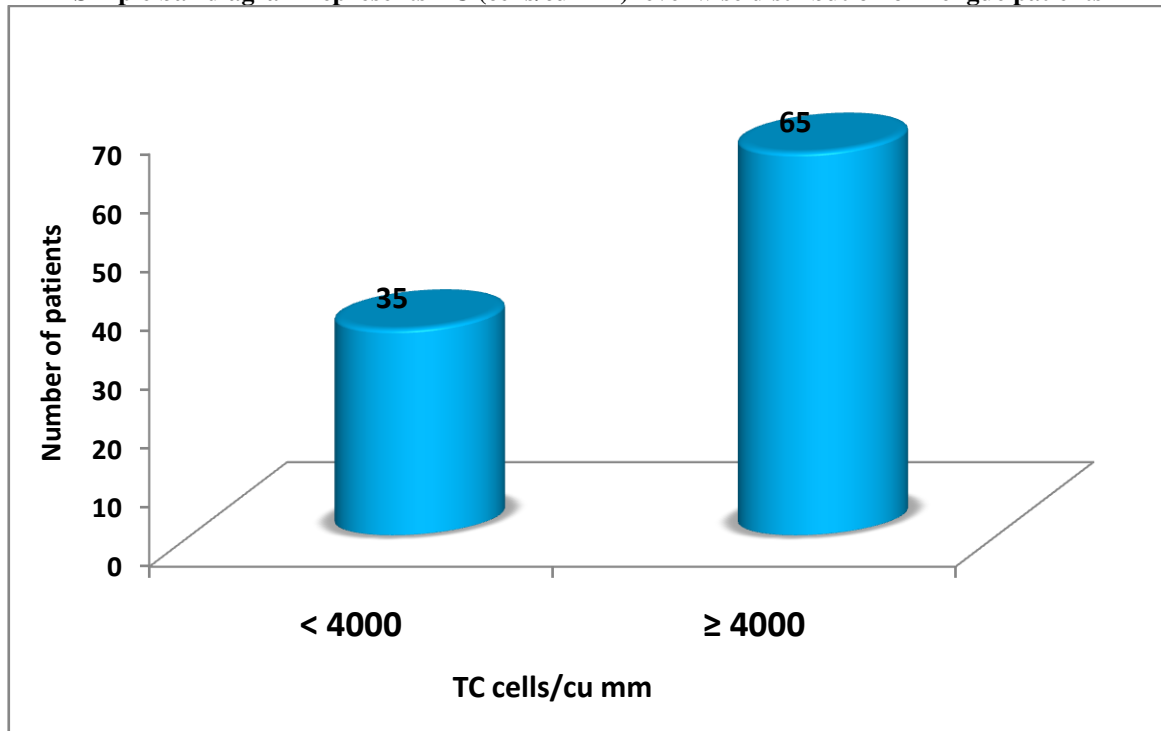
Table No.9: Comparison of platelet counts in different time intervals

Time intervals	Platelet counts		Paired t-test P-value
	Mean ± SD	Mean ± SD	
Admission day v/s 3rd day	91150.0 ± 4213.2	92278.2 ± 3862.6	t = 0.343, P= 0.663, NS
3rd day v/s 5th day	95278.2 ± 3862.6	105717.9 ± 46750.8	t = 2.452, P= 0.009, S
Admission day v/s 5th day	91150.0 ± 4213.2	105717.9 ± 46750.8	t = 4.447, P= 0.000, VHS
5th day v/s Discharge day	105717.9 ± 46750.8	15237.0 ± 49097.1	t = 6.663, P= 0.000, VHS
Range of platelets count	At admission--- --Lowest- 9000 Highest –2,60,00 At discharge ---- Lowest- 20,000 Highest –3 21,00		

NS= not significant, S=significant, HS=highly significant, VHS=very highly significant

Study reveals that, there was no statistical significant difference of mean platelet counts on admission day (1st day) and 3rd day (P>0.05).

There was statistical significant difference of mean platelet counts on 3rd day and 5th day (P<0.05). On 3rd day to 5th day the mean platelet count was significantly increased.

There was statistically very highly significant difference of mean platelet counts on admission day (1st day) and 5th day (P<0.001). On admission day to 5th day the mean platelet count was significantly increased.

There was statistically very highly significant difference of mean platelet counts on 5th day and discharge day (P<0.001). On 5th day to discharge day the mean platelet count was significantly increased.

Table No.10: PCV level wise distribution of Dengue patients

PCV levels	Number of patients	Percentage
30.0—39.9 %	85	85.0
≥ 40.0%	15	15.0
Total	100	100.0
Mean ± SD	36.16 ± 3.92	--

Out of 100 sample dengue patients 85 (85.0%) of patients PCV level was in the range of 30.0—39.9%

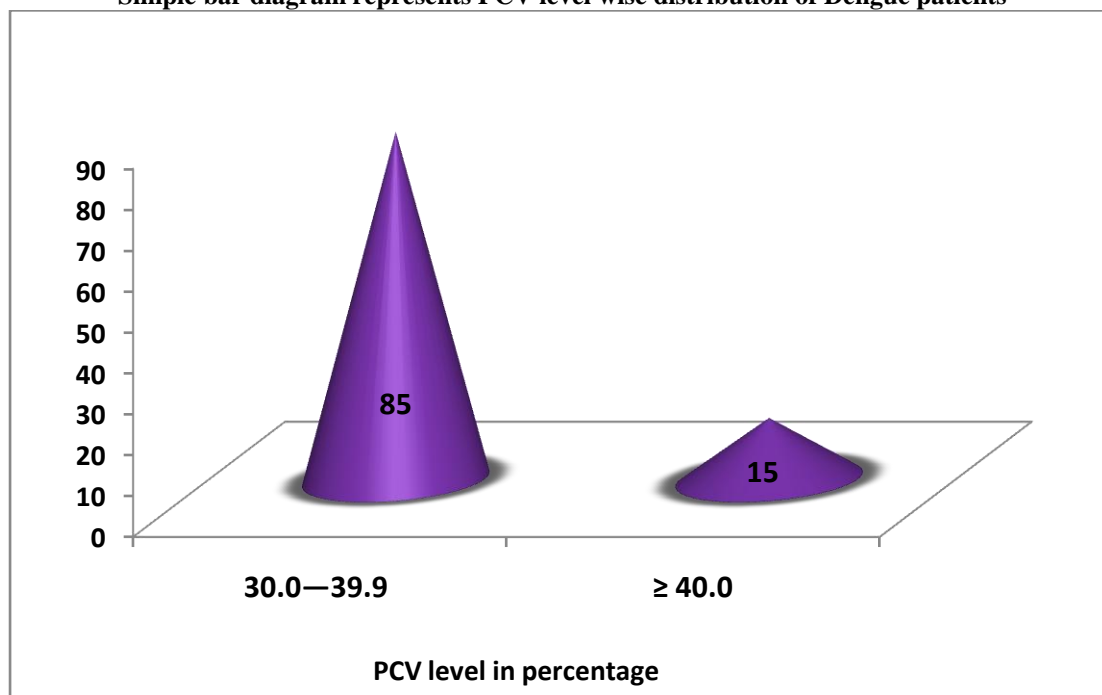**Simple bar diagram represents PCV level wise distribution of Dengue patients**

Table No.11: Renal function test wise distribution of Dengue patients

Renal function	Number of Positive patients	Percentage
Normal	91	91.0
Abnormal	9	9.0
Total	100	100.0

In the study 91 (91.0%) of patients renal function test was normal and 9 (9.0%) of patients renal function test shows abnormal

Pie diagram represents renal function test wise distribution of Dengue patients
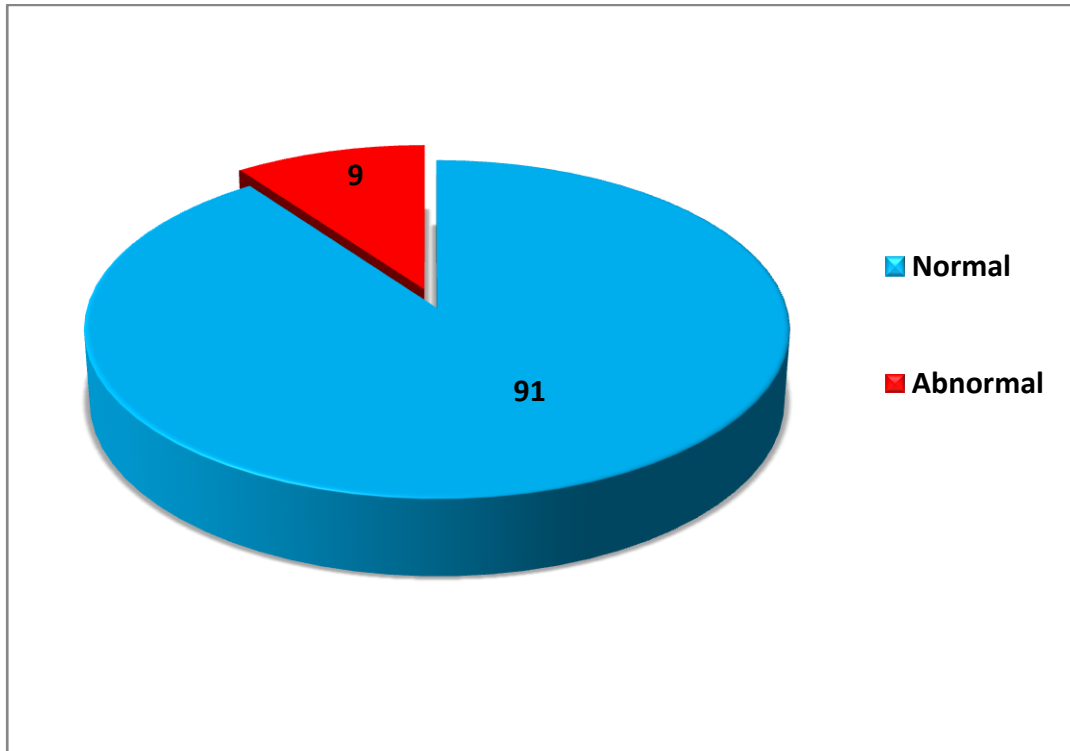
Table No.12: Liver function test wise distribution of Dengue patients

Renal function	Number of Positive patients	Percentage
Normal	90	90.0
Abnormal	10	10.0
Total	100	100.0

In the study 90 (90.0%) of patients liver function test was normal and 10 (10.0%) of patients lever function test shows abnormal

Pie diagram represents renal function test wise distribution of Dengue patients
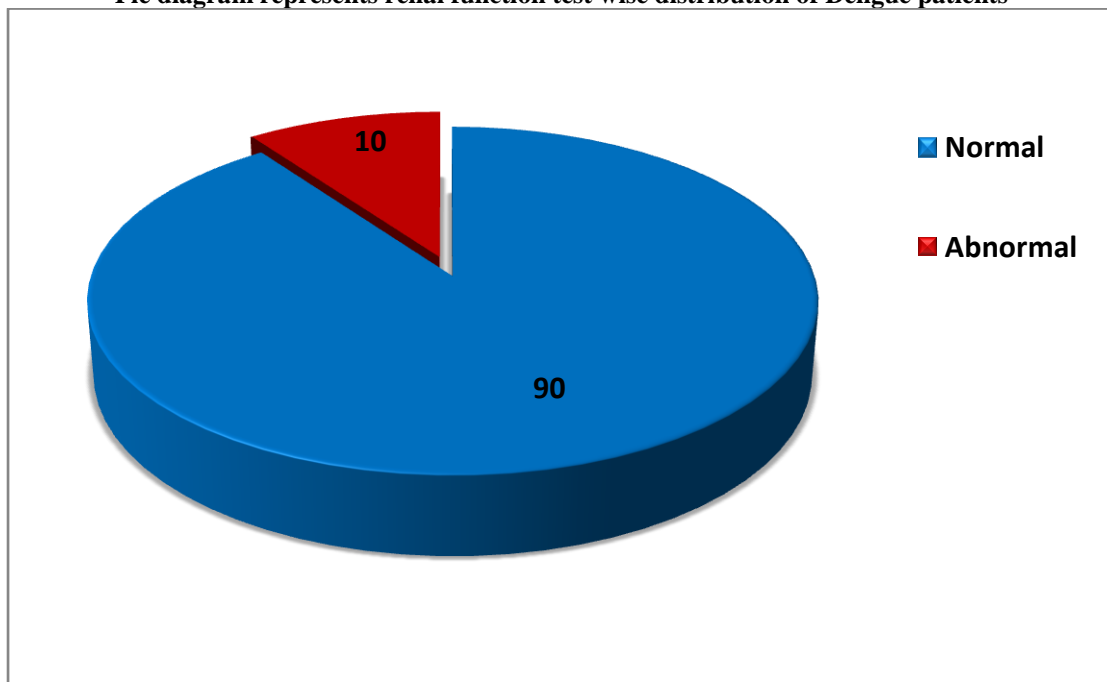
Table No.13: Dengue NS1 and IgM wise distribution of patients

Variables	Number of Positive patients	Percentage

NS1	74	85.0
IgM	26	15.0
Total	100	100.0

In the study 74 (74.0%) of patients were dengue NS1 and 26 (26.0%) of patients were dengue IgM

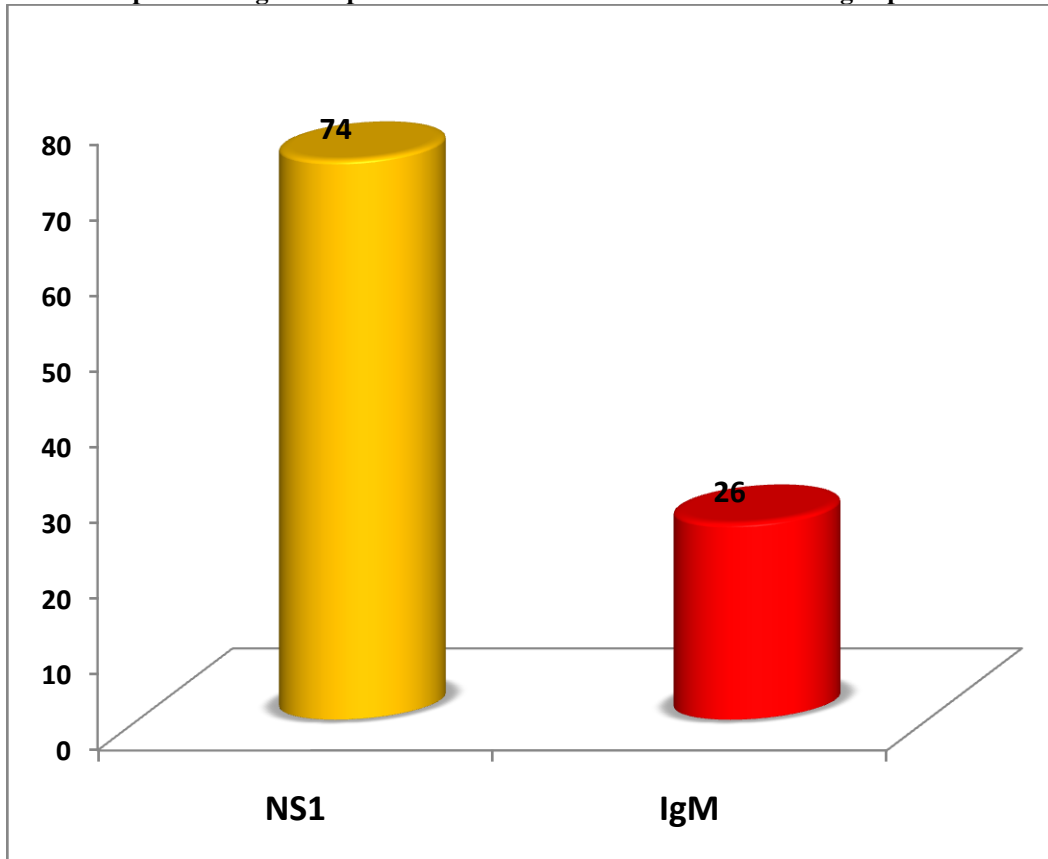**Simple bar diagram represents PCV level wise distribution of Dengue patients**

Table No.14: Complications wise distribution of Dengue patients

Complications	Number of Positive patients	Percentage
Dengue hemorrhagic fever	4	4.0
Polyserositis	11	11.0
Acute kidney infection	1	1.0
Dengue shock syndrome	1	1.0
Encephalitis/CNS complication	1	1.0
Hepatomegaly	1	1.0
Hepatitis	8	8.0

In the study out of 100 dengue fever patients; 79 (79.0%) of patients had no complications and 21 (21.0%) of patients had the complications. Among the 11 (11.0%) of patients had the complication of polyserositis, 8 (8.0%) of patients had the complication of hepatitis and 4 (4.0%) of patients had the complication of dengue hemorrhagic fever

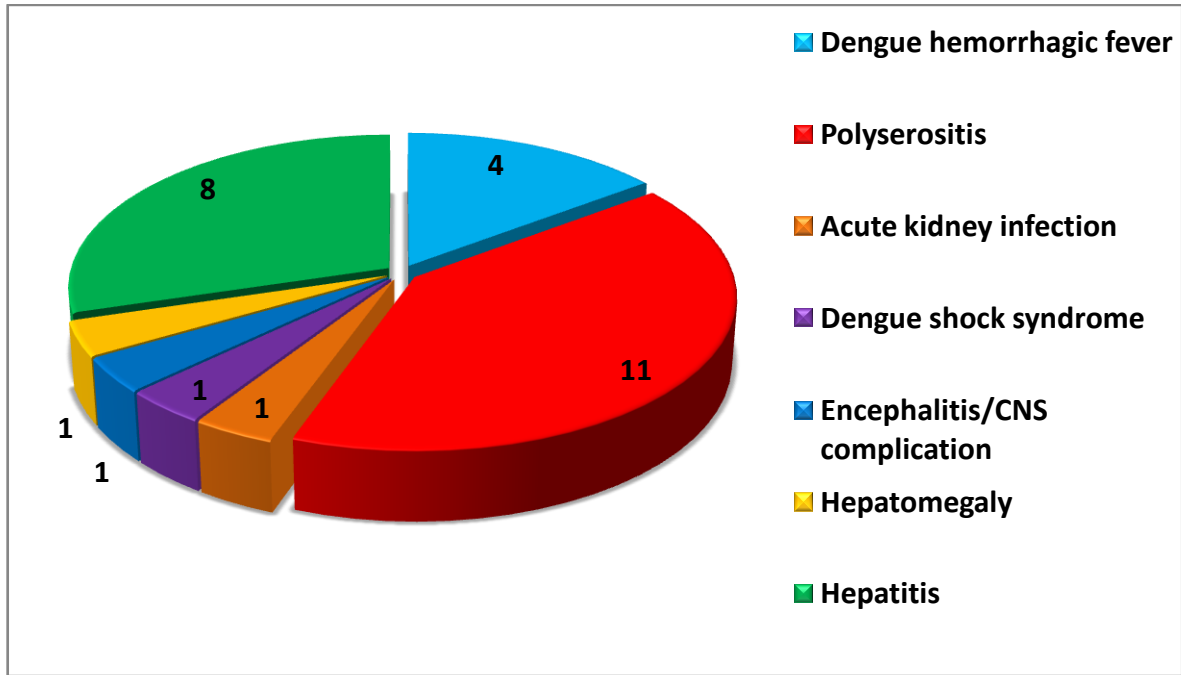**Pie diagram represents complications wise distribution of patients**

Table No.15: USG findings wise distribution of Dengue patients

USG findings	Number of Positive patients	Percentage
Normal	75	75.0
Pericholecystic Oedema	25	25.0
Total	100	100.0

As per USG findings 75 (75.0%) of patients were normal study and 25 (25.0%) of patients diagnosed by USG was pericholecystic oedema. **The hospital prevalence of pericholecystic oedema was 25%**

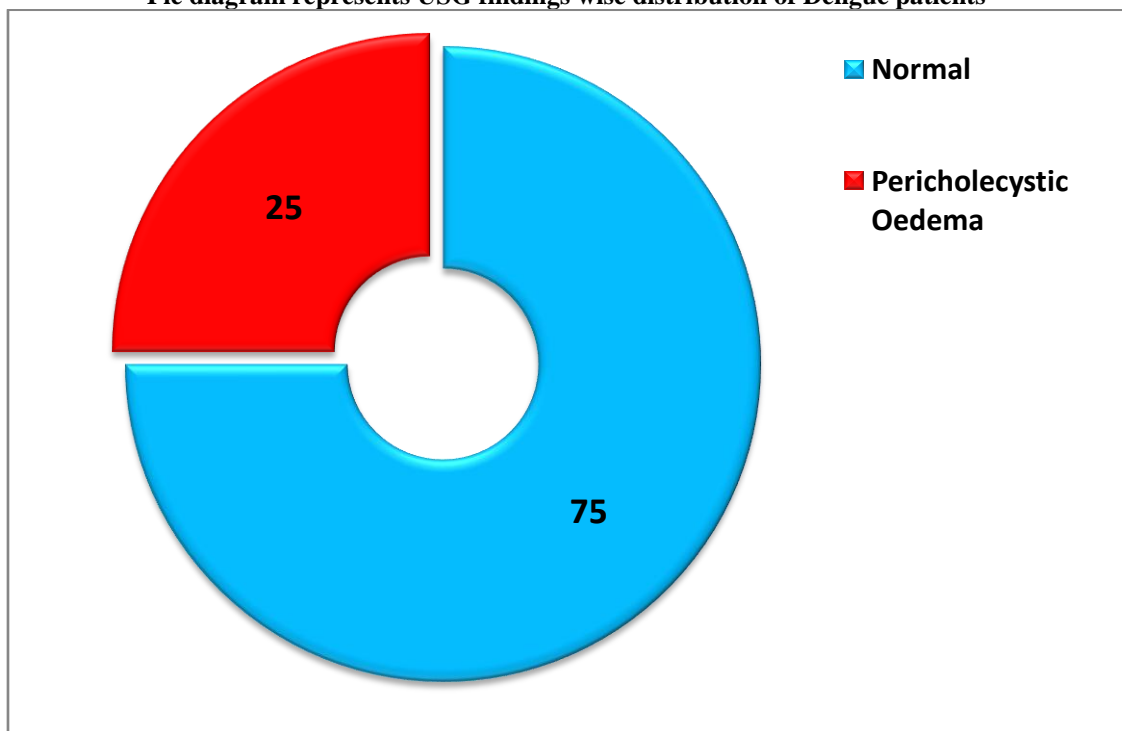**Pie diagram represents USG findings wise distribution of Dengue patients**

Table No.16: Study outcome wise distribution of Dengue patients

Outcome	Number of Positive patients	Percentage

Improved	97	97.0
Expired	3	3.0
Total	100	100.0

Study reveals that, 97 (97.0%) of patients were improved and 3 (3.0%) of patients were expired

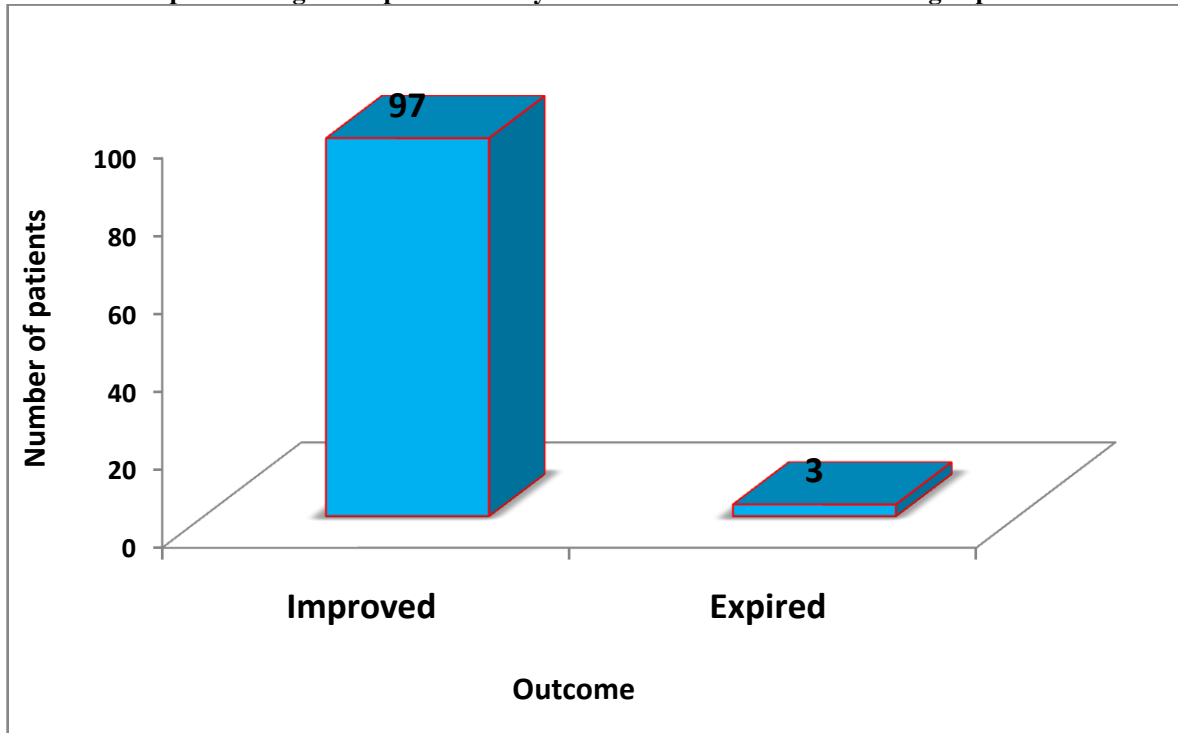**Simple bar diagram represents study outcome wise distribution of Dengue patients**

Table No.17: Comparison of dengue categories with respect to age

Age in years	No.	Diagnosis		
		DF	DHF	DSS
≤ 20	22	13 (59.0%)	6 (27.3%)	2 (9.1%)
21-40	44	35 (79.5%)	6 (13.6%)	3 (6.8%)
41-60	22	16 (72.7%)	5 (22.7)	1 (4.6%)
61-80	12	10 (83.3)	2 (16.7)	0 (0.0%)
Total	**100**	**75**	**19**	**6**
χ2-test value and P-value		χ2 = 4.723 P = 0.163 NS		

NS= not significant, S=significant, HS=highly significant, VHS=very highly significant
There was no statistical significant association of diagnosis with age (P>0.05).

Component bar diagram representscomparison of categories with respect to age
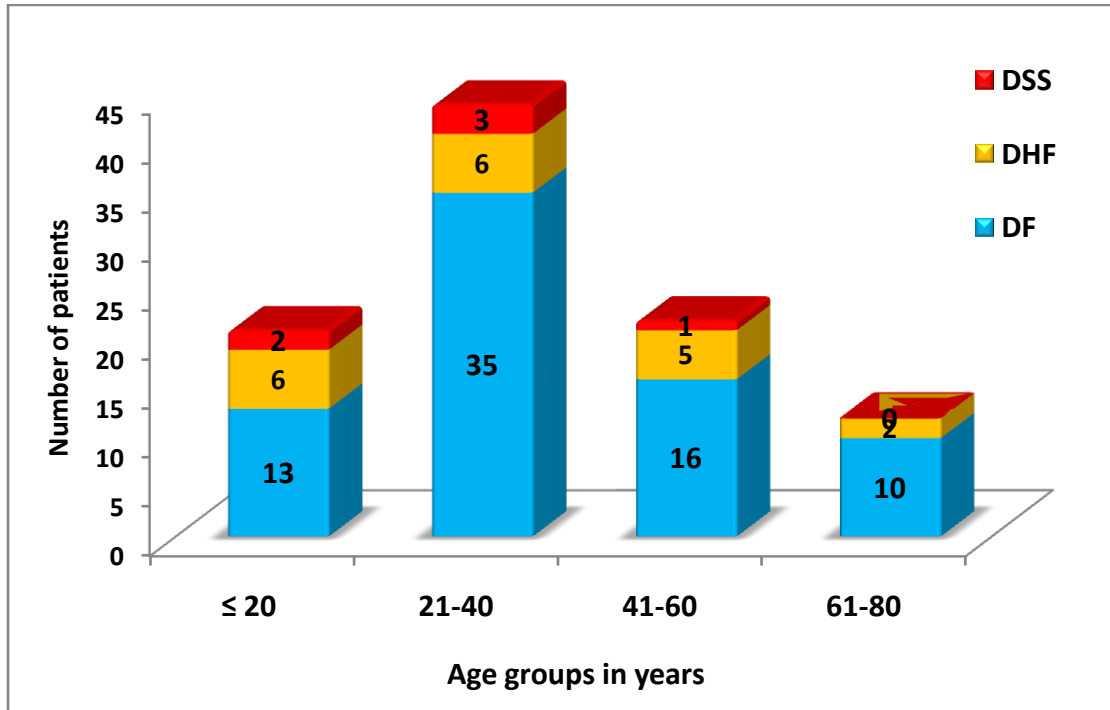
Table No.18: Comparison of categories with respect to gender

Gender	No.	Diagnosis		
		DF	**DHF**	**DSS**
Males	**49**	43 (87.7%)	5 (10.3%)	1 (2.0%)
Females	**51**	32 (62.7%)	14 (27.5%)	5 (9.8%)
Total	**100**	**75**	**19**	**6**
χ2-test value and P-value		$\chi^2 = 8.33$ P = 0.0091 HS		

NS= not significant, S=significant, **HS=highly significant**, VHS=very highly significant
There was statistically highly significant association of diagnosis with gender (P<0.01).
DHF and DSS patients were significantly more in females as compare to males

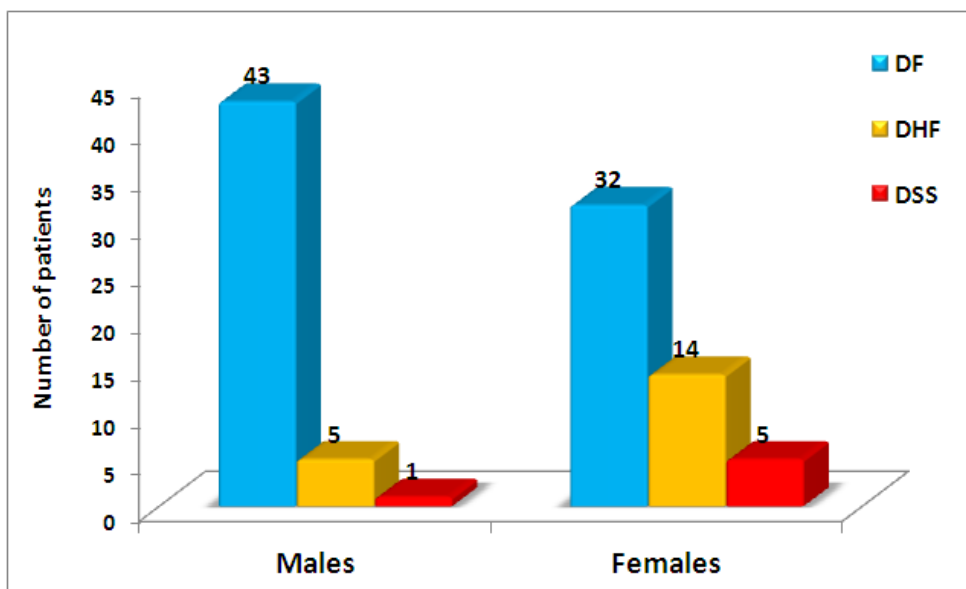**Multiple bar diagram representscomparison of cetagories with respect to age**

Table No.19: Comparison of categories with respect to platelet counts

Platelet count	No.	Diagnosis		
		DF	DHF	DSS
No	100	Mean ± SD	Mean ± SD	Mean ± SD
Mean ± SD	--	99186.6 ± 45277.62	60263.16 ± 36489.14	55166.67 ± 46276.04
ANOVA-test value and P-value		F = 7.668 P = 0.001 VHS		

NS= not significant, S=significant, HS=highly significant, **VHS=very highly significant**
There was statistically highly significant difference of mean platelet count with diagnosis (P<0.001).
In DHF and DSS patients mean platelet count were significantly less as compare to DF patients.

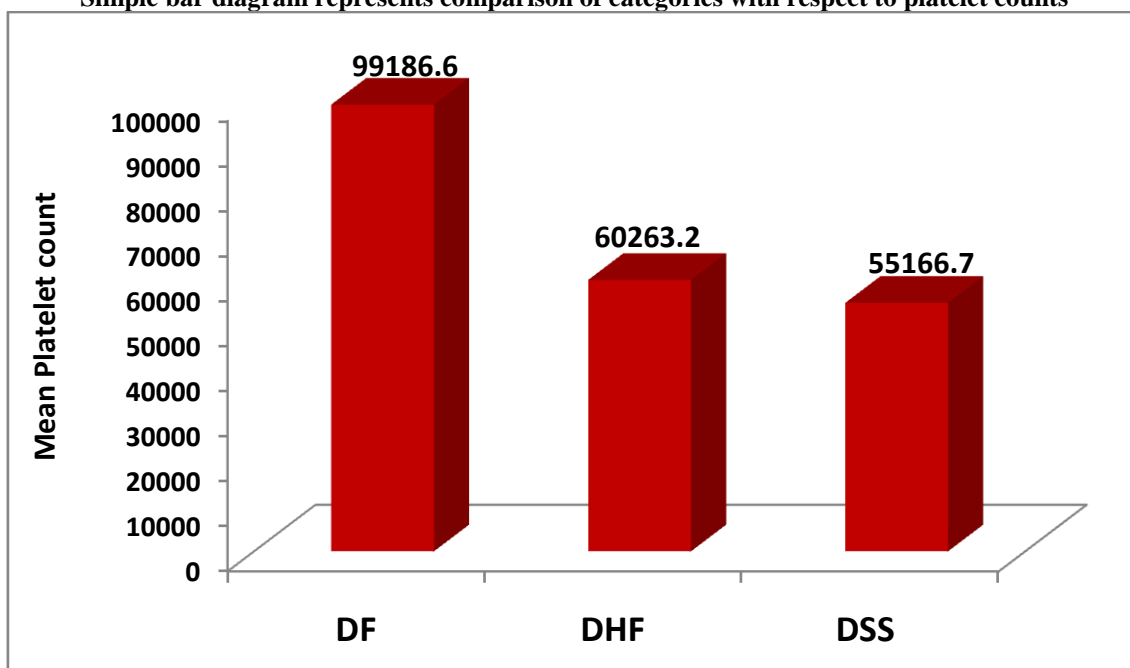**Simple bar diagram represents comparison of categories with respect to platelet counts**

Table No.20: Comparison of distribution of dengue categories with respect to PCV level category in the study

PVC level	No.	Diagnosis		
		DF	DHF	DSS
No	100	Mean ± SD	Mean ± SD	Mean ± SD
Mean ± SD	--	36.90 ± 2.85	39.47 ± 4.03	41.30 ± 4.71
ANOVA-test value and P-value		F = 22.440 P = 0.000 VHS		

NS= not significant, S=significant, HS=highly significant, **VHS=very highly significant**
There was statistically highly significant difference of mean platelet count with diagnosis (P<0.001).
In DHF and DSS patients mean platelet count were significantly less as compare to DF patients.

Simple bar diagram represents dengue categories with respect to mean PCV level category in the study
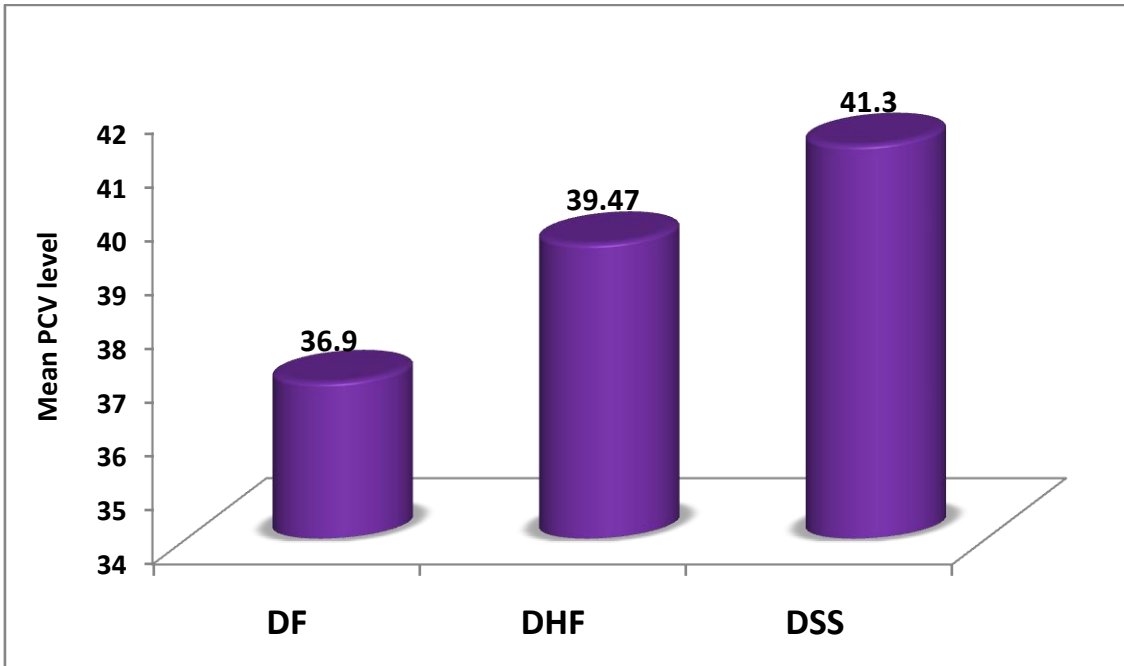
Table No.21: Comparison of dengue categories with respect to outcome

Outcome	No.	Diagnosis		
		DF	DHF	DSS
Improved	97	75 (77.3%)	18 (18.6%)	4 (4.1%)
Expired	3	0 (0.0%)	1 (33.3%)	2 (66.7%)
Total	100	75	19	6
Fisher exact probability value		P = 0.021 S		

NS= not significant, **S=significant,** HS=highly significant, VHS=very highly significant
There was statistical significant association of diagnosis with study outcome (P<0.05).

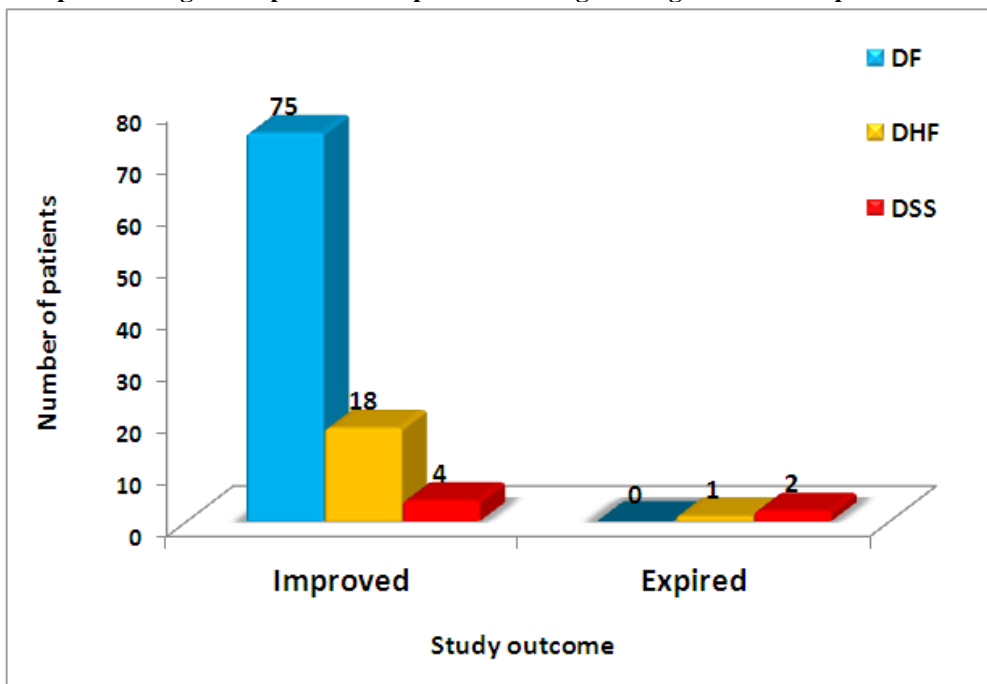**Multiple bar diagram representscomparison of dengue categories with respect to outcome**

Table No.22: Comparison of dengue categories with respect to pericholicystic

Pericholicystic or USG findings	No.	Diagnosis		
		DF	DHF	DSS
Present	25	18 (72.0%)	7 (28.0%)	0 (0.0%)
Normal	75	57 (76.0%)	12 (16.0%)	6 (8.0%)
Total	100	75	19	6
Fisher exact probability value		P = 0.465 NS		

NS= not significant, S=significant, HS=highly significant, VHS=very highly significant
There was no statistical significant association of diagnosis with USG findings orpericholicystic oedema
(P>0.05).

Multiple bar diagram representscomparison of dengue categories with respect to pericholicystic
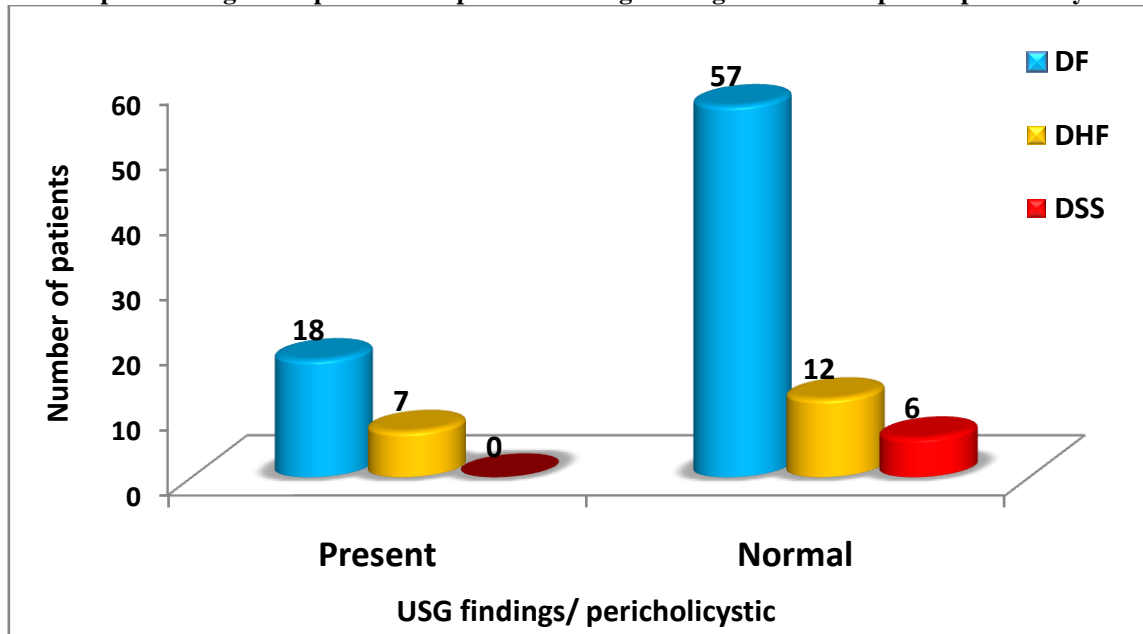

Table No.23: Comparison of outcome of dengue patient with pericholecystic oedema

Pericholicystic or USG findings	No.	Outcome	
		Improved	Expired
Present	25	24 (96.0%)	1 (4.0%)
Fisher exact probability value		P = 0.879 NS	

NS= not significant, S=significant, HS=highly significant, VHS=very highly significant
There was no statistical significant association of USG findings orpericholicystic oedema with study outcome
(P>0.05).

Multiple bar diagram representsoutcome of dengue patient with pericholecystic oedema
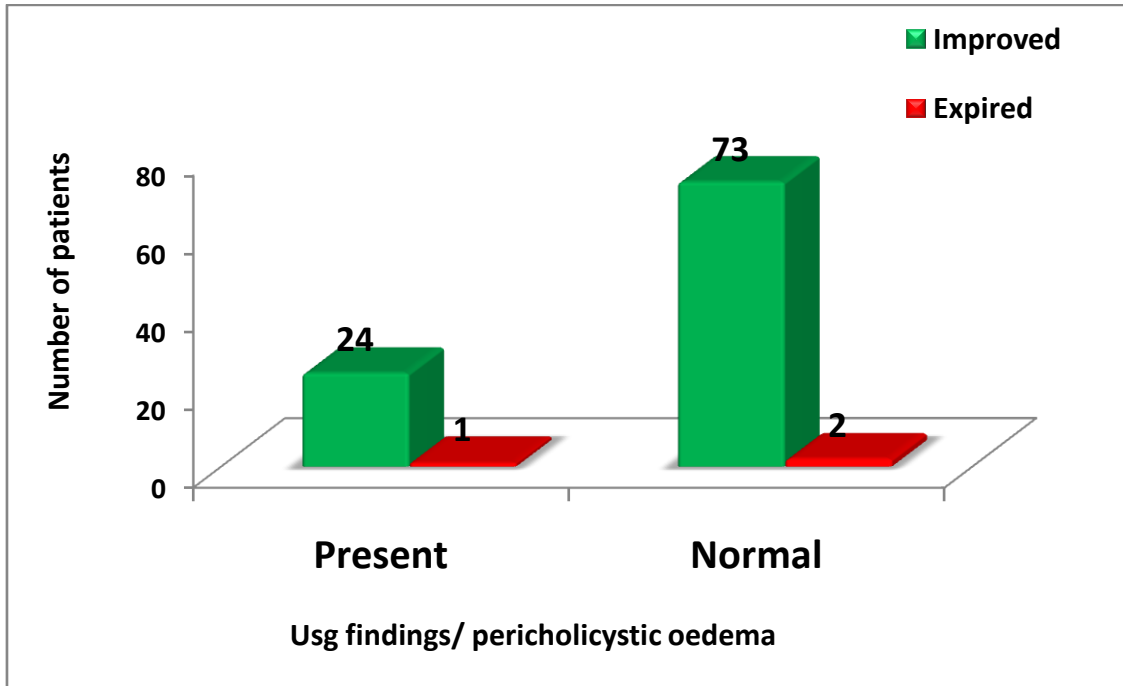
Table No.24: Age wise distribution of pericholicystic oedemapatients

Age in years	Pericholicystic patients	Percentage
≤ 20	6	6.0
21-40	9	9.0
41-60	7	7.0
61-80	3	3.0
Total	25	25.0
Mean ± SD	38.62 ± 16.83	

Study reveals that, out of 100 sample cases 25 (25.0%) cases were pericholicystic patients. Among them 9 (9.0%) of cases were belongs to the age group of 21-40 years…..

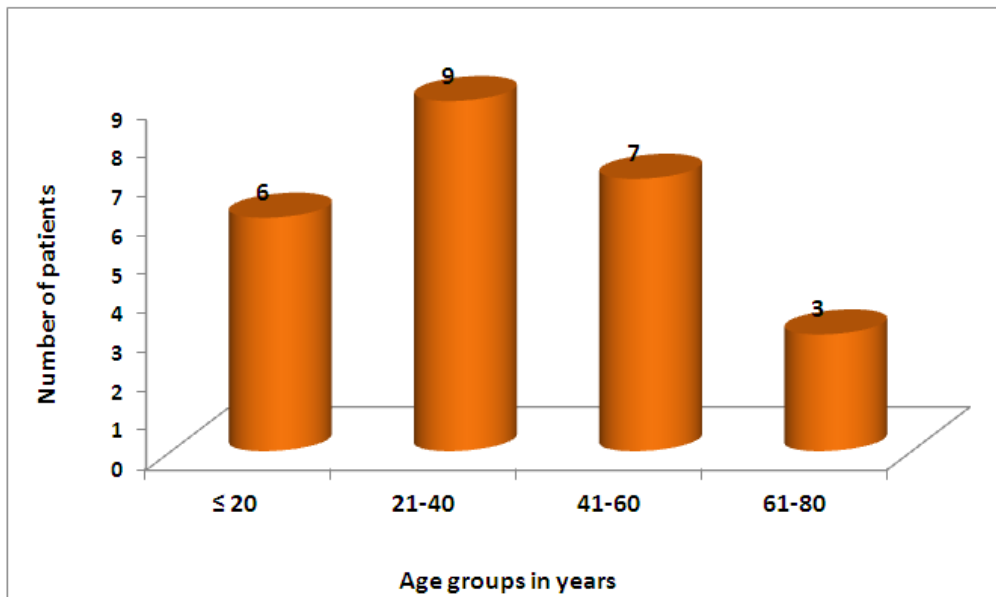**Simple bar diagram represents age wise distribution of pericholicystic oedemapatients**

Table No.25: Gender wise distribution of pericholicystic oedemapatients

Gender	Pericholicystic oedemapatients	Percentage
Male	11	11.0
Female	14	14.0
Total	25	25.0

Study observed that, out of 100 sample patients; 25 (25.0%) of cases were pericholicystic patients. Among them 11 (11.0%) of patients were males and 14 (14.0%) of patients were females.

Pie diagram represents gender wise distribution of pericholicystic oedemapatients
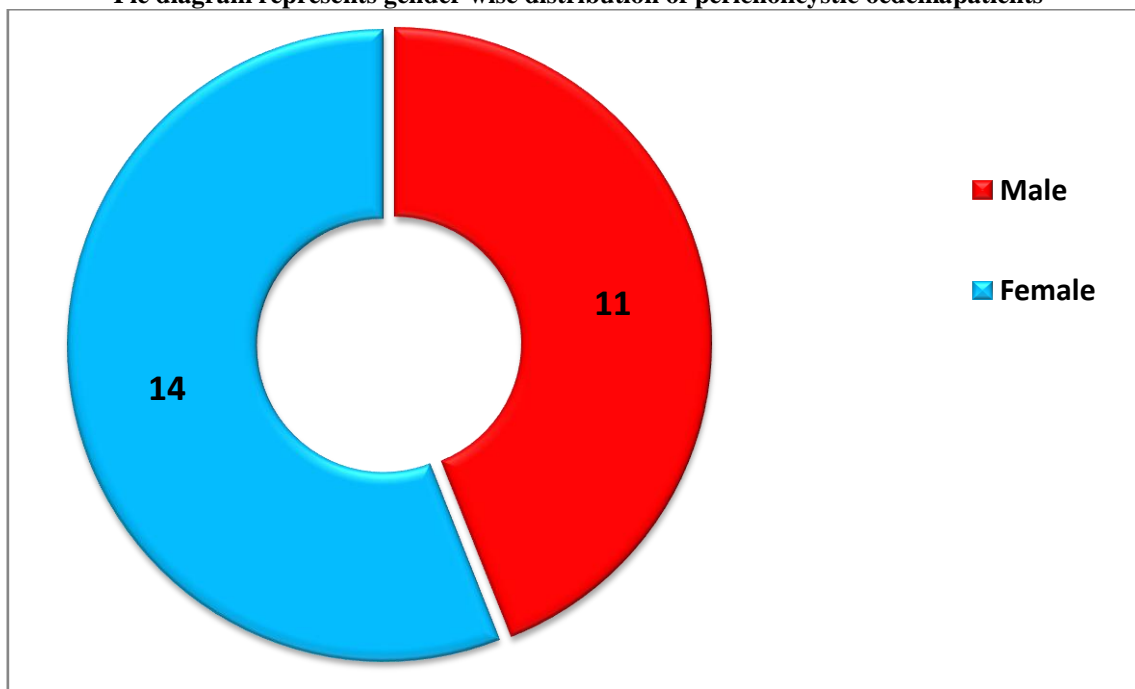
IV. Discussion

Dengue fever is a common arbo-viral disease, presenting as febrile illness with constitutional symptoms. More serious form of presentation being – dengue haemorrhagic fever and dengue shock syndrome. Sometimes though the disease presents in an unusual mode of presentation – fulminant hepatitis, encephalopathy, cardiomyopathy, acute pancreatitis, acute acalculouscholecystitis.

Our study focused on one of such unusual presentation of DF – acute acalculouscholecystitis - the frequency, clinical features, prognosis, clinical response of acute acalculouscholecystitis in dengue fever. DF presenting with pain abdomen being the one which strongly raises the possibility of acute acalculouscholecystitis. On examination fever, right upper quadrant pain and tenderness, positive murphy's sign, on further evaluation with USG findings noted - positive sonographic murphy's sign (defined as maximum tenderness of the sonographically localized gallbladder), pericholecystic fluid collection, and no stone(s) in the gallbladder, these findings help diagnose the condition. Confirmation of the diagnosis done by identification of IgM antibody against dengue antigen or by demonstrating four-fold increase in serial IgG antibody testing. In our study 25 percent of patients developed this complication.

The pathogenesis of acute acalculouscholecystitis proposed: cholestasis and increased bile viscosity from prolonged fasting, spasms of the ampulla of vater, infection, endotoxemia, microangiopathy, and ischemia-reperfusion injury. The pathophysiologic change in DF being - increased vascular permeability, causing plasma leakage and polyserositis.

Out of 100 dengue patients, 25 had acalculouscholecystitis. The incidence was found to be 25%. Similar studies have been conducted in various parts of the world. **Keng liana wu et al.** found the incidence of acalculouscholecystitis to be 28%.[3] In another study done by **S Khanna et al**, the incidence was 16.36%.A retrospective study from **Taiwan** of 131 patients with dengue fever has shown that acalculouscholecystitis occurred in about 7.63% of cases. A prospective study by **Sharma et al.** showed 14 out of 27 patients (51.8%) of DF with acalculouscholecystitis . This showed that there was a significant association of acalculouscholecystitis with severe dengue (DHF and DSS). The exact pathophysiology in the development of acalculouscholecystis in dengue is unknown. Some experts in this field suggested cholestasis and increased bile viscosity from prolonged fasting , spasms of the ampulla of vater, infection ,endotoxemia , microangiopathy and

ischaemia- reperfusion injury.The main pathophysiologic change in dengue fever could be increased vascular permeability causing plasma leakage and serous effusion with high protein content, which then induces thickening of gall bladder wall.

A study conducted by **Sreeramulu et al** in **Sri Devaraj medical college in Kolar, India** showed that all the dengue patients with acalculouscholecystitis recovered fully with conservative line of management with none requiring any surgical intervention.[4]

Cholecystitis typically presents with fever, RUQ pain and tenderness, positive murphy's sign. On USG positive sonographic murphy's sign, pericholecystic fluid collection, thickened gall bladder wall. If these findings are reached, it warrants cholecystectomy. But when same features along with dengue positive are present, the course usually resolves by itself, not requiring any surgical intervention. Conservative management is sufficient to manage this condition. If without proper diagnosis surgery is undertaken then chances of it landing in complication is pretty high as DF can be associated with thrombocytopenia, shock, haemorrhage, which can complicate the clinical situation . In our series all the patients were managed conservatively and all of them responded well without any complication. Thus we want to deduce that management of acute acalculuscholecystitis in dengue fever patients is to be along conservative line.

V.   Conclusion

In dengue patients, acalculouscholecystitis is not uncommon and is usually self-limiting and resolves with conservative management only .Conservative treatment is required in the form of adequate hydration, antipyretics, antibiotics and platelet transfusion in cases of severe thrombocytopenia. Cholecystectomy is not required in cases of dengue fever complicated by acalculouscholecystitis. Role of ultrasonography has a supporting role in dengue fever. Abdominal ultrasound should be mandatory in cases of dengue fever as it helps in clinical diagnosis as well as for early detection of complications. In dengue endemic areas, it is important that typical and atypical presentations of dengue fever are recognized early before the development of complications.

In dengue fever patients, acute acalculouscholecystitis is not uncommon and is usually self-limiting and resolves with conservative management only and the gall bladder thickness return to normal after several days. Conservative treatment is required in the form of adequate hydration ,antipyretics and platelets transfusion in cases of severe thrombocytopenia.

Cholecystectomy is not required in cases of dengue fever complicated by acalculouscholecystitis. Role of ultrasonography has a supporting role in dengue fever. Abdominal ultrasound should be mandatory in cases of dengue fever as it helps in clinical corelation

Acute acalculuscholecystitis is one of the most common atypical presentations in patients with dengue fever being seen in about 25 percent of patients. Conservative line of management with antibiotics, intravenous fluids, analgesics, regular monitoring is sufficient in managing this complication with no need for surgical intervention.

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