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Research Article

C - reactive protein In Patients with Diagnoses of Cholecystitis

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ABSTRACT

Objective: This research paper aims at the finding of a mutual association and relation of C-Reactive protein in the patients with cholecystitis.

Study Design and Setting: The nature of the study is observational case-control and it is completed in the Surgical Department of LUMHS.

Duration: The research study was completed in almost eight months commencing from December, 2015 and completed in May, 2016.

Methodology: For the confirmation of cholecystitis, expert sinologist carried out complete clinical tests including ultrasound. All those patients were included having any other comorbidities related to C-Reactive protein enhancement.For the measurement of C-Reactive protein level blood tests were sent to diagnostic lab. A self-designated form was used for the collection of data that included C-Reactive protein, clinical characteristics, gender and age etc.

Results: The selected total of 120 cases were bifurcated into 2 groups such as Group “A” consisted of sixty cases with cholecystitis and Group “B” also consisted of sixty cases but normal in nature. Both the groups were equally distributed. Mean ages of both the groups i.e. Group “A & B” was 40.32+5.3 and 38.12+4.5 years respectively. In total sample seventy-five percent were female that equals to forty-five in number, remaining were male. A significant relation was observed in the CRP elevated level and the patients with cholecystitis when compared to normal cases. A value of 0.001 was noted as p-value. The C-Reactive protein was elevated in forty-five cases out of sixty cases that equals to 75%. On the other hand, in normal cases CRP level enhancement was observed in only two cases out of sixty cases. Fourteen patients had enhanced WBC count, sixteen patients had fever, eighteen patients had signs of murphy and fifty-five patients had pain in the upper right quadrant. These number of multiple symptoms equals to 23.33%, 26.33%, 30% and 91.66% respectively.

Conclusion: Cholecystitis patients have close relation with high rate of CRP serum in comparison to normal cases. It is therefore concluded that for the detention of acute cholecystitis CRP elevation is a useful diagnostic instrument.

Key Words:cholecystitis, Diagnosis and C-Reactive Protein.

INTRODUCTION

All the patients with a history of gallstones symptoms also reflect a tilt to cholecystitis as a complexity in the disease of gallstone created ordinarily. An acute cholecystitisa disorder in the pain of upper right quadrant, leukocytosis and temperature increase in relation to gallbladder inflammation also identified with the illness of gallbladder [1].An in-time examination of cholecystitis and timely cure can diminish the chances of mortality and morbidity. A specific criterion is required for the indication of cholecystitis in patients. This criterion is also indicative in nature. An acute cholecystitis has visible identification factor over acute

cholangitis. It may demand a rapid treatment specially in the cases of emphysematous and gallbladder torsion, cholecystitis of supportive nature or gangrenous[2]. Gallbladder calculi causes acute calculouscholecystitis in a condition where basest are greater than twenty million Americans per year and the expenditure on this are more than 6.3 billion dollars[3]. In most of the cases of cholecystitis, they are asymptomatic in nature. It also creates one to four percent of biliary colic per year. If the cases are not treated in time than acute cholecystitis creates twenty percent of these symptomatic patients. There is another tendency in the similar natured cases for established degree in comparison to non-complicated cholelithiasissymptoms. Females form the sixty percent of these cases. On the other hand, Acute Cholecystitis is responsible for the gallstone commonness and cholecystitis of extreme nature in males. Typical and atypical cases demand correct and timely diagnosis. Multiple nations do not consider the measurement of CRP. With a measured value of CRP equal to 3 md/dl, it is linked with Acute Cholecystitis. In this CRP measured level, Acute Cholecystitis has PPV, specificity, and sensitivity such as 95%, 76% and 97% respectively. In the tissue inflammation C-Reactive protein is regarded as best diagnostic instrument for screening [5].For the chronic disease diagnostic prognostic, prescient, reflector treated and biomarker disease action diagnostic instruments are also employed [6, 7].An un-diagnosed cholecystitis can cause potential complexities. Few research studies are held in this perspective. The principle objective of under hand research paper is also targeted on the relation between cholecystitis and CRP level.

METHODOLOGY

The nature of the study is observational case-control and it is completed in the Surgical Department of LUMHS.The research study was completed in almost eight months commencing from December, 2015 and completed in May, 2016. The selected total of 120 cases were bifurcated into 2 groups such as Group “A” consisted of sixty cases with cholecystitis and Group “B” also consisted of sixty cases but normal in nature. Both the groups were equally distributed. Mean ages of both the groups i.e. Group “A & B” was 40.32+5.3 and 38.12+4.5 years respectively. In total sample seventy-five percent were female that equals to forty-five in number, remaining were male. For the confirmation of cholecystitis, expert sinologist carried out complete clinical tests including ultrasound. All those patients were excluded having any other comorbidities related to C-Reactive protein enhancement. For the measurement of C-Reactive protein level blood samples were sent to diagnostic lab. A self-designated form was used for the collection of data that included C-Reactive protein, clinical characteristics, gender and age etc. Both the cases normal and cholecystitis were compared for the measurement of CRP level. Data was entered in SPSS V. 20 for the calculation and computation of SD and mean for the onward age calculation. For non-elevated and elevated CRP levels, symptoms, signs, gender and age groups frequency and percentage were calculated.Significant p-value was noted as 0.05 and Chi-Square was applied for the comparisons of the test results and variable comparison.

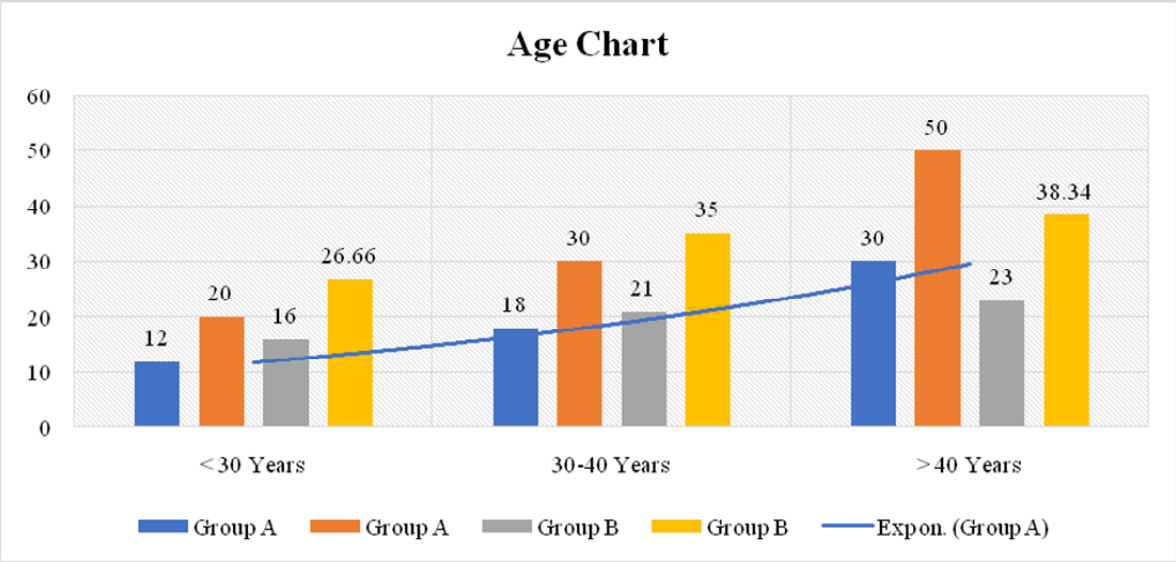
RESULTS

The selected total of 120 cases were bifurcated into 2 groups such as Group “A” consisted of sixty cases with cholecystitis and Group “B” also consisted of sixty cases but normal in nature. Both the groups were equally distributed. Mean ages of both the groups i.e. Group “A & B” was 40.32+5.3 and 38.12+4.5 years respectively. Age groups were formed as < 30 and 30-40 years having the number of cases as 12 and 18 respectively. Percentage of both the age groups was 20% and 30% respectively. Sub-group “A” formed seventy-five percent of females and twenty-five percent males, 45 and 15 in number respectively. Whereas a total of thirty-seven

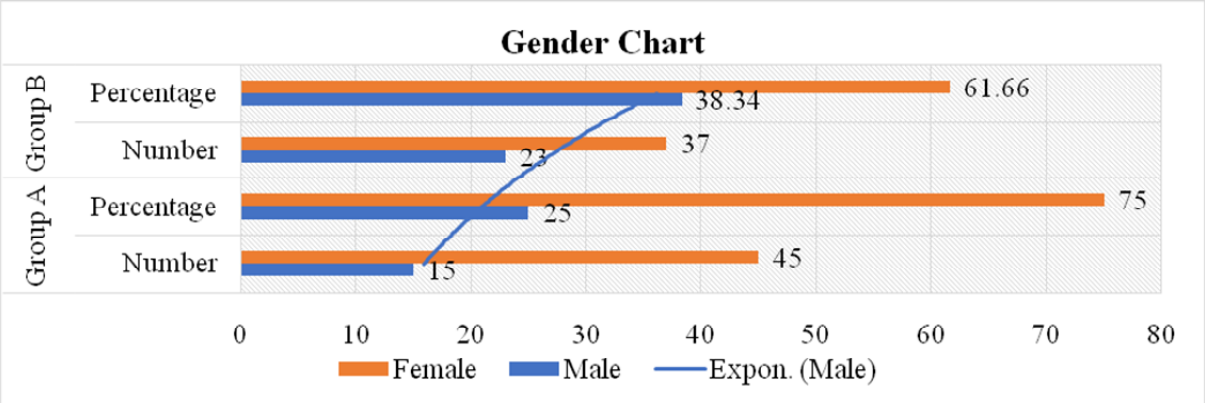
females out of sixty were in sub-group "B". (Table-I)

Table 1: Gender and Age classification of the cases (n= 60)

n=60 for Group A & B					
Age	Group A		Group B		P-Value
	Number	Percentage	Number	Percentage	
< 30 Years	12	20	16	26.66	0.42
30-40 Years	18	30	21	35	
> 40 Years	30	50	23	38.34	
Mean age group A (cholecystitis)			Mean+SD=40.32+5.3 years		
Mean age group B (control)			Mean+SD=38.12+4.5 years		



Gender	Group A		Group B		P-Value
	Number	Percentage	Number	Percentage	
Male	15	25	23	38.34	0.11
Female	45	75	37	61.66	

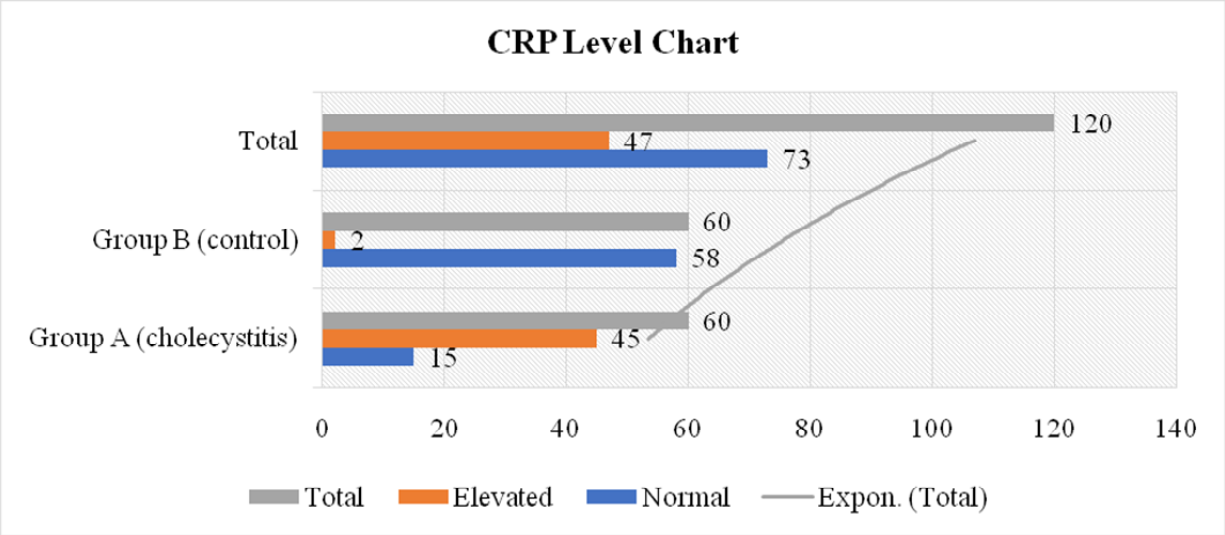


In the scholastic research paper, the associated significance of CRP level was associated with the cases having cholecystitis in comparison with the normal cases. P-Value was observed as 0.001. Raise in the

level of C-Reactive protein of Group “A” was noticed as seventy-five percent i.e. 45 cases out of 60 reflected the same result as mentioned. The same rate was two out of sixty in normal cases. (Table-II)

Table II:CRP level Comparison in patients with controls and cholecystitis (n=120)

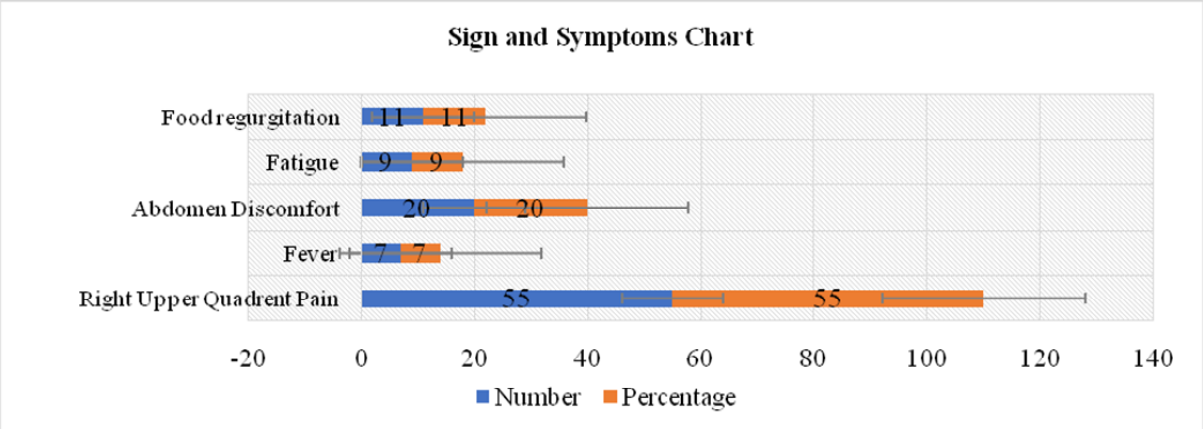
CRP Level	Group A (cholecystitis)	Group B (control)	Total	P-Value
Normal	15	58	73	0.001
Elevated	45	2	47	
Total	60	60	120	

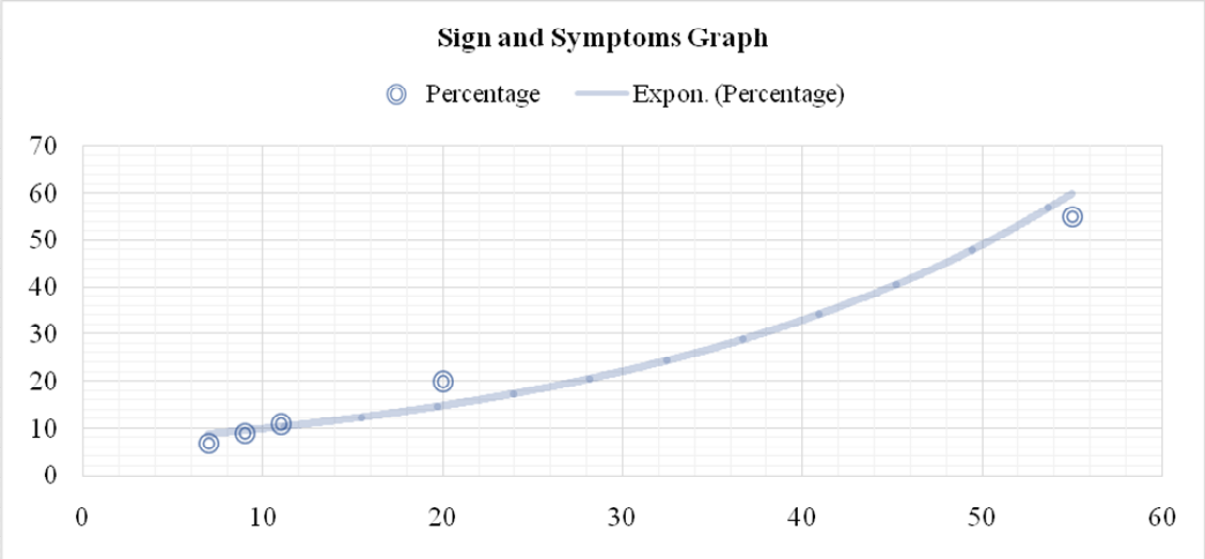


The under hand scholastic research paper also reflects, fourteen patients had enhanced WBC count, sixteen patients had fever, eighteen patients had signs of murphy and fifty-five patients had pain in the upper right quadrant. These number of multiple symptoms equals to 23.33%, 26.33%, 30% and 91.66% respectively. Fatigue factor was also notices in fifteen percent of the cases. (Table-III)

Table III: Symptoms & Sign of patients with cholecystitis (n=60)

Sign and Symptoms	Number	Percentage
Right Upper Quadrant Pain	55	55
Fever	7	7
Abdomen Discomfort	20	20
Fatigue	9	9
Food regurgitation	11	11





DISCUSSIONS

In the cases of surgery of abdomen in the elder age groups there is a trend of hospitalization due to acute abdomen is attributed to the diseases of gallbladder in adults. [8] Acute Cholecystitis acts as a syndrome in the clinical pathological states,it has its range on one end as cholecystitis [9]. In the scholastic research paper, the associated significance of CRP level was associated with the cases having cholecystitis in comparison with the normal cases. P-Value was observed as 0.001. Raise in the level of C-Reactive protein of Group "A" was noticed as seventy-five percent i.e. 45 cases out of 60 reflected the same result as mentioned. The same rate was two out of sixty in normal cases. [5] It is also reported by Juvonen in his comparative findings that gangrenous has a significant relation with elevated rate of CRP level concentration. Few of the research studies also reflect the elevation of CRP in cholecystitis.

Cases also exhibit the indication of enhanced WBC count, patients had fever, patients had signs of murphy and patients had pain in the upper right quadrant. In Acute Cholecystitis elevated level CRP, temperature, WBC and inflammation was observed. CRP level is also regarded as indicating factor of AC when linked with necrosis tissue with a reading of more than 10 mg/dl. [10] For the diagnosis of cholecystitis CRP has no role to ply is also reported in numerous studies; whereas, it may indicate the complexity of cholecystitis. In few other studies > 100 mg/L of CRP concentration is directly associated with local necrosis tissue. [11, 12] Few other studies also reflect > 100 mg/L for sepsis diagnosis and threshold concentration, but without the mention of any cut-off value [13].

According to Gurbulak EK [14], in the grade two cases of AC a significant elevation of CRP is notices as greater than or equal to 70.65 mg/L in grade one and at grade three the concentration of CRP is greater than or equal to 198.95 mg/L, grade three has a linked with AC.Our current study selected total of 120 cases were bifurcated into 2 groups such as Group "A" consisted of sixty cases with cholecystitis and Group "B" also consisted of sixty cases but normal in nature. Both the groups were equally distributed. Mean ages of both the groups i.e. Group "A & B" was 40.32+5.3 and 38.12+4.5 years respectively. Sub-group "A" formed seventy-five percent of females and twenty-five percent males, 45 and 15 in number respectively. Whereas a total of thirty-seven females out of sixty were in sub-group "B".Siddiqui [15] also observed the same findings in his study as out of 193 females, 27 were with cholecystitis with a mean age of 32.3±5.3 years, which is less than the mean age of our research study. On the other hand,Soomro [16] stated 442 females and 79 males with a count of mean age of forty-seven years. This calculated mean as is comparable with current

research study. In the same way, Gillani [18] taken a mean age of 42.7 years in his research study on the same issue.

The under hand scholastic research paper also reflects, fourteen patients had enhanced WBC count, sixteen patients had fever, eighteen patients had signs of murphy and fifty-five patients had pain in the upper right quadrant. These number of multiple symptoms equals to 23.33%, 26.33%, 30% and 91.66% respectively. Fatigue factor was also notices in fifteen percent of the cases. Same findings are proposed by Gurbulak [14] in the case of AC as most of the patients reported pains in the epigastrium area and upper right quadrant with additional pain in abdomen. This pain of AC is constant and severe in nature with additional signs of habitual food intolerance, nausea, vomiting and anorexia. The food intolerance is normally cause one hour before the pain starts. There is an absolute obstruction in the cystic duct due to AC. Assault of biliary colic is also possible if the pain sustains for more than six hours, it is severe and constant in nature. Added with fever it is potential enough to stimulate AC in opposition to biliary colic. [18] belching, bowels, irregulates, after meals pains, without nausea pains and food intolerance are indications of non-evocativeness of biliary etiologies.

CONCLUSION

Cholecystitis patients have close relation with high rate of CRP serum in comparison to normal cases. It is therefore concluded that for the detention of acute cholecystitis CRP elevation is a useful diagnostic instrument. It is recommended that the further probe is required for the strong and absolute finding for conformation of CRP as diagnostic instrument in the gallbladder inflammation.

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