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RESEARCH ARTICLE

SONOGRAPHIC ASSOCIATION OF GALLSTONES WITH FAMILY HISTORY AMONG ADULTS.

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Gallbladder, Gallstone disease, Positive history, Negative history.

Abstract

Background: Gallstones represent a significant burden for health care systems worldwide and are one of the most common disorders presenting to emergency room. The most widely recognized indication of gallstones is right hypochondriac (RHC) or epigastric pain. Ultrasonography are procedure of choice in suspected gallstones. It is most sensitive, specific, non-invasive and inexpensive test for the detection of gallstones.
Objective: To determine the sonographic association of gallstones with family history among adults.
Material and Methods: A cross-sectional study were carried out at the Department of Radiology in Lady Reading Hospital Peshawar, Pakistan. Duration of study were from Feb 2018 to July 27, 2018. All data was analysis by Statistical Software for Social Sciences (SPSS version 24). Mean and standard deviation (SD) were calculated for continuous variables. Frequency and percentages were calculated for categorical variables.
Results: Total 126 were diagnosed and pre-operative cases of gallstone existing in the study. There were 16 (12.7%) men and 110 (87.3%) women. Age ranged from 19 to 80 with mean 43.62 ± 10.92 years. RHC or epigastric pain were present in all patients 126 (100.0%). Patients with positive family history of gallstone disease is 45 (35.7%) and negative family history is 81 (64.3%).
Conclusions: These data suggest that family factors are responsible for at least 35.7% of symptomatic gallstone disease. However, the true role of heredity in gallstone pathogenesis is probably higher because data based on symptomatic gallbladder disease underestimates the true prevalence in the population.

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Introduction:-

Gallbladder is a gastrointestinal organ situated inside the RHC region of the abdomen. This intraperitoneal, pear-molded sac exists in a fossa framed between the inferior aspects of the right and quadrate lobes of the liver. The primary function of the gallbladder is to focus and store bile, which is produced by the liver.[1] Gallstone disease (GSD) can be defined as the "presence of one or more stones in the gallbladder"[2]. Furthermore, is a standout amongst the most well-known scatters among patients presenting to emergency rooms with abdominal anxiety e.g.,

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RHC or epigastric pain, sickness, vomiting, loss of appetite[3]. Ethnicity and family qualities are perceived as contributing variable[3]. They can happen because of the super immersion of bile, cholesterol precipitation, hindered gallbladder capacity and debilitated of entero-hepatic flow of bile acids[5].The incident of gallstones sickness is decidedly identified with propelling ages, as gallstones are unordinary in people more youthful than 30 years[6] usually with the frequency running from 10% to 20% of the total populace.Every year around 500,000 cholecystectomies were done in (USA)[1].The information from Pakistan has observed to be rare, however past examination on southern Sindh zone of Pakistan has revealed a surgical incidence of 9.03%[7]. The frequency of gallstones was discovered numerous folds higher in women when contrasted with men and this expansion was all the more amid childbearing stage.[8] There are two types of stones, cholesterol stones and shade (pigmented) stones, cholesterol stone are pure saturated fat, mixed stone, combined stone. Pigment stone are black stone, brown stone[9]. Black pigment stones comprise of 7-10% calcium bilirubinate and brown pigment stones are formed because of disease which change over dissolvable bilirubin into insoluble state prompting development of delicate soft brown stones[10].

GSD chance elements are multifactorial, which incorporates maturing, sexual orientation, pregnancy, equality, overweight and obesity. Risk factors associated with cholelithiasis in the West include gender (F > M), age, obesity[11, 12]. The risk of disease increases with age interval. It is claimed that females are two times more prone to this disease than males. A well-known reminder for retaining the risk factors corresponded with gallstones is woman, obese, fertile and forty[13].

In Pakistan, late years has seen an expanding pattern in the quantity of gallstone cases in Southern Sindh, Pakistan[14, 15]. The recognizable proof of the segments of gallstones is basic as it gives information that could be useful for practitioners to find out the underlying cause of gallstone patients therapeutically or surgically.[16] Unfortunately, gallstone arrangement is heterogeneous, and varies inside and among the populaces around the world[17, 18].

Ultrasonography is the most sensitive and reasonable test for the exposure of gallstones. It is highly specific and sensitive (>95%). A characteristics sonographic of gallbladder full of stones will appear wall echo shadowcomplex sign or echogenic mass with shadowing. Because of high echogenicity of the anterior wall of the gallbladder, superficial stones are visible while deeper stones and posterior gallbladder wall are not unmistakable[19].

Ethics Committee Approval:
This study was approved by scientific Researchers Ethical Committee of The University of Lahore.

Informed Consent:
Written informed was obtain from the participants of this study.

Conflict of Interest:
The authors declared no conflict of interest.

Financial Disclosure:
The authors declared that this study received no financial support.

Inclusion Criteria

1. All male and female patients having gallstone with certainty family history
2. All normal male and female without gallstones.

Material And Methods:-

A cross-sectional study were carried out at the Department of Radiology in Lady Reading Hospital Peshawar, Pakistan. Period of study were from Feb 2018 to July 27, 2018. A total of one hundred and twenty six (126) patients were included in the study.

The scanning of gallstones were performed through Mindray DC 70, with frequency range 2.5 – 3.5 MHZ. Observations made on gray scale ultrasound machine.

Descriptive analyses were made to explore the conveyance of data. Mean and standard deviation (SD) were computed for continuous variables. Recurrence and rates were figured for all out factors. All data were analysis by Statistical Software for Social Sciences (SPSS version 24)

Results:-

There were 126 patients in this study. The Mean Age of patients were 43.62 ± 10.92 years. The minimum age were 19 years and the maximum age were 80 years (Table 1).

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age (Year)	126	19	80	43.62	10.929
Valid N (listwise)	126				

Table 1:-Descriptive Statistics of Variables

Out of 126 patients, 110 (87.3%) were females and 16 (12.7%) males (Table 2).

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
female	110	87.3	87.3	87.3
male	16	12.7	12.7	100.0
Total	126	100.0	100.0	

Table 2:-Gender wise distribution

69 female and 9 males patients were negative family history while 41 female and 7 males having positive family history (Figure 1).

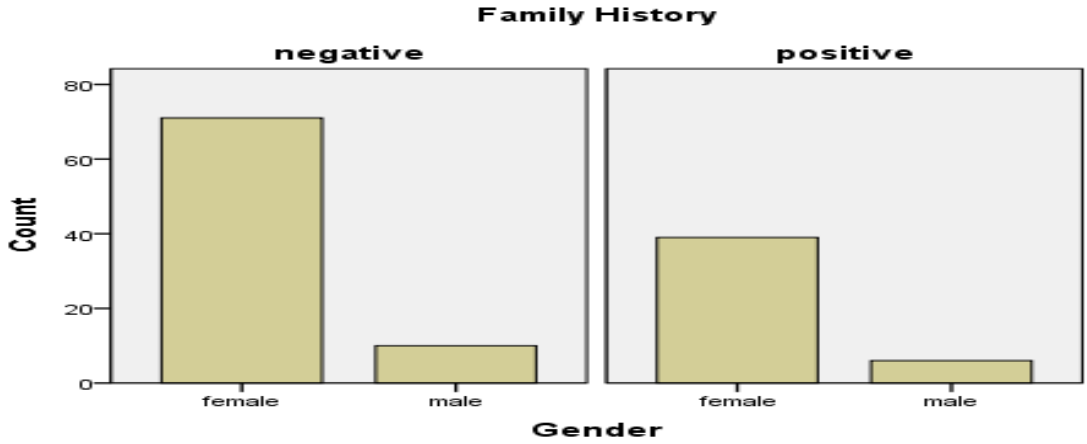


Figure 1:-Gender with family history

According to table 3, Right hypochondriac (RHC) or epigastric pain were present in all patients 126 (100.0%).

Right hypochondriac (RHC)/ Epigastric Pain				
	Frequency	Percent	Valid Percent	Cumulated Percent
present	126	100.0	100.0	100.0

Table 3:-Symptoms wise distribution

According to figure 2, 81 patients were negative family history and 45 patients were positive family history with right hypochondriac or epigastric pain.

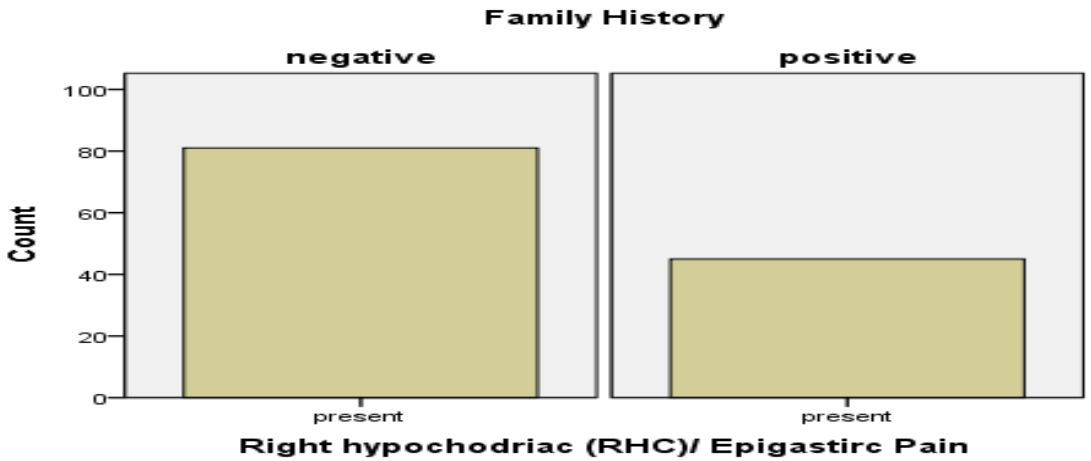


Figure 2:-Family history with Right hypochondriac or epigastric pain

According to table 4, Loss of appetite were present in 13 (10.3%) patients and absent in 113 (89.7%) patients out of 126.

Loss of appetite				
	Frequency	Percent	Valid Percent	Cumulated Percent
absent	113	89.7	89.7	89.7
present	13	10.3	10.3	100.0
Total	126	100.0	100.0	

Table 4:-Symptoms wise distribution

According to figure 3, 71 patients have no symptom of loss of appetite and 10 patients have symptom of loss of appetite with negative family history and 43 patients having positive family history but no symptom of loss of appetite while 2 patients were symptom of loss of appetite with positive family history.

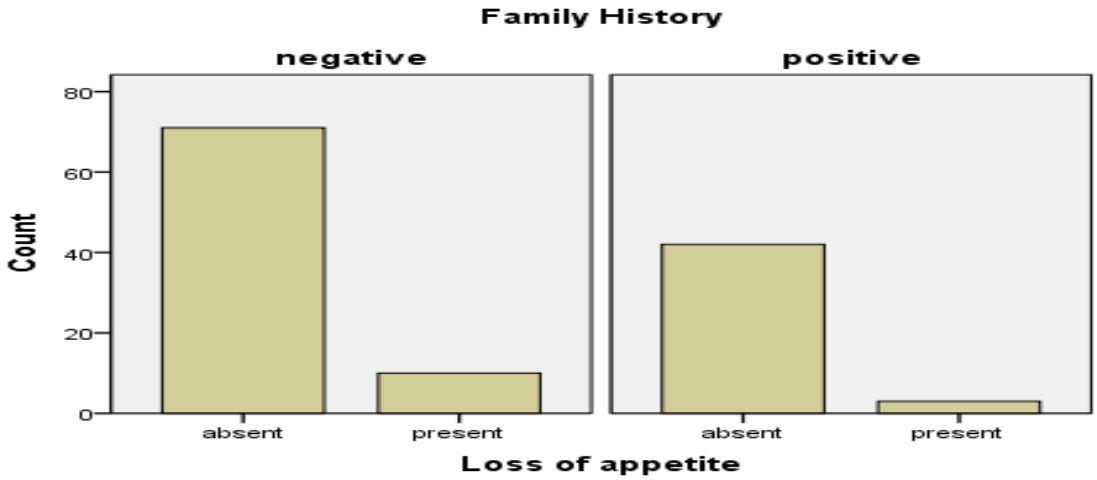


Figure 3:-Loss of appetite with family history

Out of 126 patients, Vomiting/Nausea were present in 105 (83.3%) patients and absent in 21 (16.7%) patients (Table 5).

Vomiting /Nausea				
	Frequency	Percent	Valid Percent	Cumulated Percent
absent	21	16.7	16.7	16.7
present	105	83.3	83.3	100.0

Total	126	100.0	100.0	

Table 5:-Symptoms wise distribution

According to figure 4, 66 patients vomiting/Nausea symptom were present and 15 patients Vomiting/Nausea symptom were absent but patients have negative family history and in 37 patients Vomiting/Nausea symptom were present and 8 patients were absent this symptom patients having positive family history.

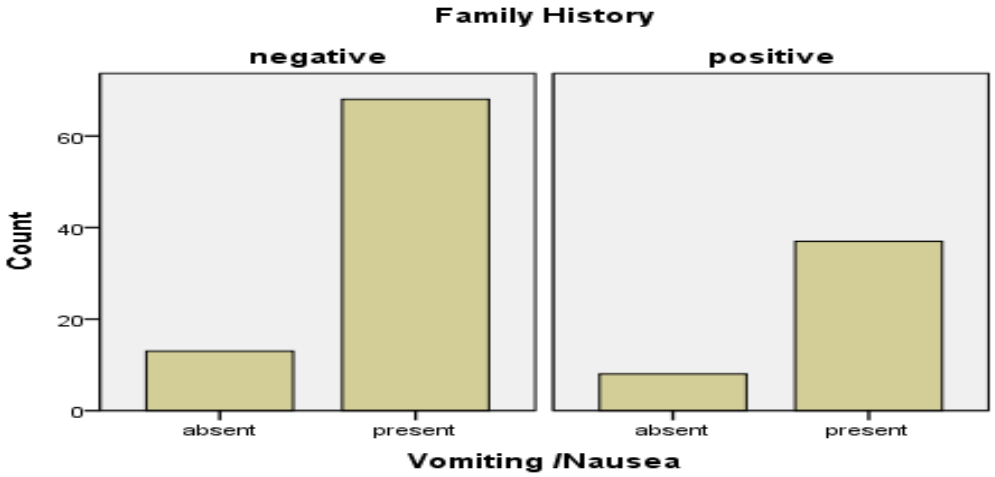


Figure 4:-Vomiting/Nausea with family history

According to table 6 and figure 5, 17 patients were no gallbladder stone in which 2 patients have clinically diagnosis while sonographically have no stone with negative history and 15 patients have positive history while 109 patients were gallstone 79 patients have negative history and 30 patients have positive history.

Family History * Diagnosis Cross tabulation				
		Diagnosis		Total
		absent	present	
Family History	Negative	2	79	81
	Positive	15	30	45
Total		17	109	126

Table 6:-Family history cross tabulation

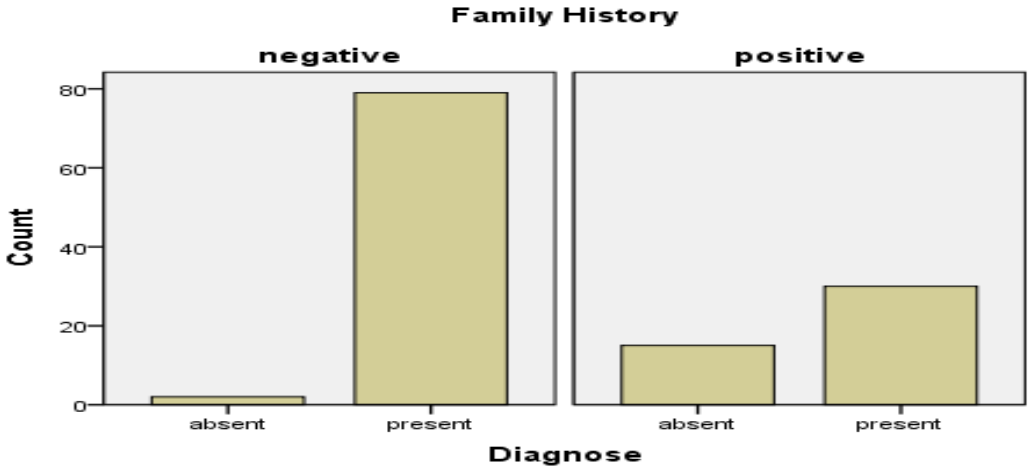


Figure 5:-Family history

According to table 8, there were 81 (64.3%) patients having negative family history and 45 (35.7%) patients were positive family history total of 126 patients.

Family History					
		Frequency	Percent	Valid Percent	Cumulative Percent
	negative	81	64.3	64.3	64.3
	positive	45	35.7	35.7	100.0
	Total	126	100.0	100.0	

Table 7:-Frequency wise distribution of family history

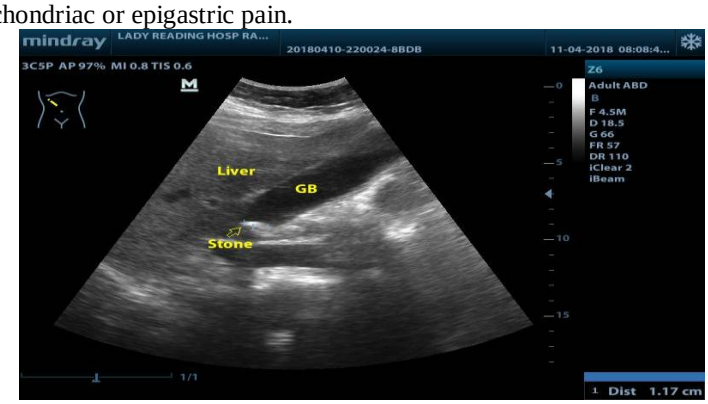
According to table 9, Out of 126 patients, 17 (13.5%) patients were absent of gallstones and 109 (86.5%) patients were present of gallstones.

Diagnosis					
		Frequency	Percent	Valid Percent	Cumulative Percent
	absent	17	13.5	13.5	13.5
	present	109	86.5	86.5	100.0
	Total	126	100.0	100.0	

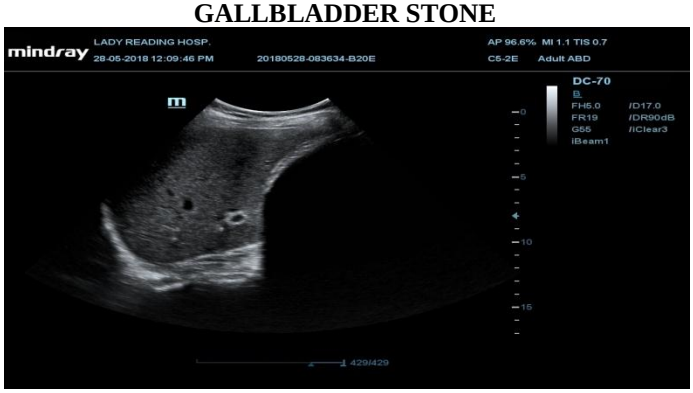
Table 8: Frequency wise distribution of Diagnosis

Discussion:-

The current research were designed to determine the sonographic association of gallstones with family history among adults. According to current study the prevalence of gallstones with family history were 35.7%. The results of my study were comparable with the result of the research conducted by Attila Nakeeb et al[20], 2002 the purpose of his study was control a huge genetic section adds to the pathogenesis of symptomatic gallstones. The outcome demonstrated that the suggestion study major risk factors for symptomatic gallstone sickness were woman gender (P < 003), obesity (P < 001), age > 50 (P < 001), and family history of past cholecystectomy in a 1st grade relative (P < 01). In the family examine the added substance genetic heritability of symptomatic gallstones were 29% (P<02). Toward the end he reasoned that these data recommend that genetic factors are accountable for at least 30% of symptomatic gallstone disease. In my study positive family history of gallstone is associated with expanded risk of biliary stone and Ultrasonography is quite often a decent starting decision for distinguishing gallstones in patients experiencing right hypochondriac or epigastric pain.



GALLBLADDER STONE



WALL ECHO SHADOW COMPLEX SIGN OF GALLBLADDER

The result of my study shows that there were very close relation between gallstones and positive family history 35.7%. Ultrasonography is almost always a decent beginning decision and is uncomplicated circumstances, might be all that is required. So my study agrees with the others study that apart from the affectability and specificity of ultrasound, it is non-invasive, readily available, portable and inexpensive. It is therefore justified to use ultrasound as first line modality in the adults to rule out gallstones.

Conclusion:-

According to this study, females numerous folds higher when contrasted with males and this expansion was all the more amid childbearing age. There were very close relation of gallstones with positive family history.

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