Original Article

# TO DETERMINE THE IMPORTANCE OF AGE AND SEX IN THE CLINICAL PRESENTATION AND SUBSEQUENT OUTCOME IN CHOLILITHIASIS.

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**ABSTRACT**

**Objectives:**

To determine the importance of age and sex in patients of gall stone disease and surgical complications.

**Place and duration of Study:**

Department of surgery Madina Teaching Hospital Faisalabad.

**Period:** Jan, 2012 to Oct 2012.

**Methodology:**

Data was obtained by standard data collection Proforma. All patients of gall stone disease admitted in surgical ward and operated on elective list were included. Males and females were divided into different groups with age less and more than 25 years. Outcomes of surgery in both sex and age groups recorded.

**Study Design:**

Observational study.

**Results:**

Total number of patients were 200.Male to female ratio was 5:1. Twenty two (11%) were of less than 25 years and 178(89%) were more than 25 years. One hundred forty three patients (71.5%) were symptom free at the time of presentation and they underwent laparoscopic cholecystectomy. Fifty seven(28.5%) presented with acute cholecystitis and given conservative trial before definitive surgery. Superficial wound infection was found to be the commonest complication.

**Conclusion:**

Incidence of gall stone is increasing in young and male patients. The rate of complications and conversion to open cholecystectomy is more in males as compared to females but it can be decreased with good patient selection, better preparation, understanding of the disease and surgical skills.

**Key words**: Cholelithiasis, Gall stone complications, Age and sex in gall stones.

## INTRODUCTION

A gallstone is crystalline concretion formed within the gallbladder by accretion of bile components. Gallstones can vary in size and shape from as small as a grain of sand to as large as a golf ball.[1] Most stones are composed of cholesterol.Cholestrol gall stones are more common in western females[2]. The composition of gallstones is affected by age, diet and ethnicity.[3]In bile, cholesterol is in equilibrium with bile salts and with phosphatidylcholine.

These calculi are formed in the gallbladder but may distally pass into other parts of the biliary tract such as the cystic duct, common bile duct, pancreatic duct, or

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ampulla of Vater. Rarely, in cases of severe inflammation, gallstones may erode through the gallbladder into adherent bowel (cholecysto- enteral fistula) resulting in gall stone ileus[4] .There is an increase prevalence of gall stones in females. The frequency of gall stones increases with age although familial incidence remains unproven but a positive family history is more often obtained[5,6]. A well-known mnemonic for memorizing the risk factors associated with gallstones is female, fat, fertile and forty; which has been proven by various studies. Established risk factors are age, female gender, obesity, high cholesterol intake, decreased fibre intake, smoking, high parity, a family history of gallstones and decreased physical activity[7- 15] .Gallstone disease is regarded as a surgical disease as cholecystectomy is the cure, but by identifying possible risk factors this could help in designing therapeutic as well as preventive strategies[16]. However keeping in mind the great socio-economic burden of this disease and the fact that majority of Pakistani people live in rural areas where healthcare facilities are not available proper educational programmes should be encouraged. Early reports demonstrated an increased incidence of gall stones in females taking oral contraceptives but more recent studies are unable to confirm this[17].

**Gall Bladder stones**

Age and sex determines the outcomes of patient and the severity of disease. Gallbladder perforation is a rare complication of cholecystitis. The high morbidity and mortality rates associated with this condition are due to delay in diagnosis and treatment since signs and symptoms of perforation do not differ significantly from those of uncomplicated cholecystitis[18].

Carcinoma gallbladder had been observed as a complication and remained a disease of the elderly [19]. A radical and aggressive approach is needed for potentially curative surgery but offers a chance only if it is detected at an early stage. **[20-23.]**

## MATERIALS AND METHODS

This study was conducted at department of surgery Madina Teaching Hospital Faisalabad from Jan-oct 2012. Two Hundred patients with gallstone disease during this period were admitted to surgical department for treatment. Patients with acute cholecystitis, biliary colic or asymptomatic gallstones irrespective of age & sex were included in the study. Symptoms free patients underwent for laparoscopic cholecystectomy (Lap Chole). Patients with acute cholecystitis were operated after trial of conservative therapy. All patients were investigated for fitness. (HB, LFT's, HBsAg, HCV, Urea, Creatinine, Chest X-ray, ECG). Laparoscopic cholecystectomy was performed in all patients. Hospital stay, complications and conversion rate were recorded.

**Data collection procedure**:

A standardized data performa was used to record the information including patient detail, especially age, sex and clinical presentation, surgical procedure and post operative complications.

**Inclusion criteria:**

Patients having gall bladder disease admitted to surgical ward with either sex or age groups.

**Exclusion criteria**:

1. Patients presenting in outdoor but not willing for admission or surgery.

2. Cholecystectomies performed in association with abdominal operations, pancreatitis or biliary malignancies.
3. Unfit patients.

## RESULTS

Two hundred patients were included in the study. Out of these 166(83%) were females and 34(17%) males. Seventeen males (50%) presented with acute cholecystitis and 2 with biliary colic. These (19) were treated with medicines (antibiotics, analgesics and intravenous fluids) and discharged for interval cholecystectomy to be done after 6 weeks.

**Table 1**

| Sex | Male | Female |
|---|---|---|
| Acute cholecystitis | 17 | 40 |
| Severe biliary colic | 2 | 18 |
| Elective surgery | 15 | 108 |
| Total (200) | 34 | 166 |

Fifteen males underwent laparoscopic cholecystectomy. Lap chole was performed in 108(65%) females (out of 166 females) while 58(35%) were initially managed conservatively before definite surgery (table 1).

Twenty two patients 22(11%) were less than 25 years (20 females and 2 males). These patients were further enquired and investigated for hemolytic anemia and hereditary spherocytosis .None of these patients were having any abnormality. Out of these 22, eleven (50%) females had positive family history (Table 2). Z

One hundred & seventy eight (89%) patients were above 25 years (32 males &146 females).Most of the patients (60%) were between 25-45 years. Family history of gall stones was present in18 (10%). Two females presented with empyema gall bladder in which conservative trial had to be stopped and emergency surgery was done (Table 2)

**Table 2**

| Total patients | Sex | | Pts <25 years | | Pts >25 years | |
|---|---|---|---|---|---|---|
| 200 | Male | 34 | Male | female | Male | Female |
| | Female | 166 | 2 | 20 | 32 | 146 |
| Acute cholecystitis | | | None | 11 | 17 | 29 |
| Severe biliary colic | | | None | 2 | 2 | 15 |
| Efmpyema gall bladder | | | None | None | None | 2 |
| Elective surgery | | | 2 | 7 | 13 | 102 |

Laparoscopic procedure had to be converted into open in 11(5.5%). Commonest postoperative complication was wound infection (2.5%).Iatrogenic bile duct injury in one patient was re-explored and repaired with T-tube insertion. Slipping of clip observed in one patient and immediate reclipping was done. One patients with post operative collection was aspirated under ultrasound guidance and managed conservatively. (Table 3)

**Table 3 Complications and rate of conversion**

| Total patients | Sex | Conversion cholecystectomy | Wound infection | Slipping of clip | Iatrogenic bile duct injuries | collection |
|---|---|---|---|---|---|---|
| 11 | Male | 4 | 1 | None | None | None |
| | female | 7 | 4 | 1 | 1 | 1 |

## DISCUSSION

Cholelithiasis or gallstones is a common disease in which hard stones are composed of cholesterol or bile pigments. Most cases are asymptomatic at the time of presentation.

Costanza chiapponi et al[18] narrated that acute cholecystitis occurred in 2% of asymptomatic gall stones but our study showed that 26.5 %( 40 females and17 males) were with acute attack. Most of these acutely presented patients were with 2nd or 3rd attacks. They were not taking proper treatment nor diagnosed previously as a case of gallstones.

Bogue etal study had shown a female predominance with increasing age especially in middle age which is consistent with our study[24].The female to male ratio was reported 4:1 in younger patients which is also consistent with our study(4.8:1).

The occurrence of gallstones disease is positively related to advancing age, as gallstones are unusual in persons younger than 30 years [6,25] but our study narrated that significant numbers of patients were below this age(11%)[26.] Another study by Volzke showed that 85.4% patients were female and it has been previously documented in many studies that being female is the single most important non-modifiable cause of gallstones [10, 11] . In our study this figure was 80%.Our study showed that the problem is increasing in males (20%). The most identified factors in these males were found to be dietary habits and obesity[27].

The incidences of gallstones are 8% and 20% for persons above 40 and 60 years respectively in Pakistan[28].however in our study 45(22.5%) were above 50years,133(66.5%) were between 25-50 years and 22(11%) were below 25 years. Despite this increase in incidence, little preventive work has been done to decrease the number of gallstone cases [15,16].

Unhealthy lifestyle and decreased physical activity were major risk factors for gallstones. It had been proven that 34% of symptomatic gallstone disease in men could have been prevented by endurance exercise of upto 30 minutes per day and five times per week [29] A study in Boston showed no significant association between gallstone disease and energy intake when adjusting for intake of cholesterol, animal fat, animal proteins, carbohydrates or sucrose [30]

Old age and male gender with acute cholecystitis were found to be important risk factors for conversion into open cholecystectomy[31,32]. Rate of conversion was 18% in males and 4% in females. Laparoscopic management of acute cholecystitis may still be associated with increased risks of complications such as bile duct injury and abscess formation.[33] However in our study only 11 patients were converted into open cholecystectomy and none of these were with acute attack. Common Bile Duct dilatation was most common cause for conversion in our study. According to Samer A kanan et al, 4% of laparoscopic cholecystectomy were converted into open cholecystectomy however in our study it was 5.5%. This is slightly higher. The reason behind this higher percentage may be the late presentation of the patient and recurring attacks of acute cholecystitis.

The complications rate in our study was 4% which is less as compared to other reported in literature.[34,35] The most common complication was found to be the port site superficial wound infection. The unhygienic status of the umbilicus and infected bile leakage from the gallbladder while extracting from abdomen may be the probable cause of these infections.

Young males with cholelithiasis have been found to be associated with hemolytic anemia's and hereditary spherocytosis, however in our study no young patient have been found to be associated with these diseases. [36]

## CONCLUSION

The incidence of gall stone is increasing in young and male patients. The rate of complications and conversion to open cholecystectomy is more in males as compared to females but it can be decreased with good patient selection, better preparation, understanding of the disease and surgical skills.

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