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Research Article

**RISING FREQUENCY OF GALLBLADDER STONES IN
MULTAN AND ADJOINING AREAS (PAKISTAN)**

Dr. Muhammad Aqeel, Dr Kamran Abid, Dr Muhammad Fawad Khan

Nishtar Hospital Multan, Pakistan

Abstract:

Objective: Research objective was the determination of the cholelithiasis surgical incidence in Multan and its adjacent areas.

Design: The design of research was cross sectional.

Settings: Research was conducted at various surgical units of Nishtar Hospital Multan, Fauji Foundation Hospital, Wapda Hospital, Railway Hospital Multan, Zubaida Fatima Memorial Hospital.

Patients: Our research included a total of male and female respectively 483 & 1583 in the age limit of 10 – 80 years. These patients underwent gallstone surgery from 2015 to 2017.

Measurements: Cholelithiasis surgical incidence in the time span of Jan, 2015 to Dec, 2017 was the focus of this research. We used questionnaire to study the said incidence and noticed the age, sex, dietary habits, gall stone presentation month in the patients.

Results: Gall stone incidence was observed in males and females respectively 4.0% and 14.2%, the proportion of male to female was one to 3.3. Peak months were the months of May and November in which number of cases were observed with the gallstone presentation. Males were in the age group of 10 – 78 years; whereas, females were in the age group of 11 – 80 years. Male and female peak age for the incidence of gallstone was respectively 45 – 59 years and 30 – 44 years. More prone ages for gallstone were observed in female and males respectively as 30 years and 44 years in comparison to other age groups.

Conclusions: An overall cholelithiasis surgical incidence was observed as 9.03% (95% Confidence interval, 8.6% - 9.4%), the incidence was more in females observed 3.3 times higher than the males in the incidence of gallstones development.

Key Words: Cholelithiasis, surgical incidence and gallstones.

Corresponding author:

Dr. Muhammad Aqeel,
Nishtar Hospital Multan,

Pakistan

QR code



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INTRODUCTION:

Cholelithiasis is one of the major healthcare issues among numerous countries specially in the developed countries. Adults are commonly involved in this healthcare issue of gallstones more than elderly and children, it is common in females more than males. Well known causes include sex and age-related variations. Gallstone incidence have been tried to established in many countries through epidemiological research studies [1].

We included the statistical data of five main hospitals of Punjab and tried to establish the incidence of cholelithiasis from 2015 – 2017. We also compared our outcomes with the findings of other countries and observed differences and similarities.

PATIENTS AND METHODS:**Patients**

Female and male cases without age discrimination were having gallstone were hospitalized hospital wise admission cases. All the patients were admitted in the hospital after the identification of the cholecystectomy. The patients of gallstone admitted against cholecystectomy and failed to continue the hospital admission were not included in this research. Research was completed in the time span of 2015 to 2017. All the cases of gallstone were including in the research residing in the adjacent areas of Multan. Cases were managed by number of surgeons of mentioned hospitals. Presentation month, sex and age about the patients of gallstone were documented in the register of hospital admission. We interviewed the patients with the help of a structured interview and questionnaire which was developed for the observation of the dietary routine of the patients having the incidence of gallstone.

Table-I: Gallstone disease Surgical Incidence in Multan and adjoining areas during 2015 to 2017

<i>Hospitals</i>	<i>Male patients</i>	<i>Female Patients</i>	<i>Surgical incidence (%)</i>	<i>95% Confidence interval</i>
Nishtar Hospital Multan	82 / 5292	403 / 2803	5.99	5.47 – 6.55
Fauji Foundation Hospital, Multan (n = 8095)	235 / 2586	548 / 3387	13.1	12.81 – 14.08
Wapda Hospital Multan (n = 5973)	121 / 3165	405 / 2743	8.90	8.12 – 9.71
Railway Hospital Multan (n = 5908)	33 / 779	188 / 1174	11.32	9.29 - 13.71
Zubaida Fatima Memorial Hospital Multan (n = 1953) (n = 953)	12 / 300	39 / 653	5.35	4.05 – 7.11

Analysis

Research analyzed that the cases of gallstones were observed in all the cholecystectomy cases, same has already been observed through USG assessment. Standard Jack knife technique was used for the measurement of the surgical incidence (CI as 95%).

RESULTS:

As shown in Table – I, research studies the cholelithiasis surgical incidence in the 5 hospitals of Multan in the time period as mentioned earlier with CI as 95 percent. The names of the hospitals are also mentioned earlier where the research was carried out.

These hospitals are charitable, government and private hospitals. We observed a highest surgical incidence of 13.1 percent with CI as 95 percent (CI, 12.2 – 14.08). Low social status cases were treated in Wapda hospital with the respective values of Relative Risk and CI as 2.49 & 95% (2.1 – 2.5), these patients were also observed with the consumption of rapeseed oil. Various surgeries carried out in the settings of various hospitals are also reflected in this research during this research. We can observe that an overall cholelithiasis surgical incidence was observed as 9.03% with CI (8.6 – 9.4). Male and female had the respective surgical incidence of 4.0% males CI (3.6% – 4.5%) and 14.2% females CI (14.1% – 15.7%).

Table-II: Sex and Age wise cholelithiasis cases distribution treated at various healthcare facilities of Multan during 2015 – 2017

Age group in years	Male	Female	Male : Female
<14	8	8	1 : 1
15 – 29	57	245	1 : 4.3
30 – 44	135	618	1 : 4.6
45 – 59	157	501	1 : 3.2
60 – 74	106	177	1 : 1.7
75 & above	20	34	1 : 1.7
Total	483	1583	1 : 3.3

Figure – II represents the month-wise gallstone presentation. Peak months were observed as the month of May and November for the cases of gallstone in this research. Sex and age-wise distribution has been shown in Table – II for the incidence of gallstone. More prone were the females in the age limit of 30 – 44 years with the other involved age groups in the incidence of gallstone.

We observed that in the research time period gallstone surgical incidence specially in females increased step by step and a decrease was observed in the males as shown in Figure – III.

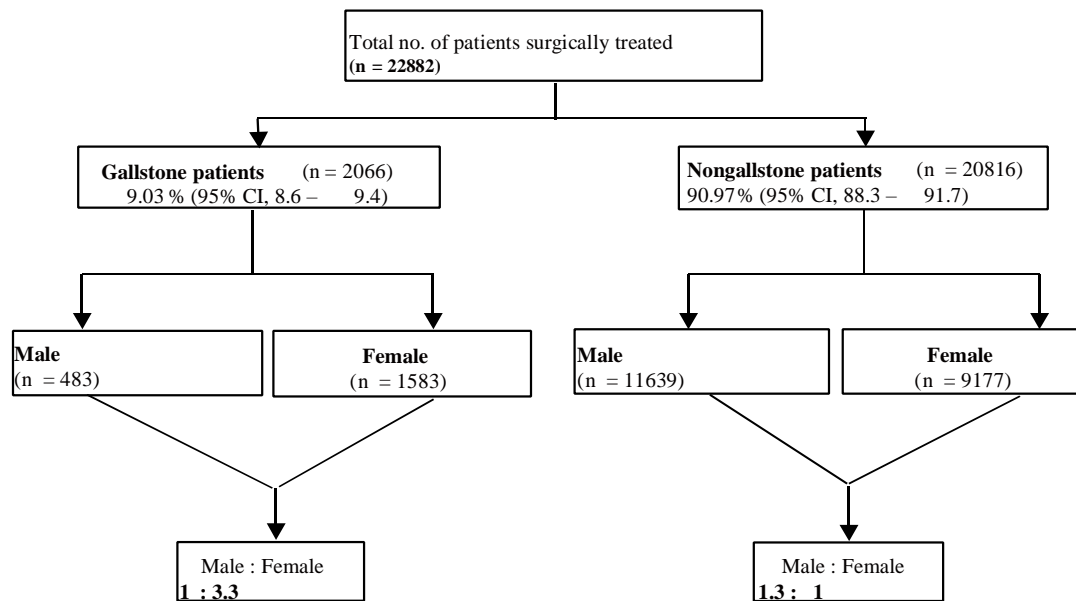


Figure 1: Statistics of patients surgically treated in different hospitals of Multan during Jan. 2015 to Dec. 2017.

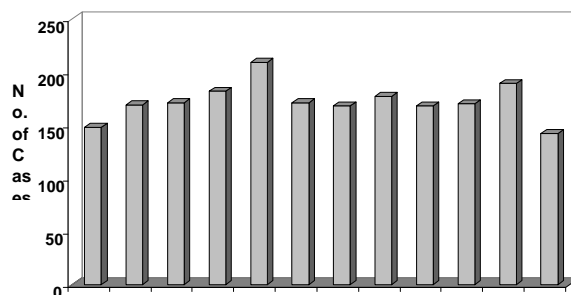


Figure 2: Month-wise presentation of gallstone cases in different hospitals of Multan during 2015 to 2017

DISCUSSION:

It is obvious from the all available literature supported reports that female dominance was observed in the cholelithiasis surgical incidence [2]. Our research observed that cholelithiasis surgical incidence in male and female was respectively 4.0% & 14.2% as these cases were treated at various healthcare facilities of Punjab which is comparatively far below than the Netherland outcomes; in Netherland the same incidence in males and females was observed respectively 39% & 50% irrespective of age group [3]. A number of gallstone cases in the target area were managed in the expectant manner. Moreover, it is another possibility that number of other cases also have gallstone disease asymptomatic in nature [4].

The surgical incidence may be attributed to these reasons for the gallstone disease prevalence observed in the target populations. It was seen that the gallstone incidence was 9.2% as observed in an Italian research and respectively for other countries like the incidence of gallstone was observed in Spam [5], Chile and Thailand as 9.7%, 28.5% and 3.1% [6]. The sun effect in the shape of ultraviolet rays or their exposure is also implicated in cholesterol gallstones pathogenesis. The highest incidence prevalence was also observed in the hot and humid season that may also be attributed a reason of gallstone incidence as the exposure to sun is increased in these months [7]. Moreover, our previous observations about the cholesterol gallstones are common in this region as (77.9%), which support and strengthens this argument of cholesterol gallstones pathogenesis in the target populations in specific and humans in general [8].

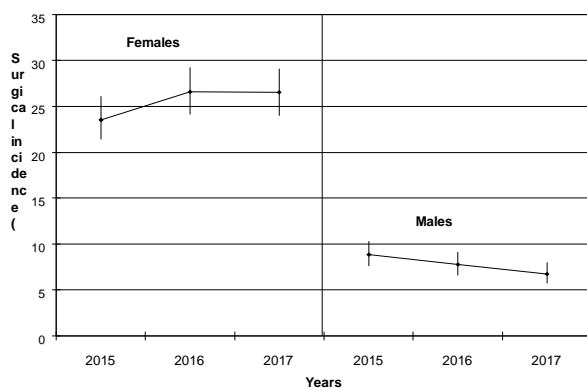


Figure 3: Sex-wise cholelithiasis surgical incidence in 5 various Multan hospitals during 2015 – 2017.

Our outcomes observed that in terms of age the peak age factor was observed in the gallstones occurrence for male and female was in the age limit of 30 – 59 years [9]; whereas, in Europe and USA Europe peak value was observed about the gallstone incidence in

the age of sixty years [10]. This previous gallstone disease onset in the case of our research was also comparable with the European and USA studies (20 – 24 years). The reason may be an ill routine of diet in the long summer season in the target population. Detailed investigative research is required to probe this point in detail [11].

In the outcomes of this research it can be seen that male and female both were hospitalized for the gallstone incidence, this incidence was less prevalent in at the age of fourteen years, it also increased as the age increased. Females were dominant in the incidence of gallstone over males. Peak age limit in female and male was observed as (30 – 44 year) and (45 – 59), respectively [12]. It gradually decreased in the male population of this research. The variations in the male to female was observed in terms of proportion as (1 to 4.6) at the range of age as (30 – 44 years) [13]. We can associate this difference which is related to sex as hormonal change in the women during pregnancy, since during pregnancy and hormonal increase normal level of blood cholesterol is observed just after parturition and within or during menstrual period [14]. Our ratio of male to female was (1: 3.3), which is different from the ratios of Mexican Americans and Pima Indians respectively (1:5.3) & (1:16.6) [15].

The increase which was seen female gallstones surgical incidence during the research period as shown in Figure – III requires more authentic oral contraceptives reports. However, an increase in the cases of gallstone surgical incidence of the female population can be associated to the enhanced educational and awareness levels in the general population about innocuous gallstone surgical treatment.

CONCLUSIONS:

An overall cholelithiasis surgical incidence was observed as 9.03% (95% Confidence interval, 8.6. 9.4), the incidence was more in females observed 3.3 times higher than the males in the incidence of gallstones development.

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