

A Cross Sectional Study on the Rising Frequency of Gallbladder Stones

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ABSTRACT

Objective: The aim of this study was to determine the occurrence of cholelithiasis in the city of Lahore and its surrounding area.

Material and Methods: This study was conducted at Shalamar Medical and dental college Lahore and data for this study was collected from different hospitals of Lahore and the duration of this study was from 2019 to 2021. The participants of this study were from both genders' male and female from of the age of 10 years to 80 years, and the sample size for this study was 483 and 1583. The main focus of our study was to examine the occurrence of Cholelithiasis surgical in the duration of our study. A questionnaire was used to analyses the occurrence of gall stone, and also the sex, age and dietary habits of the patients.

Results: In the results of this study the frequency of gall stones were observed 4.0% in males and 12.0% in females and the percentage of occurrence of gall stones in both these genders were 1% to 3.3%. the high occurrence rate of gall stones in the months are May and November, in both these months the observation of gall stones in these were very high. Both the genders were divided into two main age groups in which male age group were from 10 years to 78 years and the females age group were from 11 years to 80 years. The ideal age for the occurrence of gall stones in male were 45 years to 59 years and in females were 3 years to 44 years respectively.

Conclusions: In the conclusion of this study, we examine that the overall occurrence of gall stones in both the genders were 7.01%, but at same the time occurrence rate in the females were very high as compared to the male which were 1% in males and 3.3% in females.

Keywords: Cholelithiasis, Surgical Incidence, Gallstones.

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 2019 – 2021. We also compared our outcomes with the findings of other countries and observed differences and similarities.

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 2019 to 2021. All the cases of gallstone were including in the research residing in the adjacent areas of Lahore. 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.

PATIENTS AND METHODS

Female and male cases without age discrimination were having gallstone were hospitalized hospital wise admission

Table-I: Gallstone Disease Surgical Incidence in Lahore and Adjoining Areas During 2019 To 2021

Hospitals	Male patients	Female Patients	Surgical incidence (%)	95% Confidence interval
Shalamar Medical and Dental College Lahore	82 / 5292	403 / 2803	3.77	3.25 – 4.33
Fatima Memorial Hospital, Lahore (n = 8095)	235 / 2586	548 / 3387	11.1	10.79 – 12.06
Gulab Devi Hospital Lahore (n = 5973)	121 / 3165	405 / 2743	6.70	6.10 – 7.69
Services Hospital Lahore (n = 5908)	33 / 779	188 / 1174	9.30	7.27 – 11.69
Lahore General Hospital (n = 1953) (n = 953)	12 / 300	39 / 653	3.13	2.03 – 7.11

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 Lahore 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 11.1% with CI as 95 percent (CI, 12.2 – 12.06). 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 7.01% with CI (6.4 – 7.2). Male and female had the respective surgical incidence of 4.0% males CI (3.4% –2.3%) and 12.0% females CI (12.1% – 13.5%).

Table-II: Sex and Age Wise Cholelithiasis Cases Distribution Treated at Various Healthcare Facilities of Lahore During 2019 – 2021

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.

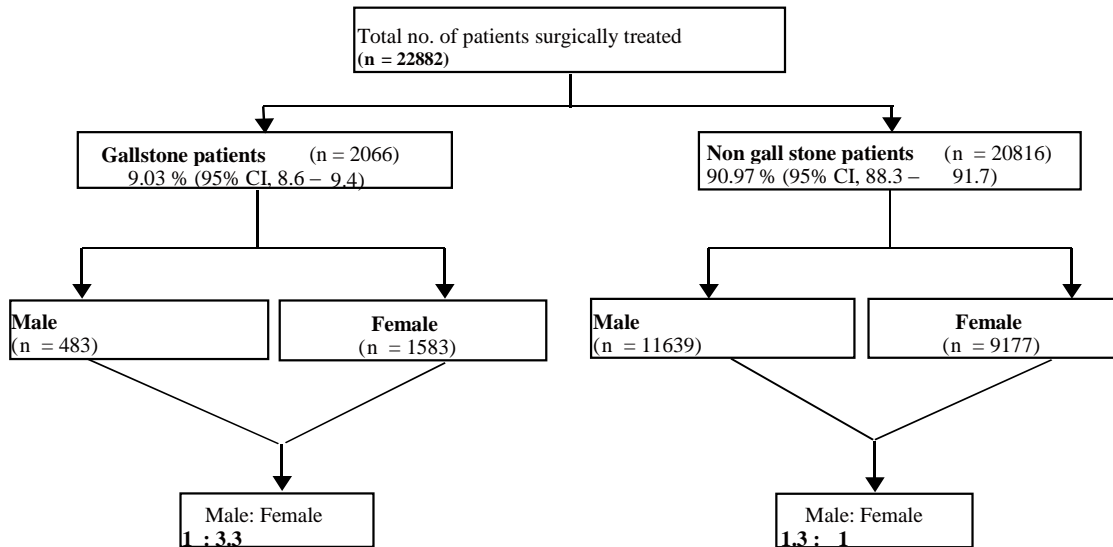


Figure 1: Statistics of patients surgically treated in different hospitals of Lahore during Jan. 2019 to Dec. 2021.

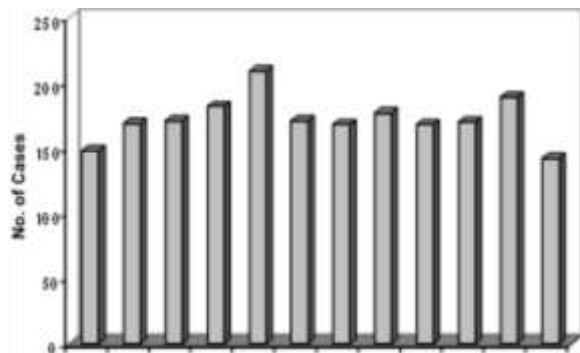


Figure 2: Month-wise presentation of gallstone cases indifferent hospitals of Lahore during 2019 to 2021

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% & 12.0% 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 Spain [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].

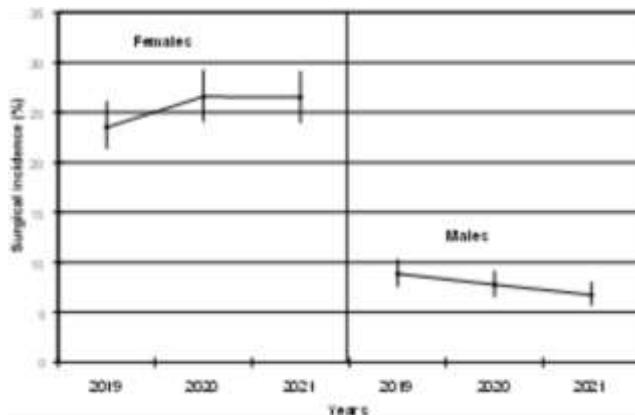


Figure 3: Sex-wise cholelithiasis surgical incidence in 5 various Lahore hospitals during 2019 – 2021.

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

Conclusions: In the conclusion of this study, we examine that the overall occurrence of gall stones in both the genders were 7.01%, but at same the time occurrence rate in the females were very high as compared to the male which were 1% in males and 3.3% in females.

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