

Section **General Surgery**

**Original** Article

# Prevalence of Cholelithiasis Amongst Patients Undergoing Abdominal Ultrasound

**Aseem Trikha**

Senior Resident, Department of Surgery,  
 Acharya Shree Bhikshu Government Hospital, Delhi, India.

## ABSTRACT

**Background:** Cholelithiasis is a global issue and it remains a common reason for surgical management, underwriting substantially to health the care costs. The aim of the present study was to determine subjects with gall stones coming to the department for ultrasound.  
**Methods:** The present cross sectional observational study was conducted amongst subjects aged more than 15 years reporting to the hospital for abdominal ultrasound. Prevalence of the gallbladder outcomes was measured as percentages with 95% confidence intervals. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software.  
**Results:** There were a total of 2000 subjects in the study. The mean age of the subjects was 46.72±3.89 years. There were 91% (1820) with no abnormalities in gall bladder. Gallstones were seen amongst 5% (100) subjects. **Conclusions:** The prevalence of gall stones in the present study was 5%. There is a need to create substantial awareness amongst subjects regarding this disease as majority of this is asymptomatic.


**Keywords:** Awareness, Asymptomatic, Cholelithiasis, Gallbladder.

Published Online: September 30' 2019  
 Received: 30.05.19  
 Accepted: 18.06.19

**\*Corresponding Author**

**Dr. Aseem Trikha**  
 Senior Resident,  
 Department of Surgery,  
 Acharya Shree Bhikshu Government Hospital, Delhi, India.

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## INTRODUCTION

Cholelithiasis is a global issue and it remains a common reason for surgical management, underwriting substantially to health the care costs. Its prevalence varies greatly amongst different subgroups. Amongst adults of America, the prevalence is about 10% while those in Western Europe the prevalence varies between 5.9% to 21.9%.<sup>1</sup> Prevalence ranges between 3.2% to 15.6% amongst Asian population.<sup>2</sup> Cholelithiasis has historically been regarded rare condition in the African populace.<sup>3,4</sup> Since various African nations undergo rapid urbanization with shifting towards a processed diet cholelithiasis will slowly become more prevalent in these populations.<sup>4</sup> The well-established risk variants for gallstones are advancing age, female predilection, obesity and sedentary lifestyle.<sup>5-7</sup> Also, increased levels of lipids and high glucose content are related with gallstone formation.<sup>8</sup>

Additionally, the risk of disease occurrence elevates with age amongst both the genders<sup>9,10</sup> and a more significantly amongst females than males.<sup>11,12</sup> The aim of the present study was to determine subjects with gall stones coming to the department for ultrasound. Number of gall bladder surgery increased in department of surgery which corresponded to increase in number of patients detected with cholelithiasis on ultrasound of abdomen.

## METHODS

The present cross-sectional observational study was conducted amongst subjects aged more than 15 years reporting to the hospital for abdominal ultrasound. The subjects were informed about the study and a written consent

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Website: <a href="http://www.iabcr.org">www.iabcr.org</a>	Quick Response code 
DOI: 10.21276/iabcr.2019.5.3.02	

**How to cite this article:** Trikha A. Prevalence of Cholelithiasis Amongst Patients Undergoing Abdominal Ultrasound. Int Arch BioMed Clin Res. 2019;5(3):03-05.  
**Source of Support:** Nil, **Conflict of Interest:** None

was obtained from them in their vernacular language. Ethical committee clearance was obtained from the institutional ethical board. Complete demographic details of all the subjects was obtained. Subject's weight was measured after taking out their shoes. Using a graduated scale, the height of all subjects was estimated. A consultant radiologist was made to supervise the sonographic investigations. Cholelithiasis was considered as presence of gallstones on ultrasound or absence of bladder on ultrasonic examination. Prevalence of the gallbladder outcomes was measured as percentages with 95% confidence intervals. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software.

## RESULTS

Table 1 shows the demographic of the study population. There were a total of 2000 subjects in the study, the mean age of the subjects was 46.72+/-3.89 years. There were 40% (n=800) subjects less than 40 years of age and 60% (n=1200) subjects were elder or equal to 40 years of age. Family history of gall stones was observed amongst 20 subjects and 1960 subjects had no history of gall stones. Information on family history was missing amongst 20 patients. Diabetes was seen amongst 280 patients. Table 2 illustrates the ultrasound findings amongst the study. There were 91% (1820) with no abnormalities in gall bladder. Gallstones were seen amongst 5% (100) subjects. There were 20 cases of Cholecystectomy and Gallbladder sludge respectively. There were 1% cases each of Cholecystitis and Calculous cholecystitis.

**Table 1: Demographic characteristics of the study**

Variable	Frequency	Percentage
Age	46.72+/-3.89	
<b>Age group</b>		
<40	800	40
>40	1200	60
<b>Family history</b>		
Yes	20	1
No	1960	98
Missing	20	1
<b>Diabetes</b>		
Yes	280	14
No	1720	86

**Table 2: Ultrasound findings**

Findings	Frequency	Percentage
Normal	1820	91
Gallstones	100	5
Cholecystectomy	20	1
Gallbladder sludge	20	1
Cholecystitis	20	1
Calculous cholecystitis	20	1

## DISCUSSION

Attitude of surgeons Towards cholecystectomy indications for may also Affect rates of cholecystectomy rates<sup>13</sup>, however the incidence of gallstone disorder in the population seems to have little affect on the incidence rates of cholecystectomy.<sup>14</sup> Additionally, approximately 20% of subjects with gallstone disorder ever become symptomatic.<sup>15</sup> Except for patients lesser than 20 years, prevalence was more amongst females in different age groups. The risk of cholelithiasis is more amongst females than males at different ages in most of the studies.<sup>2</sup> Except from studies from Taiwan that reported no statistical significance in the incidence rate of cholelithiasis amongst both the genders.<sup>16</sup> The more frequently found pigment stones amongst that population have been presented as the reason for this exception. Cholesterol stones are supposed to be associated to metabolic diseases, that are more commonly prevalent in women.<sup>16</sup> In the present study, there were a total of 2000 subjects in the study, the mean age of the subjects was 46.72+/-3.89 years. There were 40% (n=800) subjects less than 40 years of age and 60% (n=1200) subjects were elder or equal to 40 years of age. Family history of gall stones was observed amongst 20 subjects and 1960 subjects had no history of gall stones. Information on family history was missing amongst 20 patients. Diabetes was seen amongst 280 patients. There were 91% (1820) with no abnormalities in gall bladder. Gallstones were seen amongst 5% (100) subjects. There were 20 cases of Cholecystectomy and Gallbladder sludge respectively. There were 1% cases each of Cholecystitis and Calculous cholecystitis. Most researches show an increased odds ratio of cholelithiasis related with childbearing and parity.<sup>17</sup> However there are few other studies, that could not substantiate these results.<sup>18</sup> Obesity has been recognized as a chief risk factor for the development cholelithiasis regardless of gender.<sup>2</sup> There are some studies that have created no link between BMI and cholelithiasis, or even decreased odds of cholelithiasis amongst individuals with higher BMI. The prevalence of gall stone disease was slightly lesser than study done in KSA where the overall incidence of gallstones was 11.7%.<sup>19</sup> Different studies also illustrated high incidence rates that compared with our study.<sup>20</sup> Also, the average prevalence rate was 4-12% in Middle Eastern nations.<sup>21</sup>

## CONCLUSION

Cholelithiasis is not an uncommon condition. It is widely prevalent amongst different age groups and genders. The prevalence of gall stones in the present study was 5%. There is a need to create substantial awareness amongst subjects regarding this disease as majority of this is asymptomatic.

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