

AGE AND SEX DISTRIBUTION OF CHOLELITHIASIS IN TERTIARY HOSPITAL OF NORTHERN INDIA

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ABSTRACT: Gallbladder disease is a common health problem throughout the world. The commonest reason is gallstones accounting for over 90% of cases. Gallstones can occur in any age group of both the sexes. Incidence of gallstones increases with age and is more common in female population including both symptomatic and asymptomatic cases. The present study was conducted to assess the age and sex distribution of cholelithiasis cases in tertiary hospital of northern india.

KEYWORDS: Gallbladder, Gallstones, Incidence, Prevalence.

INTRODUCTION

Gallstones are becoming increasingly common. There has been marked rise in the incidence of gallstone disease in the west during the past century. Incidence of cholelithiasis is 10% in western countries with prevalence of approximately 10 to 15% in USA [1] and 17% in Asian countries with an overall incidence of 11 to 36%.[2] In India, it is more common in north India than in south. Gallbladder stones occur seven times more commonly in north India than in south India. This difference is attributed to different ethnic background, dietary differences or genetic predisposition.[3] Incidence of gallstones increases with the age. It is more common in females than males (Male:Female=1:4) and about 50% of patients are asymptomatic.[4] Gallstones are 4-10 times more frequent in older than younger subjects. Biliary cholesterol saturation increases with age, due to a decline in the activity of cholesterol 7 α hydroxylase, the rate limiting enzyme for bile acid synthesis.[5] Deoxycholic acid proportion in bile increases with age through enhanced 7 α dehydroxylation of the primary bile acids by the intestinal bacteria.[6] In all populations of the world, regardless of overall gallstone prevalence, women during their fertile years are almost twice as likely as men to experience cholelithiasis. This preponderance persists to a lesser extent into the postmenopausal period, but the sex difference narrows with increasing age.[7]

Increased levels of the hormone estrogen, as a result of pregnancy or hormone therapy, or the use of combined (estrogen-containing) forms of hormonal contraception, may increase cholesterol levels in bile and also decrease gallbladder movement, resulting in gallstone formation.[8]

MATERIALS AND METHODS

This was a hospital based observational study done in Department of Surgery, Dr. Y.S Parmar Government Medical College, Nahan, Himachal Pradesh from November 2021 to November 2023. The present study was conducted on 50 patients of cholelithiasis from age groups 21years to 60 years in both sexes. A written and informed consent was taken from all patients to participate in study along with permission from ethics committee of institution to conduct the study.

RESULTS

Table-Age and sex distribution of cholelithiasis cases

Age Group (Years)	Sex		Total	Percentage
	Male	Female		
21-30	1	7	8	16%
31-40	0	4	4	8%
41-50	2	16	18	36%
51-60	4	16	20	40%

The youngest patient was 21 year old and oldest was 60 year old. Mean age group was 40 years with age ranging from 21-60 years. Majority of cases were seen in age group of 51-60 years and in female patients (16 cases).

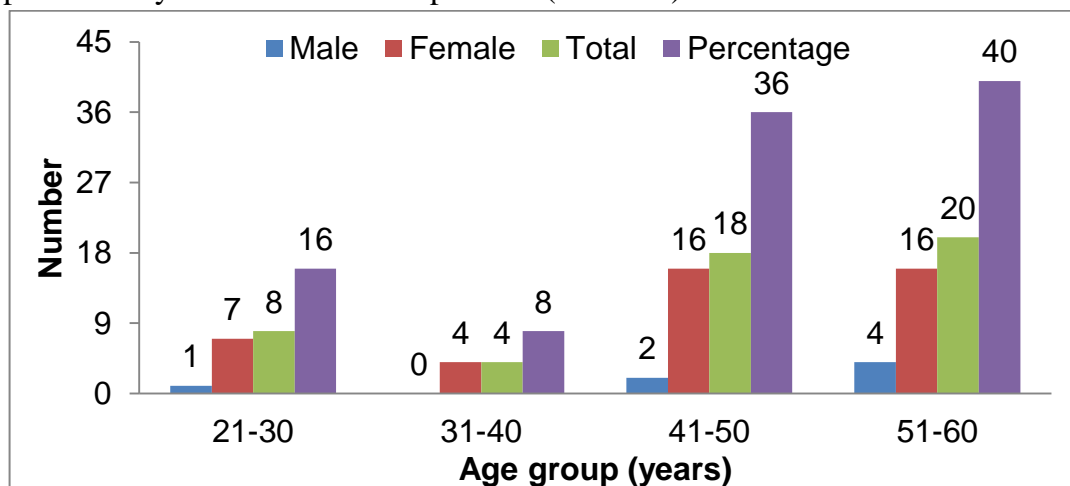


Fig: Age and sex distribution of cholelithiasis cases

DISCUSSION

This study was undertaken to identify the age and sex distribution of cholelithiasis cases in affected age groups. Different studies throughout the world have concluded the increased incidence of gallstone disease in female gender in older age group.

A study conducted by Cooper et al (2008) on forty patients, in which 16 patients were with cholecystitis and 24 patients were with cholelithiasis 11 were males and 29 were females. The age range was 15-65 years. [9] A study shows Five year incidence in women aged 30, 40, 50 and 60 years are 4%, 3.6%, 3% and 3.7% and the same incidence rate in men are 0.3%, 2.9%, 2.5% and 3.3% at the same age. This shows that the incidence is more in women.

Gallstones are two times more common in women than in men. The incidence of gallstones in general population is 10%. Prevalence of gallstones in women between the ages 20 to 55 varies 5% - 20% and after 50 years 25% - 30%. The prevalence in men is approximately half of that women.[10].

Epidemiologic investigations have found and clinical studies have confirmed that at all ages, women are twice as likely as men to form cholesterol gallstones. The difference between women and men begins during puberty and continues through the childbearing years because of the effects of female sex hormones and differences between the sexes in metabolism of cholesterol by the liver in response to oestrogen.

Human and animal studies have shown that oestrogen increases the risk of cholesterol gallstones by augmenting hepatic secretion of biliary cholesterol, thereby leading to an increase in cholesterol saturation of bile. [11]

CONCLUSION

From observation of our prospective study of 50 cholelithiasis cases to determine age and sex distribution of cholelithiasis we conclude that gallstone disease was more common among females in age group 41-60 years.

Females have higher incidence of cholelithiasis as compared to males.

Hence female sex and old age group are 2 most important factors influencing gallstone formation.

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