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Research Article

CORRELATION OF GALL STONE AND PARITY IN FEMALES: AN OBSERVATIONAL STUDY

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ABSTRACT

Gall stone disease is very common gastrointestinal disorder worldwide. The prevalence varies with age, sex and ethnic group. The incidence ranging from 10% to 20% of the world population. Prevalence increases with age from 21 years to 80 years and is higher in females than in male's .In India, it is seven times more common in the north than in the south. Epidemiologic investigations have found and clinical studies have confirmed, that at all ages, women are twice as likely as men to form gallstones. The difference between women and men begins during puberty and continues through the child bearing years because of the effects of female sex hormones. Increasing parity is probably a risk factor for gallstones, especially in younger women. This risk seems to apply to both the number and age of pregnancies. The present study was undertaken to find out the possible association of cholelithiasis with parity. In this study 66 female patients were included who were diagnosed as cholelithiasis or choledocholithiasis. A detailed history regarding parity was taken from each diagnosed case. In the study correlation between gall stone disease and multi parity was observed to be significant. Those who conceived 4-6 times having the maximum incidence of 42.4%. But when the number of conceptions further increases this association shows less significant results

Keywords: Cholelithiasis, Choledocholithiasis, Prevalence, Parity, Sex hormones

INTRODUCTION

Gall stone disease is a very common gastrointestinal disorder, present commonly in the western world. The incidence ranging from 10% to 20% of the world population. In India, it is seven times more common in the north than in the south. The prevalence varies with age, sex and ethnic group. Prevalence rates of 3.2% to 15.6% have been reported from Asia. Prevalence increases with age from 21 years to 80 years and is higher in females than males. Gallstones can occur anywhere within the biliary tree, including the gallbladder and the common bile duct.[1, 2] Gallstones are a major public health problem in all developing countries. Many epidemiological studies have been performed with the aim of establishing gallstone prevalence and incidence rates, and of defining risk factors, amenable to prevention. The adage fair, fat, fertile, female and fourty is only a part of the story. Gallstone formation is multi factorial, both constitutional (un modifiable) and environmental (modifiable) risk factors competing to lithogenesis.[3] 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 child bearing years because of the effects of female sex hormones.[4]

Increasing parity is probably a risk factor for gallstones, especially in younger women.[5] This risk seems to apply to both the number and age of pregnancies. For example, a woman who has four pregnancies before the age of 25 has a fourfold to 12-fold increased risk of cholesterol gallstones compared with an age matched, weight matched nulliparous woman.[6]

The present study was done with the objective to ascertain Correlation of parity with cholelithiasis exists or not.

MATERIALS AND METHODS

The study was conducted in department of Jarahat (Surgery), A.K Tibbiya College Hospital AMU, Aligarh. In this study 66 married female patients were included who were diagnosed as cholelithiasis or choledocholithiasis. These patients were of low and middle socio economic groups and the diagnostic criteria were based on ultra sonography report. A detailed history regarding parity was taken from each diagnosed case of cholelithiasis. The association of parity and cholelithiasis was assessed with the percentage cases present in each parity groups of the female patients.

OBSERVATION AND RESULTS

In the study, correlation between gall stone disease and multi parity was observed to be significant. Those with 4-6 parity have the maximum incidence of 42.4%.But when parity increases to >6, the incidence of gall stone has been found to have a decreasing trend. The incidence decreases to 24.24% in those whose parity is 7 to 9. Cases with 1-3 parity have almost the same percentage of gallstone as that of 7-9 (24.24-27.3%). There was only one patient of gallstone disease in patients having parity 10-12 (1.51%). The observations are summarised in Table 1 and Figure 1.

Table 1: Percentage of gallstone cases at different parity

No. Of Parity	No. Of patients	Percentage
0 (Nulliparous)	3	4.55
1-3	18	27.3
4-6	28	42.4
7-9	16	24.24
10-12	1	1.51
Total	66	100

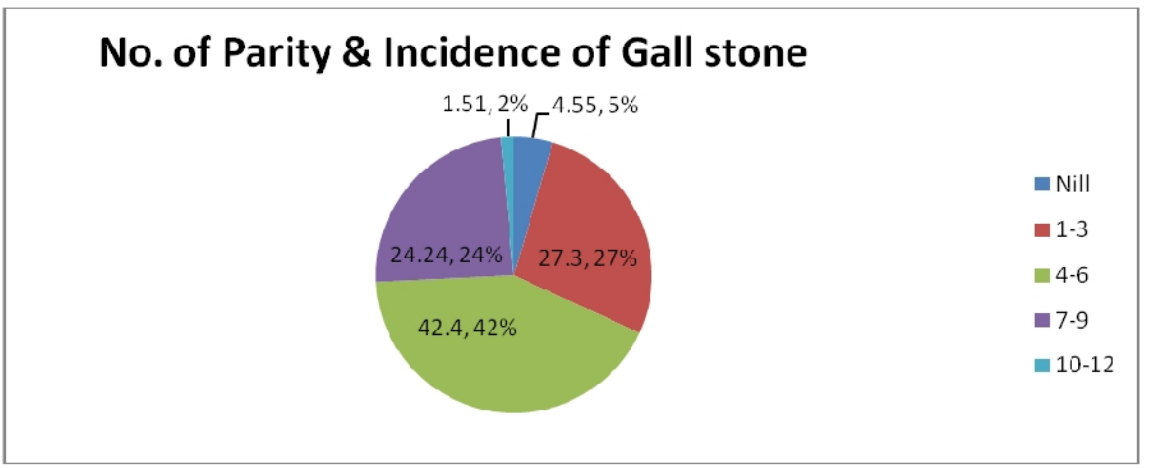

Figure 1: Percentage of gallstone cases at different parity.

DISCUSSION

The present study was undertaken to find out the possible association of cholelithiasis with parity. Increase in number of pregnancies is associated with increased risk of gall stone as proved by various studies. Parity also appears to be a factor in the development of gallstones. Women with more pregnancies and longer lengths of fertility periods appear to have a higher likelihood of developing gallstones than those who remain nulliparous.[2]

Another study found women under the age of 25 years with > 4 pregnancies were 4 to 12 times more likely to develop cholesterol stones compared to nulliparous women of the same age and weight.[6]

One more further study reveals that the ratio of females : males was (7:1), this high ratio may be due to multiple factors including high percentage of multi parity (63.64%), the use of contraceptives (46.97%).[7]

Although other previous studies also reveal that the women during their fertile years are almost twice as likely as men to experience cholelithiasis female. This preponderance persists to a lesser extent into the postmenopausal period, but the sex difference narrows with increasing age [8, 9], but in our study we have noted that the parity increased the incidence of gallstones up to 4-6 parity, and when the number of conceptions increase up to 7-9, the incidence falls from 42% to 24% and with the parity increases up to 10-20 the incidence of gall bladder falls to 1.5% from 42%.This phenomenon is difficult to explain, although the patient is exposed to same hormonal and metabolic changes but the incidence is decreasing. This indicates that oestrogen and progesterone level though the major factor responsible for stone formation, research is needed to enumerate other likely causes for gall stone formation in female patients.

CONCLUSION

In conclusion, the study shows that cholelithiasis has a positive correlation up to 4-6 parity, but when the number of conceptions further increases this association shows less significant results.

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