



## TESTING THE VALIDITY OF RISK FACTORS FOR GALL STONES

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**ABSTRACT** **BACKGROUND:** Gallstones are the most common biliary pathology, It is estimated that gallstones affect 10–15% of the population in Western societies. They are asymptomatic in the majority of cases (>80%). Approximately 1–2% of asymptomatic patients will develop symptoms requiring surgery per year, making cholecystectomy one of the most common operations performed by general surgeons. The study aims To find out the frequency of risk factors female, fat, flatulence, fertile and forty in the Indian population.

**MATERIAL&METHODS:** A prospective study of 100 patients diagnosed with cholelithiasis on ultrasonography were admitted to the Department of General Surgery, King George Hospital, Visakhapatnam, from June 2019 to June 2020. Data collection through interviews included age, sex, marital status, parity, height and weight. Based on height and weight BMI(weight in kg/height in m<sup>2</sup>) was calculated. Data collected also included Lipid profiles.

**RESULTS:** 80%of patients were above 40 years of age, 82% were female, and 78% were multiparous while 68% had BMI above 23.

**CONCLUSION:** Female gender, fertility, middle age and flatulence are the common risk factors of gallstone formation with the female being the highest& obesity is lesser significant than another risk factor in our population.

**KEYWORDS :** Gall stones, Risk factors**INTRODUCTION**

Gallstones have become a very common surgical illness worldwide nowadays. It is estimated that gallstones affect 10–15% of the population in Western societies and is 3–5% in African and Asian population. They are asymptomatic in the majority of cases (>80%)&being detected incidentally as imaging is performed for other symptoms. Approximately 1–2% of asymptomatic patients will develop symptoms requiring surgery per year, making cholecystectomy one of the most common operations performed by general surgeons. Gallstones can be divided into three main types: cholesterol, pigment (brown/black) or mixed stones, In the USA and Europe 80% are cholesterol or mixed stones, whereas in Asia 80% are pigment stones. To remember the risk factor of gallstones a famous mnemonic is well known which include 5 F's consisting of female, fat, flatulence, fertile and forty and its evidence has been provided by many studies. Basically there are three kinds of pathogenic abnormalities believed to be the cause of cholesterol gallstone formation which are Super saturation of bile in cholesterol, increased nucleation of cholesterol crystals, impaired gallbladder emptying with stasis and decreased motility of intestine. Some studies have suggested that serum lipids are closely linked to the pathogenesis of gallstones. High serum Cholesterol, high serum LDL, and low serum HDL have been associated in formation of cholesterol gallstones. The deranged serum lipid profile may be due to mixture of different risk factors like fatty food, obesity, female gender, fertility and other genetic factors which are also proven by studies done in North American Indians and Caucasian. As our has different lifestyle patterns so the risk factors here may be different from the western countries. With the intention of establishment of useful anticipatory and preventive medical and surgical plan for the recognition and prevention of gallstones in Our Population this study will be helpful to recognise and appreciate the various risk factors amenable to prevention unique in our population.

**AIMS & OBJECTIVES**

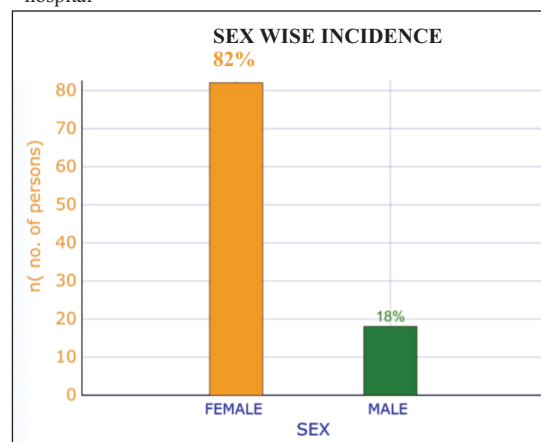
- To know the validity of 5 F ( female, fat, fertile, forty, flatulent) mnemonic as risk factors in gall stone formation in our population
- To determine the frequency of risk factors in our population

**MATERIAL & METHODS**

A prospective study of 100 patients diagnosed as cholelithiasis on ultrasonography were included in Department of General Surgery, King George Hospital, Visakhapatnam, from June 2019 to June 2020. Data collection through interview included age, sex, marital status, parity, height and weight. On the basis of height and weight BMI(weight in kg/height in m<sup>2</sup>) was calculated. All of them routinely had Lipid profile done (with 12-14 hours fasting overnight). The clinical and laboratory records of the patients were analysed for serum cholesterol, Triglycerides LDL, HDL levels

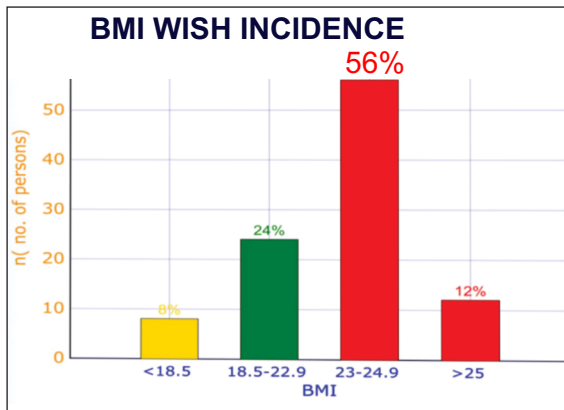
**Inclusion Criteria**

- Males & Females above 18 years of age
- Patients with ultrasound confirmed cholelithiasis & admitted in hospital

**RESULTS**

Total 100 patients with symptomatic gallstones were included in the study.

Out of which 82 are females,80 are above 40years of age,78are multiparous, 68 having BMI more than 23.



The most common risk factor was female sex followed by age in 80 patients, multiparity in 78 patients. Among the 5 F less common risk factor was BMI in 68 patients. Serum cholesterol, Triglycerides LDL, HDL levels significance is variable.

## DISCUSSION

Out of 5 F's mnemonic as the risk factor of gallstones, the 5F is proven by our study as valid mnemonic obtaining data as 82% females with 80% above 40 years, 78% fertility (multiparity), 72% complains of dyspepsia and 68% having BMI more than 23.

In all over the world, Gallstones are two times common in middle age females as compared to men similar is found in our study.

Obesity is a considered as one of the main risk factor for cholelithiasis. In Harvard School of Public Health, Boston, a study was conducted with 88,837 women, in that study obesity as a risk factor has a linear relation with formations gall stones. Females with a body mass index (BMI) more than 45 kg/m<sup>2</sup> had a seven times increased risk than in those having BMI less than 24kg/m<sup>2</sup>. But in our study being less common than the other risk factors among 5 F still proving obesity is a significant risk factor for gall stone formation.

The Western Fatty diet, increased weight, and their specific & different life styles has a greater influence as a risk factor for the formation of gall stones.

The different etiology may be responsible for the gall stones with different composition in our population.

In our study, only some specific risk factors have been taken into consider & evaluated while other modifiable risk factors like diet, alcohol abstinence, Smoking and Sedentary behaviour e.t.c has not been discussed ,so to evaluate the association of these factors to gallstones properly still more & further studies needed .

## CONCLUSIONS

Our study proved that female, forty, fertile, fat, flatulent are significant risk factors for the gall stone formation in our population hence 5F mnemonic is valid for our population.

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