

Original Research Article

A study on changing trends in epidemiological and demographic factors influencing cholelithiasis

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Abstract:

Background & Method: The aim of the study is to study the changing trends in epidemiological and demographic factors influencing cholelithiasis. Examination of the other systems and of the part concerned was done in detail. Routine laboratory work up and ultrasonography with upper GI endoscopy was carried out preoperatively of all the patients. They were posted for laproscopic cholecystectomy and Open cholecystectomy.

Result: 68% of the study population belonged to lower socio economic status. Rest of them fall in the middle class. 70% of the study population had pain in the right upper quadrant, followed by 64% who had dyspepsia. 12% were asymptomatic.

Conclusion: The present study concluded that the gall stones are becoming common among individuals of age 20-39 years, especially females with other risk factors like low educational status, lower socio economic status, sedentary lifestyle with irregular eating habits and obesity. 70% of the study population had pain in the right upper quadrant, followed by 64% who had dyspepsia. 12% were asymptomatic.

Keywords: trends, epidemiological, demographic & cholelithiasis.

Study Designed: Cross sectional study.

1. Introduction

Worldwide gallstone disease is increasing. In the last 50 years the prevalence of gallstone disease in Japan has doubled and there has been a change from pigment to cholesterol gallstones. It is estimated that atleast 20 million persons in the US have cholelithiasis and each year approximately 1 million new cases of cholelithiasis are being diagnosed. Similar increases are noted elsewhere also. The highest prevalence of gallstone disease is noted in Native American Indians (Pima) in Arizona. An alarming frequency of 73% of Pima women having gallstones around the age of 30 was noted. Similarly a high incidence is noted in other Native American tribes of USA, Mexico and South America. Thus in Chile nearly 50% of women and 12.6% of men have gallstones. Abdominal ultrasound revealed a high prevalence in Norway (21.9%) and former East Germany (19.7%). Gallstone disease in the US is similar to that in Europe ranging from 5.9% to 21.9%. An excellent article by Shaeffer in 2006 nicely summarizes the prevalence of gallbladder disease in Europe and in the US. Most of these data are pertaining to cholesterol stones, the predominant type of gallstone disease in the West. Brown pigment stones consist of calcium bilirubinate, calcium soaps, mucin (predominantly from the biofilm of bacteria) and cholesterol. They develop in bile ducts usually in

association with infection and parasitic infestation (*Clonorchis sinensis*, *Opistochus vivarii* or *Ascaris*). Brown pigment stones are reported from East Asia. The frequency of hepatolithiasis varies from a high of 20% in China and Taiwan to 2-3% in Japan, Singapore and Hong Kong. The discussion here is mostly on cholesterol gallstones, the most prevalent one.

Diseases of the gallbladder are common and costly. The best epidemiological screening method to accurately determine point prevalence of gallstone disease is ultrasonography. Many risk factors for cholesterol gallstone formation are not modifiable such as ethnic background, increasing age, female gender and family history or genetics. Conversely, the modifiable risks for cholesterol gallstones are obesity, rapid weight loss and a sedentary lifestyle. The rising epidemic of obesity and the metabolic syndrome predicts an escalation of cholesterol gallstone frequency. Risk factors for biliary sludge include pregnancy, drugs like ceftriaxone, octreotide and thiazide diuretics, and total parenteral nutrition or fasting. Diseases like cirrhosis, chronic hemolysis and ileal Crohn's disease are risk factors for black pigment stones. Gallstone disease in childhood, once considered rare, has become increasingly recognized with similar risk factors as those in adults, particularly obesity.

2. Material & Method

The study was conducted in the Upgraded Department of General Surgery, Osmania General hospital. All the patients who were admitted as In patients for surgical treatment for cholelithiasis in the department of General Surgery, Osmania General hospital. A total of 50 patients who were satisfying the inclusion criteria were enrolled into study.

A detailed history was ascertained and entered in the proforma. A detailed previous history was recorded. Past history of intake of any drugs, antibiotics, and any history of previous hospitalization, associated illness and habits and diet were recorded in detail. Significant family history was also recorded. General physical examination was carried out in detail, considering features suggestive of anaemia and jaundice. Any sites of focal infection were also looked for.

Examination of the other systems and of the part concerned was done in detail. Routine laboratory work up and ultrasonography with upper GI endoscopy was carried out preoperatively of all the patients. They were posted for laproscopic cholecystectomy and Open cholecystectomy.

Inclusion criteria:

1. Any case with radiologically detected cholelithiasis
2. Patients of age groups 20-60 yrs including significant family history
3. Both males and females (excluding pregnant females)
4. Patients with drug history of oral contraceptive pills, cholestyramine, deoxycholate, clofibrate
5. Patients with past abdominal surgeries (ileal resection, bowel anastomosis)
6. Patients with hemolytic diseases
7. Patients with altered bowel habits
8. Patients who are willing to give an informed written consent.

Exclusion criteria:

1. Patients who are not willing to participate in the study.
2. Patients presenting with associated gall bladder malignancies
3. Biliary tract calculi
4. Patients presenting with Empyema and Mucocele of Gall bladder
5. Patient presenting with gall stone ileus

6. Patients with Gall bladder perforation

3. Results

Table 1: showing the age distribution of study population:

Age group in years	Frequency	Percentage
20-29	5	10
30-39	35	70
40-49	7	14
50-59	3	6
Total	50	100

Majority (70%) of the study population belonged to the age group of 30-39 years, followed by 14% of age group 40-49 years, 10% belonged to 20-29 years and 6% belonged to 50-59 years.

Table 2: showing the education of study population:

Education	Frequency	Percentage
Illiterates	5	10
Primary education	12	24
Secondary education	6	12
Intermediate	25	50
Graduates	2	4
Total	50	100

Half of the study population studied up to intermediate. 24% had primary education, 12% had completed secondary education. 10% were illiterates and 4% were graduates.

Table 3: showing the socioeconomic status of study population

Socio economic status	Frequency	Percentage
Lower	34	68
Middle class	16	32
Total	50	100

68% of the study population belonged to lower socio economic status. Rest of them fall in the middle class.

Table 4: showing the lifestyle of study population

Lifestyle	Frequency	Percentage
Sedentary	29	58
Moderate	17	34
Heavy	4	8

Total	50	100
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58% of the study population were sedentary, 34% were moderate workers and 8% were heavy workers.

Table 5: showing the Clinical Features of study population:

Clinical Features	Frequency	Percentage
Pain in the RUQ	35	70
Dyspepsia	32	64
Vomiting	15	30
None or asymptomatic	6	12

70% of the study population had pain in the right upper quadrant, followed by 64% who had dyspepsia. 12% were asymptomatic.

4. Discussion

In the present study, Majority (70%) of the study population belonged to the age group of 30-39 years, followed by 14% of age group 40-49 years, 10% belonged to 20-29 years and 6% belonged to 50-59 years.

80% of study population fall below the age of 39 years. This shows that the age of presentation of gall bladder stones has shifted to much lower age group. There was a concept of fatty, fertile female of age 45 years usually found to have gall stones. The disease in the lower age groups was relatively rare earlier but has become very common in the present era and was proved in the study. In the present study, Half of the study population studied up to intermediate.

24% had primary education, 12% had completed secondary education. 10% were illiterates and 4% were graduates.

Lower level of educational status will contribute to ignorance, which leads to faulty dietary habits and obesity which are the well-known risk factors that predispose to the disease. In the present study, 68% of the study population belonged to lower socio economic status. Rest of them fall in the middle class. In the present study, 58% of the study population was sedentary, 34% were moderate workers and 8% were heavy workers.

Sedentary lifestyle increases the risk of obesity and thereby formation of gall stones. Low socioeconomic status again contributes to poor eating habits, increased intake of low calorie diet and increased periods of fasting. There has been a changing trend in the prevalence of obesity.

In the present study, 70% of the study population had pain in the right upper quadrant, followed by 64% who had dyspepsia. 15% had vomitings and 12% were asymptomatic. Present study is comparable with older studies with pain, vomitings and dyspepsia being the most common symptoms of presentation of cholelithiasis.

5. Conclusion

The present study concluded that the gall stones are becoming common among individuals of age 20-39 years, especially females with other risk factors like low educational status, lower socio economic status, sedentary lifestyle with irregular eating habits and obesity. 70% of the study population had pain in the right upper quadrant, followed by 64% who had dyspepsia. 12% were asymptomatic.

6. References

1. Kapoor VK. Cholecystectomy in patients with asymptomatic gallstones to prevent gall bladder cancer-the case against. *Indian J Gastroenterol.* 2006;25:152-4
2. Dutta, U., Garg P, K., et al. "Typhoid carriers among patients with gallstones are at increased risk for carcinoma of the gallbladder." *Am J Gastroenterol*, 2000; 95: 784-7
3. Misra, S., A. Chaturvedi, et al "Carcinoma of the gallbladder." *Lancet Oncol* 2003; 4: 167-76.
4. Baskaran, V. "Gallbladder carcinoma: a disease of the Indo-gangetic belt." *Trop Gastroenterol*, 2001; 22: 235.
5. Sharma V, Chauhan V.S. Nath G et al. Role of bile bacteria in gallbladder carcinoma. *Hepatogastroenterology*, 2007; 54:1622-1625.
6. Jayanthi V, Anand L, Ashok L et al. Dietary factors in pathogenesis of gallstone disease in southern India – A hospital based case-control study. *Indian J Gastroenterol.*2005;24:97-9
7. Sachdeva S, Khan Z, Ansari MA, Khaliq N, Anees A. Lifestyle and gallstone disease: Scope for primary prevention. *Indian J Community Med* 2011;36:263-7.
8. Sakorafas GH, Milingos D, Peros G. Asymptomatic cholelithiasis: is cholecystectomy really needed? A critical reappraisal 15 years after the introduction of laparoscopic cholecystectomy. *Dig Dis Sci* 2007;52:1313-1325.
9. Halldestam I, Enell EL, Kullman E, Borch K. Development of symptoms and complications in individuals with asymptomatic gallstones. *Br J Surg* 2004;91:734-738.
10. Kapoor VK. Cholecystectomy in patients with asymptomatic gallstones to prevent gall bladder cancer: the case against. *Indian J Gastroenterol* 2006;25:152-154.
11. Bonatsos G, Birbas K, Toutouzas K, Durakis N. Laparoscopic cholecystectomy in adults with sickle cell disease. *Surg Endosc* 2001;15:816-819.
12. Ebert EC, Nagar M, Hagspiel KD. Gastrointestinal and hepatic complications of sickle cell disease. *Clin Gastroenterol Hepatol* 2010;8:483-489.
13. Kao LS, Kuhr CS, Flum DR. Should cholecystectomy be performed for asymptomatic cholelithiasis in transplant patients? *J Am Coll Surg* 2003;197:302-312.