

IDENTIFICATION OF FATTY LIVER DISEASE PATIENTS OF GALLSTONE DISEASE IN NON-ALCOHOLIC FATTY AND ITS ASSOCIATED FACTORS IN TERTIARY CARE HOSPITAL (DOW UNIVERSITY OF HEALTH SCIENCES)

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DOI: <https://doi.org/10.5281/zenodo.15094131>

Keywords

Article History

Received on 19 February 2025

Accepted on 19 March 2025

Published on 27 March 2025

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Abstract

Background: At present-day only, an ultrasonography-based research have assessed gallstone incidence. The goal of the current study was toward examine the frequency of cholecystolithiasis.

Methods: From a data was collected National institute of liver disease (NILGID) a total of 307 patients (157 females and 150 males) were studied using ultrasonography.

Results: A total of 307 patients (157 females and 150 males) were studied. 113 females and 68 males were diagnosed with gallstones sonographically.

Conclusion: The development of gallstones in male and female a total of 307 were studied using ultrasonography. Our results shown data high frequency rate in females then male with gallstone.

INTRODUCTION

Gall bladder disease (GSD) is a public gastrointestinal disease. Around 10-20% of the Domestic adult populations are presently with GSD. Notably GSD is also strongly related with Gall bladder, colorectal cancer a pancreatic incident. The Nationwide Institutes of Health assessed that nearly 3000 deaths (all deaths 0.12%) annually were ascribed toward GSD of complications. In China the prevalence of GSD is 12.1 and increasing greatly. To explore the molecular mechanism of gallstone development and to prevent it from further

processing into Hepatobiliary disorders is of great significance. The epidemiological data suggests that approximately 25% of the overall risk of gallstones is associated with genetic factors, other risk factors for asymptomatic gallstones include obesity, age, diabetes, hyperlipidaemia, high caloric intake, Hepatitis C and metabolic syndrome (MetS). In the MetS status, Non-alcoholic fatty liver disease occurs more frequently and it is common risk factor of Gallstones. Studies have suggested that asymptomatic GSD were more prone to develop NAFLD due to

impaired gall bladder motility and increased bile lysogenicity.(Sheng & Zhang, 2021)

The currently steatosis of hepatic in the nonappearance of further etiologies accountable for subordinate deposition fats in liver so that is called Non-alcoholic liver fatty disease. NAFLD is characterized through hepatic steatosis by regular progression toward fibrosis of liver and lastly liver disease end stage is. In US, NAFLD is the major cause of liver disease with great occurrence of 20-30%. Presently, NAFLD is the third (3rd) most public cause for transplant liver in US. Co-morbidities plus type 2 (T2DM), diabetes mellitus, visceral obesity, metabolic syndrome and dyslipidaemia. Further risk reasons for the growth of NAFLD include disease of gallstone, sleep deprivation, , cholecystectomy ,syndrome of polycystic ovarian and hypertension. The furthestmost mutual kinds of gallstones are cholesterol gallstones, the threat causes related are alike to individuals related by NAFLD. In 2013 National Health US and Nutrition Survey Examination (NHANES) report that taking had a cholecystectomy might be a danger cause for growth of NAFLD (Kichloo et al., 2021).

NAFLD contains both non-alcoholic fatty liver and steatohepatitis non-alcoholic (NASH) by or lacking erratic grade of fibrosis. Cross-sectional research studies in patients through NASH have presented that 30-40% of patients require progressive liver fibrosis on the period of presentation, while 10-15% have well-known cirrhosis. The pathological picture of fatty liver disease of non -alcoholic look like to that of alcohol prompted liver injury, however this arises in those patients who don't consume alcohol (Prashanth et al., 2009).

Epidemiological Features

Risk Factors

The risk features related with non-alcoholic fatty liver disease (NAFLD) are Hyperlipidaemia, Type 2 (T2DM) Diabetes Mellitus and Obesity. In non-alcoholic fatty liver disease (NAFLD), the reported prevalence of obesity varied between 30-100%, for type 2 diabetes mellitus (T2DM) varied between 10-75% and for hyperlipidaemia varied between 20-92%. In overweight persons (well-defined for example body mass file of at minimum 30) the frequency of non-alcoholic fatty liver disease rises through a cause of

4.6. The threat and severity of Non-alcoholic fatty liver disease (NAFLD) rises with type 2 (T2DM) diabetes mellitus regardless of body mass index (BMI). Truncal fatness looks to be an significant danger cause for Non-alcoholic fatty liver disease (NAFLD) even in patients with standard body mass index. The risk of Non-alcoholic fatty liver disease (NAFLD) increases with hypertriglyceridemia slightly than hypercholesterolemia.

Non-alcoholic fatty liver disease might disturb persons of any age stage. In furthestmost sequence, the characteristic patient with Non-alcoholic fatty liver disease is a central woman aged, then several have originate higher frequency of Non-alcoholic fatty liver disease in males as compare to in females.(Angulo, 2002)

Prevalence

The furthestmost publically cause of abnormal liver tests amongst United States adults in that is Non-alcoholic fatty liver disease (NAFLD). The prevalence increases to 57.5 percent to 74 percent in obese persons. The incidence of NAFLD in areas of urban of Pakistan amongst lower societies were 21%, medium societies were 27% and higher societies were 42% whereas for Rural areas of Pakistan among lower societies were 9%, middle societies were 15% and higher societies were 27% (Pati & Singh, 2016). The prevalence of NAFLD was found to be 72.4% among patients with T2DM and MetS in Pakistani population. Presence of diabetes, hypertriglyceridemia, obesity and hepatomegaly were related with upper incidence of NAFLD with common of cases originate in females (Misra & Khurana, 2009). A study stated that in T2DM the incidence of fatty liver was 60.8% (Luxmi et al., 2008). BMI high was originate as an self-regulating analyst of fatty liver. A research stated that the frequency of NAFLD was 51% in patients of diabetic and 92.15% patients with NAFLD had hypertriglyceridemia. Right upper abdomen heaviness was the most common presentation of NAFLD (Ijaz-ul-Haque Taseer et al., 2009).

Clinical Manifestations

Clinical Features

At the time of diagnosis most of the patient with fatty liver disease non-alcoholic that have n no

symptoms and signs disease of liver on the period of analysis but many patients' complaints of anxiety on upper abdomen of right side, fatigue and malaise. In children with non-alcoholic fatty liver disease Acanthosis nigricans may be a finding. Outcomes of liver disease chronic and decreased amounts of platelets recommend that progressive disease by cirrhosis is present.

Laboratory Abnormalities

The furthestmost commonest and only the often laboratory deviation found in patients with non-alcoholic fatty liver disease are raised serum levels of aspartate aminotransferase, alanine aminotransferase or both. Serum alkaline phosphatase, g-glutamyl transferase, or both are above the normal range in many patients although their degree of elevation is less than alcoholic hepatitis. Other laboratories abnormalities include hypoalbuminemia, hyperalbuminemia and prolonged prothrombin time may found in cirrhotic-stage non-alcoholic fatty liver disease. In half of the patient's serum ferritin levels found to be elevated.

Histologic Findings

fatty liver disease Non-alcoholic and liver damage cause by alcohol abuse are histologically indistinguishable. In children with Non-alcoholic fatty liver disease portal inflammation may be predominant as opposed to lobular infiltrate. The presence of features (i.e. hepatocyte ballooning and necrosis, steatosis, glycogen nuclei, mixed inflammatory cell infiltration, fibrosis and Mallory's hyaline) only or in mixture results used for the widespread spectrum of fatty liver Non-alcoholic disease. In children with Non-alcoholic fatty liver disease Mallory's hyaline is notable absent. Presence of fibrosis in Non-alcoholic fatty liver disease recommends severe and advanced liver injury. A numeral of cross-sectional research together with 673 liver biopsies revealed that at the time of diagnosis up to 66% of patients some degree of fibrosis found whereas in 25% of patient's septal fibrosis and in 14% well established cirrhosis found.

Pathogenesis

The liver shows an important role in bring in serum free fatty acids, storing lipids and lipoproteins and lipid metabolism. The pathophysiology of NAFLD is

not clear yet but the factors that progresses to hepatocellular damage due to accumulation of triglyceride are not well understood. The oxidation or export of hepatic lipids leads to accumulation of hepatic triglycerides while synthesis or influx of hepatic lipids is being controlled by local or systemic factors i.e. Insulin resistance.

Insulin Resistance

The pathogenesis resistance of insulin involves environmental factors and genetic polymorphisms which effect insulin action and secretion. Increased serum fatty acid levels due to hyperinsulinemia are occupied up through the liver and leads to triglyceride making and hepatic steatosis. Lipogenesis of Hepatic complete up regulation of lipogenic transcription aspects is promoted by chronic hyperinsulinemia and may result in activation of profibrotic cytokines as like growth factor of connective tissue.

Hepatic Lipid Metabolism

Microsomal triglyceride transfer protein (MTP) produces very low-density lipoproteins (VLDL) by incorporating triglyceride into apolipoprotein B (apo B). This VLDL is exported from the liver as a lipid. A reduction in apo B synthesis and MTP activity may result in impaired hepatic lipid export and triglyceride accumulation.(Adams et al., 2005)

Diagnosis

Entities originate with asymptomatic raise of aminotransferases, unexplained persistent hepatomegaly or radiological findings of fatty liver are suspected for NAFLD. To eliminate alcohol abuse for example the reason disease of liver a thorough effort is made for the diagnosis of NASH. For differentiating alcoholic from non-alcoholic fatty liver disease AST/ALT percentage helps, the medical diagnosis and standards of liver tests have lowly prognostic value used for diagnosis and separating steatosis as of NASH. For determining the amount and presence of fatty infiltration of liver imaging studies are useful but can not be used for the accurate determination of the cruelty of liver damage. Liver Biopsy can confirm the clinical suspicion of NAFLD. The day-to-day dose of alcohol as small as 30g in males and 20g in females may be hepatotoxic.

For patients who deny intake of these or higher doses of alcohol, the cause of alcohol can be excluded for liver diseases.(Angulo, 2002)

Significance of the Study

Chronic liver disease is a known risk factor for gallstones, little is known about gallbladder disease (GBD) in individuals. Therefore, we determined the prevalence rate of gallstone, age and gender wise, there is an instant and immediate requirement of community-based identification of important targets in gallstone patients and its spread in Pakistani population to improve existing methodologies in order to reduce mortality rate. Data based record prevalence of gallbladder stone in patients.

Objective of the Study

The purpose of our study was to analyse the prevalence of cholecystolithiasis in male and female ultrasonography-based study.

Methodology

This was a population-based retrospective study done at the National Institute of Liver and GI Diseases (NILGID) of Dow University of Health Sciences Karachi. A total sample of 307 patients was included. The duration was one year, from September 2018 to

September 2019. We included both genders of patients of any age with gallstones and excepted patients by a history of seropositive viral hepatitis, autoimmune disease, or Wilson's disease. Steatosis, or hepatitis, was identified sonographically in all patients.

Results

Data analysis showed that 157 (51.14%) were females and 150 (48.85%) were males. The mean age of the participants was 62.5 ± 0.8 years. A positive family history of gallstones was reported by 6.6 % of the participants. Overall, gallstones were identified sonographically in 68 males (45.33%) and 113 females (71.97%) Table 1 Figure 1. Patients ranged from 15-85 years of age with mean age of 62.5 ± 0.8 years. Supreme quantity of patients (gallstone detected sonographically) were in the age group of 66-85 years, constituting 28.33% of total gallstone patients detected sonographically Figure 2. Age wise distribution data for male showed 8 (11.76%) in age group 25-45 years, 24 (35.29%) in age group 46-65 years, 36 (52.94%) in age group of 66-85 years (Table 2). Age wise distribution data for female showed 15 (13.27%) in age group 25-45 years, 47 (41.59%) in age group 46-65 years, 51 (45.13%) in age group of 66-85 years Table 2.

Table 1 Prevalence of gall stone according to gender

Gender	Male n (%)	Female n (%)
Gall stone presence	68 (45.33%)	113 (71.97%)

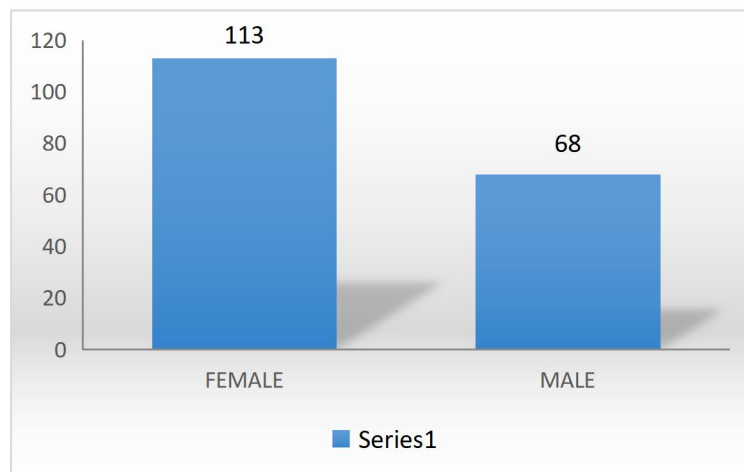
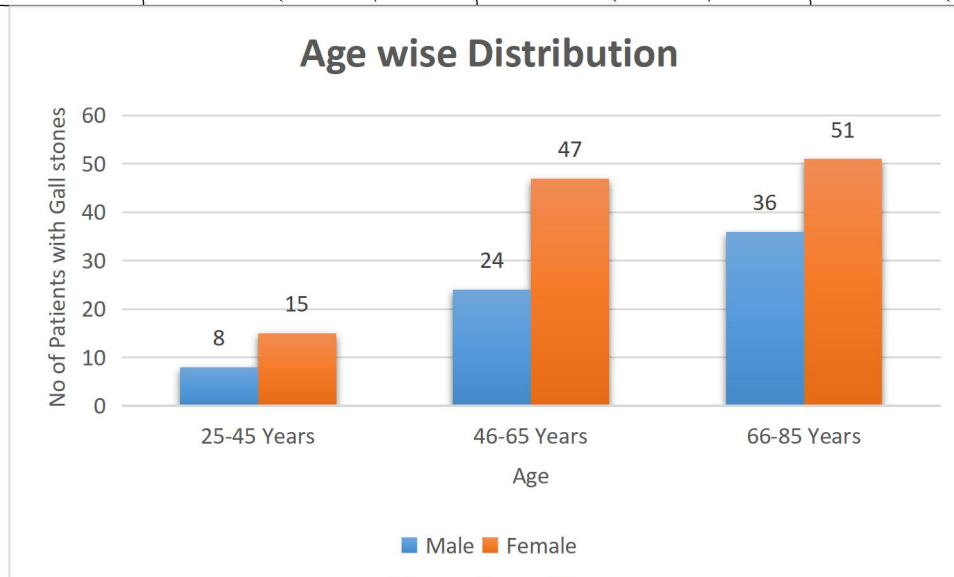


Figure 1

Table 2 Age wise Distribution

AGE	25-45Years	46-65 Years	66-85 Years
MALE	8 (11.76%)	24 (35.29%)	36 (52.94%)
FEMALE	15 (13.27%)	47 (41.59%)	51 (45.13%)

Figure 2
4ex

Discussion

The current study research is the first retrospective research of gallstone prevalence in a male and female. Gallbladder cancer is infrequent in established in US countries, it individual accounts for 0.5% of all gastrointestinal cancer, secretarial for a smaller amount than 5,000 cases yearly (1 to 2.5 per 100,000) (Hundal & Shaffer, 2014; Randi et al., 2006). Worldwide, gallbladder cancer has a low occurrence <2 per 100,000, but has a wide variance Elsewhere, great frequency rates arise in North and South American Indians. Middle frequency rates happen in Asian populations (Randi et al., 2006). Other high-risk regions are scattered though Eastern Europe (14/100,000 in Poland), northern India (as high as 21.5/100,000 for women from Delhi) and south Pakistan (11.3/100,000). Well-known important risk elements for the progress of cholecystolithiasis in adults include age, male and female gender (Lein & Huang, 2002; Novacek, 2006; Radmard et al., 2015; Randi et al., 2006). 68 were male and 113 were female with gallstones in our study population.

Gender alterations exist with geographic variances, commonly being unfavourable for women. In individuals locals with the uppermost incidence, women have incidence rates greater than men. With age, gallbladder cancer increases. Our results shown data high frequency rate in females then male with gallstone.

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