INTRODUCTION

Cholelithiasis or Gallstone Disease (GSD) portrays significant burden for healthcare structure globally. It is also considered as one of the most common disorders among patients with abdominal discomfort including epigastric pain, nausea, loss of appetite, vomiting etc [1,2]. Majority of non-indicative or asymptomatic patients with gallstones, have reported as an accidental finding through scheduled health check-up or for a dissimilar medical problem [3-5]. Currently, gallbladder ailment is a common trouble in developed nations as well as in countries like India [6]. The cause for such diseases might be enormous [7]. GSD is a chronic recurrent hepatobiliary disease, caused by impaired metabolism of cholesterol, bile acids and bilirubin resulting in development of gallstones in the bile duct or gallbladder and hepatic bile duct [8].

Gallstones are chiefly categorised as pigment and cholesterol gallstones; cholesterol gallstones are more than pigment gallstones in western nations as compared to Asian population [9]. Varied and pigment gallstones are very common in the southern region of India [10-13]. While cholesterol gallstones are common in the northern part of the nation [14-17]. In a preceding epidemiological research, it was observed that demographic and social variables do not confer to the composition of pigment gallstone [18]. Expansion of cholesterol gallstones is correlated to infiltration of cholesterol in bile as well as in gallbladder stasis [19]. Pigment gallstones expand from the liberation of β-glucuronidase [20]. [Table/Fig-1] shows pathogenesis of gallstone formation.

The factors pertaining to nutrition have been measured dominant in many studies, and this is strappingly sustained by the ruling of Pixley F et al., by means of ultrasonography, which gallstones are only short as ordinary in British vegans as in the rest of the inhabitants [21]. There are numerous dissimilarities amid vegan and regular food. Nevertheless, there is no investigational validation to give away non-vegetarian food.

ABSTRACT

Introduction: Increased consumption of meat is associated with gallstone ailment as intake of non-vegetarian food increases biliary acid, a trimethylamine transporter that temps the gallstone cholesterol.

Aim: To determine the relationship of dietary factors with gallstones amongst Indian patients.

Materials and Methods: The present study was a case-control study which was conducted at Jubilee Mission Medical College Hospital and Research Institute, Thrissur, Kerala, India from February 2008-June 2009. Study population included patients having cholelithiasis or lately identified with indicative or non-indicative gallstones. The nutritional ingestion was measured by qualified nutritionist by means of semi-quantifiable survey on food-frequency questionnaire. The subjects were matched up in age and gender proportions having analogous demographic features. The usual ultrasound of abdomen was performed by medical practitioners.

Results: There were 200 patients included as cases and 200 controls, of the cases 112 (56%) were males and 88 (44%) were females, age range was 10-80 years. Preponderance was noted in age group of 31 to 40 years mounting to 52 (26%) pursued by 22.5% controls in the age groups of 21 to 30 and 41 to 50 years. According to the dietary interests, the vegetarian and non-vegetarian percentage ratio was of 21.5 and 78.5.

Conclusion: The risk factors responsible for the development of Gallstone Disease (GSD) were food including meat, cholesterol, tamarind, and squat in fibre. In case of such ailments, vegetarian food with suggested calories and should be encouraged. Therefore, the anticipatory measures like amendments in routine and food should be carried out to eradicate these hazardous factors.

Keywords: Cholelithiasis, Cholesterol, Hepatic bile duct
refined sugars and cooking oil, but unenthusiastically connected with reasonable ingestion of alcohol and coffee in Japanese and Western inhabitants [23,29,32-34]. The peril of gallstone was critically linked with a vigorous nutritional prototype in women from Iran and as well as unconventional Mexican food outlines [35]. The present study was done with an aim to determine the relationship of dietary factors with gallstones amongst Indian patients.

MATERIALS AND METHODS

This case control study was performed at Jubilee Mission Medical College Hospital and Research Institute, Thrissur, Kerala, India from February 2008-June 2009. Consent was taken from all the participants. Study population consisted of 400 participants, 200 case and 200 controls.

Inclusion criteria: Patients undergoing investigation of gallstone illness having diagnosed as indicative or non-indicative of gallstone disease were included.

Exclusion criteria: Exclusion criteria comprised of patients who underwent open cholecystectomy, biliary drainage procedure, solemn co-morbidity which needed long-term admission to the hospital; and identified with varied gallstones.

The nutritional ingestion was measured by practicing dietician. A semi-quantitative questionnaire was used for the study, that included occurrence of diet particulars, character of cereal used, non-vegetarian diet, monthly oil consumption, sugar consumption per day, tamarind intake per week, and as well as regularity of every day beverage were incorporated in daily food.

The subjects were matched up in age and gender proportions having analogous demographic features. The usual ultrasound of abdomen was performed by medical practitioners.

STATISTICAL ANALYSIS

The data was collected and analysed by using Chi-Square test and Student’s t-test and software for analysis will be SPSS version 20.0 and a p-value <0.05 was considered to be statistically significant.

RESULTS

There were 200 patients included in the study as well as there were 200 controls for the analysis. Out of total, 112 (56%) were males and the rest 88 (44%) were females, with age ranging from 10-80 years. Preponderance of cases were noted in the age group were of 31 to 40 years- 52 (26%) [Table/Fig-2] followed by 22.5% controls in the age groups of 21 to 30 and 41 to 50 years. According to the dietary interests, the vegetarian and non-vegetarian percentage was of 21.5% (43) and 78.5 (157) [Table/Fig-3].

A total of 95% CI for gallstone ailment as per the nutritional outline sort is displayed in [Table/Fig-6].

DISCUSSION

According to this study, there are many dietary causes that are very significant in the aetiology of gallstones. Predominantly, a high intake of drenched fats and refined sugar can possibly amplify the risk of gallstone configuration, while an elevated ingestion of saturated fats, and nutritional cholesterol might guard against gallstone creation. Furthermore, the risk of cholesterol gallstone was connected with nutritional prototype having pork, fried food; beef etc., whereas there was no relationship between menace of pigment gallstone and nutritional model. The function of dietary factors in cholesterol gallstones has been described by many authors [36,37]. The chief hazard issue incorporated drawn out fasting, low-calorie diet, stoutness, edible oil, refined sugar and high calorie intake [38-42].
Obesity was established as an imperative jeopardy reason for gallstones verifying the conclusion of numerous studies done previously [43-46]. Gallstone ailment is caused by deposit of hard fat or mineral in the gallbladder. In this ailment, the stones block part of biliary mechanism and create exasperation of gallbladder and difficulties. This disarray can source life intimidating circumstances, if left untreated [47]. The risk factors responsible for the development of GSD were food including meat, cholesterol, tamarind, and high in fibre. In case of such ailments, vegetarian food with suggested calories should be encouraged. Therefore, the anticipatory measures like amendments in routine and food should be carried out to eradicate these hazard factors.

**REFERENCES**


For any images present appropriate consent has been obtained from the subjects. NA

Was informed consent obtained from the subjects involved in the study? Yes

For any images presented appropriate consent has been obtained from the subjects. NA

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AUTHOR DECLARATION:
Financial or Other Competing Interests: None
Was Ethics Committee Approval obtained for this study? No
Was informed consent obtained from the subjects involved in the study? Yes
For any images presented appropriate consent has been obtained from the subjects. NA

PLAGIARISM CHECKING METHODS:
Plagiarism X-checker: Aug 08, 2020
iThenticate Software: Jan 13, 2021 (14%)

ETYMOLOGY:
Author Origin

DATE OF SUBMISSION:
Date of Submission: Aug 06, 2020

DATE OF PEER REVIEW:
Date of Peer Review: Sep 08, 2020

DATE OF ACCEPTANCE:
Date of Acceptance: Oct 11, 2020

DATE OF PUBLISHING:
Date of Publishing: Apr 01, 2021