



Risk Factors for Pre-Cholecystectomy Patients' at AL-Sadder Medical City

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Abstract:

Objective: this study aimed to assess risk factors of cholelithiasis for patients under waiting surgery in al-najaf al-ashraf governorate hospitals, and to find out relationship between risk factors related cholelithiasis and patients' demographic characteristics. **Methodology:** A descriptive study design (cross section) was carried out through the present study in order to achieve the early stated objectives. From period 25th of Dec 2018 to 20th of May 2019. A non-Probability (Purposive Sample) of (120) patient with who were prepared to admitting to operation room for cholecystectomy. The study is conducted in Al-Najaf City/ Health Directorate of Al-Najaf AL-Ashraf/ AL- Sadder Medical City/ Operation Rooms. Data collected through using a questionnaire consisting of two parts: (7) items, which included age, gender, level of education, residency, marital status, socio-economic status and occupational status **part II:** This part consists of (12) items, related to risk factors including family history of GS, past history of liver diseases, history of D.M., Smoking, Drinking Alcohol, Drinking Beverages Containing Caffeine, BMI, History of rapid weight loss, hyperlipidemia, pregnancy, daily activities and diet. **Results:** The study shows the most of the study sample with cholecystectomy (76.7%) are female sex within age group (31-40) years old most of them married, also A significant relationship ($p < 0.05$) between age and DM history and diet. A significant relationship ($p < 0.05$) between gender and each of smoking, drinking alcohol, DM history, pregnancy and daily activities **Conclusion:** Generally, the study confirms that increasing age, obesity, diabetes mellitus, smoking and diet, are major risk factors of gallstone disease.

INTRODUCTION

The gallbladder (GB) is a small organ placed in the right upper epi-gastric quadrant, beneath the liver. The chief function of GB is storage bile (formed in the liver) and secrete it into the small intestine in order to facilitate digestion. Bile is consist of water, cholesterol, fats, salts precipitated form bile (normally result from break down of fat), and a stain known as bilirubin.⁽¹⁾Gallstone disease (GSD) is represent one of global gastroenterologic disorders in worldwide.⁽²⁾⁽³⁾Cholelithiasis formation result from multifactorial, either constitutional (unmodifiable) or environmental (modifiable) factors conflicting to lithogenesis. Most of them are Gender, race, age, heredity obesity, rapid weight loss, dyslipidemia, usage of estrogen or oral contraceptives, pregnancy, diet, cirrhosis of the liver, diabetes mellitus (DM), active or passive smoking and alcohol consumption.⁽⁴⁾⁽⁵⁾ the cause of (GSD) are not the same in different parts of the world.⁽⁶⁾ The frequency of Biliarylithiasis varied among different countries and ethnic populations as well as various regions of the countries.⁽⁷⁾The gallstones formed from essential components which are included lipid, bile dyestuff, calcium, hepatic bile structure, biliary glycoprotein, infection, dietary factors and environmental factors.⁽⁵⁾The “female, fat, fair, fertile, and forty year old,” patient that sometimes also is “flatulent” and “flabby” represent the main five or seven “F” clinical sign of gallstone disease.⁽⁴⁾GSD may be asymptomatic but also considered the major leading causes of hospitalization with epigastric pain, nausea, vomiting, abdominal pain, and loss of appetite.⁽⁸⁾Biliarylithiasis, mainly categorize to three common kinds: cholesterol stone (CS), pigment stone (PS) and mixed stone (MS). Additionally pigment stones are classified to coated brown stones and shapeless black stones.⁽⁹⁾⁽¹⁰⁾

METHODOLOGY

A descriptive study (cross section design) was implement through the present study to the purpose of accomplish precocious the goal. The Study performed in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate/ public hospitals/ operating room.A non-probability (purposive sample) of (120) patients with Cholecystitiswho were admitted to hospital/ operating room for cholecystectomy. An assessment instrument were utilize to determine the risk factors of GSD for patients who were entered for operating room for cholecystectomy. The ultimate copy comprises of the following parts:**part I:** patient Demographic Data which consists of (7) items, which included age, gender, level of education, residency, marital status, socio-economic status and occupational status. **part II:** Risk Factors of Gallstone:This part consists of items related to risk factors GBS, which included: family history of GS, past history of liver diseases, history of D.M., Smoking, Drinking Alcohol, Drinking Beverages Containing Caffeine, BMI, History of rapid weight loss, hyperlipidemia, daily activities and diet. The information were gathered through the developed questionnaire, and by way of interview technique with the subject who individually interviewed. The data collection was carried out from 4th of Feb.

2019 to 15th of April 2019. A content validity of the study instrument is conducted through a group of experts who have a years of experience in nursing field.

The Study Results

Table (1): Statistical distribution of study sample by their socio -demographic data

Items	Rating And Intervals	Freq.	Percent.
Gender	Male	28	23.3%
	Female	92	76.7%
	Total	120	100%
Age / Years	<= 20.00	2	1.7
	21.00 - 30.00	25	20.8
	31.00 - 40.00	41	34.2
	41.00 - 50.00	20	16.7
	51.00 - 60.00	16	13.3
	61.00 - 70.00	13	10.8
	71.00+	3	2.5
	Total	120	100%
Marital status	Single	4	3.3%
	Married	107	89.2%
	Widowed	8	6.7%
	Separated	1	0.8%
Total	120	100%	
Levels of Education	Illiterate	29	24.2%
	Able to read and write	17	14.2%
	Primary school	24	20 %
	Secondary School	22	18.3%
	Intermediate School	18	15%
	Institutes	7	5.8%
	College	2	1.7%
	Postgraduate	1	0.8%
Total	120	100%	
Occupational Status	Employee	18	15%
	House wife	78	65%
	Free Business	9	7.5%
	jobless	6	5%
	Retired	4	3.3%
	Student	5	4.2%
	Total	120	100%
Residency	Urban	28	23.3%
	Rural	92	76.7%
	Total	120	100%
Economic Status	Sufficient	33	27.5%
	Barely Sufficient	80	66.7%
	Insufficient	7	5.8%
	Total	120	100%

The table demonstrated that the most of the study sample with cholecystectomy (76.7%) are female within age group (31-40) years old most of respondent (89.2%) are married. Concerning the level of education, the highest percent of study sample (24.2%) are illiterate and housewife (76.7%) living in rural residential area. In addition the socio-economic status the most of the study subjects there, income is barely sufficient (66.7%).

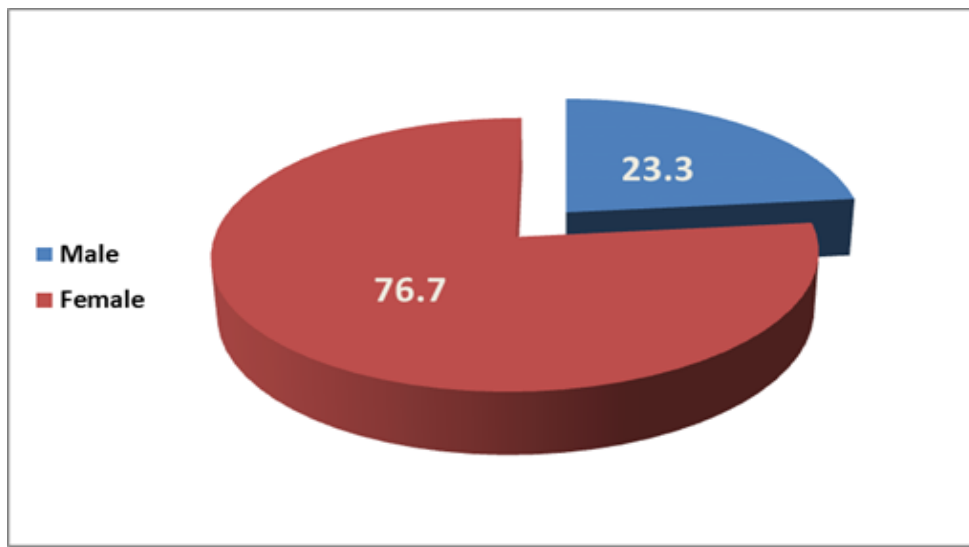


Figure (3.1) Pie chart for patient's distribution (percentages) according to gender

Table (2) Statistical distribution of study sample by their risk factors related to gallstone

Items	interval		
		Freq.	Percent.
family history of Cholelithiasis	Yes	38	31.7
	No	82	68.3
	Total	120	100%
Past history of liver disease	No	114	95.0
	Hepatitis	3	2.5
	Cirrhosis	3	2.5
	Total	120	100%
Smoking	Yes	22	18.3
	No	98	81.7
	Total	120	100%
Drinking Alcohol	Yes	1	0.8
	No	119	99.2
	Total	120	100%
drinking beverages containing caffeine	Yes	102	85.0
	No	18	15.0
	Total	120	100%
BMI	Underweight	1	0.8
	Normal	48	40.0
	Overweight	71	59.2
	Obese	0	0.0
	Total	120	100%
Exposure to rapid weight loss	Yes	77	64.2
	No	43	35.8
	Total	120	100%
History of D.M	No	100	83.3
	Before Cholelithiasis	11	9.2
	After Cholelithiasis	7	5.8
	Total	120	100%
History of hyperlipidemia	Yes	89	74.2
	No	31	25.8
	Total	120	100%
pregnancy	Yes	89	74.2
	No	31	25.8
	Total	120	100%
Daily activities	Walking	90	75.0
	Daily physical activities	22	18.3
	Exercises	8	6.7
	Total	120	100%
Diet	High fatty food	60	50.0
	Low fatty food	50	41.7
	Vegetables	10	8.3
	Total	120	100%

The above table demonstrated that most of patient's with cholecystectomy without family history of Cholelithiasis, liver disease, smoking, drinking Alcohol and D.M. Also the table explains that the majority of study subjects risk factors were(drinking high quantity of beverages containing caffeine, overweight, Exposure to rapid weight loss, History of hyperlipidemia, pregnant woman, daily activities depended on walking and those eating fatty food.

Table (3): Relationship between patients' risk factors related to gallstone and their Demographic Data

	Age	Gender	Residence	Educational Level	Occupational Status	Marital Status	Economic Status
	Relationship (contingency) Coefficient P Value						
Family history of Cholelithiasis	0.16 0.55	0.02 0.76	0.32 0.45	0.31 0.12	0.42 0.09	0.42 0.25	0.22 0.35
Past history of liver disease	0.32 0.45	0.16 0.55	0.12 0.55	0.14 0.66	0.14 0.74	0.12 0.55	0.14 0.36
Smoking	0.23 0.32	0.88 0.001	0.32 0.32	0.02 0.76	0.12 0.36	0.12 0.35	0.32 0.45
Drinking Alcohol	0.32 0.45	0.62 0.05	0.21 0.35	0.22 0.34	0.42 0.09	0.02 0.76	0.16 0.55
Drinking beverages containing caffeine	0.24 0.36	0.31 0.14	0.32 0.36	0.31 0.12	0.02 0.76	0.65 0.03	0.31 0.12
BMI	0.42 0.09	0.32 0.45	0.16 0.55	0.02 0.76	0.67 0.03	0.22 0.35	0.09 0.75
Exposure to rapid weight loss	0.23 0.35	0.32 0.45	0.32 0.45	0.31 0.12	0.34 0.55	0.31 0.12	0.42 0.09
History of D.M	0.79 0.01	0.82 0.01	0.42 0.15	0.35 0.15	0.12 0.45	0.25 0.35	0.31 0.12
History of hyperlipidemia	0.22 0.35	0.32 0.45	0.46 0.04	0.22 0.35	0.31 0.12	0.32 0.45	0.29 0.35
pregnancy	0.22 0.35	0.78 0.02	0.46 0.04	0.52 0.05	0.77 0.02	0.32 0.45	0.29 0.35
exercise	0.22 0.35	0.76 0.02	0.46 0.04	0.22 0.35	0.31 0.12	0.32 0.45	0.29 0.35
Diet	0.51 0.03	0.22 0.35	0.34 0.55	0.74 0.02	0.35 0.44	0.88 0.01	0.51 0.02

This table demonstrated that there is a significant relationship between age and DM history and diet at ($p < 0.05$); also a significant relationship between gender and each of: smoking, drinking alcohol, DM history at ($p < 0.05$). While pregnancy, and exercise significantly related with residency at ($p < 0.05$). Moreover this table illustrate that there is a significant association ($p < 0.05$) between educational level and pregnancy and diet.

In addition to occupational status the result indicated that there was a significant relationship ($p < 0.05$) between occupational status and BMI and pregnancy; also this table demonstrate a significant association between marital status and drinking beverages containing caffeine and diet at ($p < 0.05$) concerning socio-economic status that there is a significant relationship ($p < 0.05$) between economic status and diet.

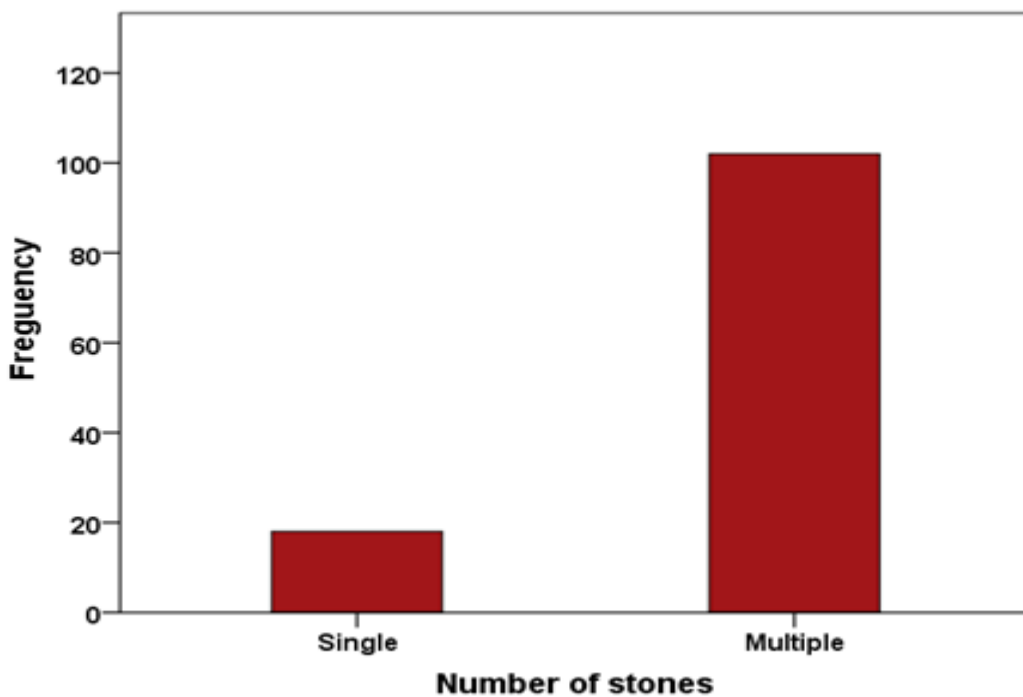


Figure (2) Statistical distribution (frequencies) of patients group according to the number of gallstone

Discussion of the Result

Part-I: The Study Sample Distribution according to their demographic data

According to (Table1) the study shows that the majority of the research sample are females. This result agrees with study result of (Hung et al., (2011) and Chen, et al., (2006) in their studies they found that the majority of study subject's sex are females. In regarding to age, the study indicates that most of patients are within age group (31- 40) years old. Ko, et al., (2005), they pointed in their study that the GBS more prevalent in women within (30-39) age group.⁽¹¹⁾⁽¹²⁾⁽¹³⁾

In regards to marital status, most of the study samples are married. Concerning the level of educations the highest percent is Primary school graduated. These results are in agreement with Boateng, (2014), and Mousa, and Abdul Ridha (2016), they pointed in their study that the majority of study subjects are married and but disagree with educational status who was graduated from primary school.⁽¹⁾⁽¹⁴⁾

About the study sample occupation, the present study shows that the majority of the research sample are housewives, these results matchd with Hita, et al., (2014) they said the high percent of participant

are housewives while the result of current study differs from study done by **Panpimanmas, and Manmee, (2009)**, who emphasized in their study that the majority of the study subjects are salaried worker.⁽¹⁵⁾⁽³⁾

In addition, the study results indicate that the majority of the research sample are living in rural area. **Zamani, et al., (2014)** they revealed in their study that the majority of the study subjects from rural residents.⁽⁶⁾

In regards to monthly income, the socio-economic status of the sample is Barely Sufficient. **Mousa, and Abdul Ridha, (2016)**, they claimed that the socio-economic status of the respondents is sufficient to meet some needed.⁽¹⁴⁾

Part 2: The Study Sample Distribution according to their clinical data related to risk factors of GBS

Concerning with risk factors of GBS in table (2) the majority of study sample have no family history of GBD, liver disease, smoking or exposure to second hand smoking, drinking Alcohol and D.M. this result disagree with **Goktas, et al., (2016)** they seen in there study that a family history play a role in occurrence of biliarylithiasis more than in those with, smoking, alcohol consumption, liver diseases and D.M.⁽¹⁶⁾

But **Shen, et al., (2017)** they pointed in the study that the high percent of study subject have a history of acute cholecystitis from nonalcoholic liver disease.⁽¹⁷⁾

Alghamdi, et al., (2018), they stated in there study regular intake of caffeinated beverage exacerbate the risk of GBD and the results of this study is considered consistent with those of current study.⁽¹⁸⁾

In regarding to body mass index, GBS more common in individual who suffering from overweight. **Zamani, et al., (2014) and Selvaraju, (2010)** they reported in there study the obesity is important factor in developing of stone formation.⁽⁶⁾⁽¹⁹⁾ farther than, the result shows the percent of participant with cholecystitis exacerbated after exposure them to rapid body weight loss this result consistent with study done by **Cruz-Monserrate, et al., (2016)**they emphasized that the GS creation in those with rapid weight loss greater than in those with normal weight.⁽²⁰⁾

In addition, the study results indicate that the majority of research sample have history of hyperlipidemia this result conducted with that there **Alghamdi, et al., (2018)**, they considered in there study that considered obesity, high cholesterol level as a predisposing factor for GS.⁽¹⁸⁾

In addition, the subjects' responses n present study regarding pregnancy the majority of research sample are previously pregnant this result agree with result of study done by **Al_saadi and Al_ardhi, (2012)** they found in their study that pregnancy constitute risk factors for biliarylithiasis.⁽²¹⁾

Concerning with daily activities the study demonstrate majority of the subjects' responses depending on walking every day this result agree with study of **(Dhamnetiya, et al.,**

2018)and(Hita, et al., (2014), They mentioned in their study the main participant are living sedentary lifestyle.⁽²²⁾⁽¹⁵⁾

The present study shows that the diet play an important role as a potential risk factor of cholelithiasis, this result matched with study done by **(Bilal, et al., 2016)** and **(Cuevas, et al., 2004)** they reported in there study that GS more common in those who eating food rich with fat.⁽²³⁾⁽²⁴⁾

Table (3): Relationship between patients' risk factors related to cholelithiasis and their Demographic Data

According to Table (3.3) which explains that there is a significant relationship ($p<0.05$) between age and DM history and diet; also a significant relationship ($p<0.05$) between gender and each of: smoking, drinking alcohol, DM history while pregnancy, and exercise significantly related with residency at ($p<0.05$),

Moreover this table illustrate that there is a significant association ($p<0.05$) between educational level pregnancy and diet.

In addition to occupational status a significant relationship ($p<0.05$) between occupational status and BMI and pregnancy, this result attached with study of **Al_saadi and Al_ardhi, (2012)**, they said that the increased number of pregnancies is associated with an increased risk of gallstones, Also this table demonstrate a significant association between marital status and drinking beverages containing caffeine and diet at ($p<0.05$).⁽²¹⁾

Also **Abu-Eshy, et al., (2007)**, they cleared in there study that the following factor (age, education, DM, smoking, pregnancies, obesity and coffee intake) are not significantly bonded with GBS creation.⁽²⁵⁾

Concerning socio-economic status that there is a significant relationship ($p<0.05$) between economic status and diet, this result in agreement with (Alishi, et al., 2017) and (Al_saadi and Al_ardhi, 2012), they mentioned in there study that are (age , gender, D.M., smoking, diet, pregnancy and no sedentary life style all increase the gallstone formation at ($p<0.05$), Al-Kayatt., et al., 2008), they stated in there study the female gender and overweight, having family history of GSD, multipartite and unhealthy dietare all constitute significant risk factors for bilarylithiasis.⁽²⁶⁾⁽²¹⁾⁽²⁷⁾ as well as Batajoo and Hazra, (2013) they pointed in there study that high significant relation between old age, female gender and high cholesterol level in the body yet Shabanzadeh, et al., (2016) they confirmed that a substantial associations for incident gallstones and age, female sex, BMI, but no substantial associations are found for, smoking, alcohol consumption, hyperlipidemia.⁽²⁸⁾⁽²⁹⁾ While the result of current study disagree with study done by Jessri, and Rashidkhani, (2015) and Abu-Eshy, et al., (2007) they conclude in there study that the persons who having a history of rapid weight loss, single, unemploys and having family history of gallstone disease significant related to increase the risk of gallstones at

(p<0.05).⁽²⁵⁾⁽⁸⁾ Henoa- Morán, et al., (2014) they cleared in there study that asymptomatic gallstones is positively related to old age, higher body mass index, and DM and they observed an inverse relationship between recreational physical activities and risk of GBS, especially in women.⁽³⁰⁾

CONCLUSIONS:

- The most study subject are female within age group (31-40) years old, who are married and live in urban residential area.
- A significant relationship between age and DM history and diet.
- A significant relationship between gender and each of smoking, drinking alcohol, DM history, pregnancy and daily activities
- Generally, the study confirms that increasing age, obesity, DM, smoking, and diet are major risk factors of gallstone disease.

RECOMMENDATIONS:

- The study recommended should be modifying the patients' lifestyle to prevent disease through preventing risk factors like smoking, non-vegetarian- diet.
- Using mass media to awareness the community about causative factors, signs & symptoms, complication, preventing gallstone disease
- Routinely examination should be done to emphasis the presence of asymptomatic GBD and avoid its complication if inflamed.
- Education and raising awareness of dietary habits and lifestyle are crucial as lifestyle and nutrition are primary causes of gallstones. In this sense, nurses have an important responsibility for community education.
- Additionally, further study should be done with large sample on population live at Najaf city to reveal prevalence and risk factors of gallstone disease.

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