OBESE PEOPLE MORE LIKELY TO DEVELOP GALLSTONES IN BAGHDAD CITY.[+]

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Abstract:

Objective: The aim of this study was to determine the obese is more likely to develop gallstones in Baghdad city.

Methodology:

A purposive (non-probability) sample of (50) patients, from (٣0-70) years old, who were selected the patients which come to Gastroenterology and Hepatology center in Baghdad. A descriptive study carried out from 25th of August 2005 to the end of December 2005.

According to the sample descriptive, form was constructed for the purpose of the study.

Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (correlation coefficient). Scores, Person, analysis that include, t-test, and stepwise multiple regression.

Results:

The study indicated that the mean of age was (52.6) year.

The majority of them were females, fair; multiparty, lived in urban area, obese, not read and write, and low socio-economic status.

The result of the study confirmed that the body mass index effected on the incidence of gallstones.

Recommendation:

The study recommended that it is necessary to following body mass index and relationship with gallstones.

المستخلص:

هدف الدراسة: تهدف الدراسة، الأشخاص البدينين هم أكثر الناس عرضة لتطور حصى المرارة في مدينة بغداد.

المنهجية: اختيرت عينة غرضيه (غير عشوائية) لـــ٥٠ مريض، من عمـــر 30 سنة إلى 70 سنة ممن راجعوا مركز الجراحة التخصصي لأمراض الجهاز الهضمي والكبد التعليمي (العيادة الاستشارية)، المدة من آب 2005 حتى كانون الأول 2005 وحسب مواصفات العينة، صممت استمارة استبانه لغرض الدراسة، تم تحليل البيانات خلال أسلوب الإحصاء الوصفي (التكرار، النسب المئوية) والأسلوب الإحصائي ألاستنتاجي (معامل الارتباط).

النتائج: أظهرت الدراسة إن معدل العمر 52. 6 سنة، وان اغلب العينة من النساء البدينات ذا البشرة البيضاء، متزوجة، ولود (لديها أطفال). أثبتت نتائج الدراسة، وجود علاقة بين مرضى حصى المرارة وكتلة الجسم.

التوصيات: أوصت الدراسة ضرورة متابعة وزن الجسم وعلاقته بحصى المرارة.

Introduction:

Gallstones are clumps of solid material that form in the gallbladder. They may occur as a single, large stone or many small ones. Gallstones are a mixture of compounds, but typically, they are mostly cholesterol. Most people with gallstones do not know they have them and experience no symptoms. For an unfortunate minority, however, gallstones can cause painful attacks [1].

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Gallstone disease is a common medical problem, affecting 10 to 15 percent of the population of the United States or more than 25 million people. About one million new cases of gallstone disease are diagnosed every year [5].

Obesity is a strong risk factor for gallstones. The more obese a person is, the greater his or her risk is of developing gallstones. Why obesity is a risk factor for gallstones is unclear. However, researchers believe that in obese people, the liver produces too much cholesterol. The excess cholesterol leads to supersaturation in the gallbladder [2].

Especially in women. A large clinical study showed that being even moderately overweight increases one's risk for developing moderately overweight increases one's risk for developing gallstones. The most likely reason is that obesity tends to reduce the amount of bile salts in bile, resulting in more cholesterol. Obesity also decreases gallbladder emptying [3].

Patients were divided into four groups according to body mass index (BMI, weight /height kg/m) and age [4].

In Iraq as regarded the prevalence showed that the women who have over (40) year, menopausal, multiparous, fair-skinned, use oral contraceptive or birth control pills, obese, high fat diets, low soio-economic status, are most likely candidates for gallbladder stones.

Factors that reduce the risk of getting gallstones include; maintaining a healthy weight and avoiding fasts or very low-calorie diets.

Methodology:

A descriptive study was using the body mass index as an approach for the determination of the obese people more likely to develop gallstones.

The study was carried out during the period of 1st of August 2005 to the ends of December 2005.

The setting of the study includes the Gastroenterology and Hepatology Teaching Hospital

A purposive "non-probability" sample of (50) patients with gallstones was selected out of the four teaching hospital in Baghdad City.

The criteria upon which the sample selection was employed. Included, the patients who were attending the hospital to treatment who were definitely diagnosed as having gallstones, which aged range between 30-70 years old, interval period before the operation from (4-10) days, who agreemed to participate in the study.

A questionnaire was designed and constructed by the researcher to measure the variables.

The questionnaire consisted of (2) parts. Part I was demographic information sheet and part II was the diagnostic processes aspect.

The data were collected through the utilization of constructed questionnaire, interview technique with the gallstones patients who are admitted the hospital in preoperatively stage.

Interview took a timetable of (30) minute for each patient when he/she waited for result of the investigations. The data was conducted during the period of 1st August 2005 to the ends of December 2005.

Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (correlation coefficient) [8].

Results:

Table (1): Demographic information.

Items		Frequency	Valid Percent	Cumulative Percent
Age / year	30-39	8	16.0	16.6
	40-49	10	20.0	36.0
	50-59	21	42.0	78.6
	60-69	11	22.0	100.0
	Total	50	.0100	
Gender	Male	15	30.0	30.0
	Female	35	70.0	100.0
	Total	50	100.0	
Marital Status	Married	50	100.0	100.0
	Single	0	0	
	Total	100	100.0	
Race	Frumentaceous	8	16.0	16.0

	Fair	20	40.0	56.0
	Brunette	9	18.0	74.0
	White	13	26.0	100.0
	Total	50	100.0	
Residential area	Rural	10	20.0	20.0
	Urban	40	80.0	100.0
	Total	50	100.0	
Number of children	1-3	34	68.0	68.0
	4-6	16	32.0	100.0
	Total	50	100.0	
Body mass index	Under weight (0-18.5)	0	0	0
	Normal weight (18.6-25)	0	0	0
	Over weight (25.1-30)	13	26.0	26.0
	Obese (30.1-40)	28	56.0	82.0
	Morbidity (40.1-70)	9	18.0	100.0
	Total	50	100.0	
Socio-economic status	High score (121–150).	10	20.0	20.0
	Middle score (90–120).	12	24.0	44.0
	Low score (less than 89).	28	56.0	100.0
	Total	50	100.0	
Use of contraceptive Drugs	Yes.	21	60.0	60.0
	No.	14	40.0	100.0
	Total	35	100.0	

Mean age = 52.6.

This table shows that the distribution of age indicated that the majority of the groups were (30-70) years old who were accounted for (39.6%). Most of them were female (64.8%). It indicated that most of them were married accounted for (100%). It also indicated that most of them from fair accounted for (37%). Most of them were urban area accounted for (74.1%), and the higher number of children for the groups was (1-3) children accounted for (63%).

The table shows that the distribution of body mass index, it indicated that the majority of them were (30.1-40 k/m^2) obese with frequency (51.9%), it calculate by ideal body weight, the table shows also that the distribution of the socio-economic status the majority of the groups were low score were accounted (51.9%), it calculate by socio-economic status score.

The majority of the groups were in use of contraceptive drugs were accounted (38.9%) for the cases.

Table (2): Pearson correlation between age, gender, race, number of children, body mass index, use of contraceptive drugs and socio-economic status.

Variable		Age	Gender	Race	Residential area	Number of children	Body mass index
Age.	Co. Sig. N.	1.000 C1 50	–.062 C2 .670 50	–.173 C3 .231 50	.240 C4 .093 50	.128 C5 .377 50	–.100 C6 .489 50
Gender	Co. Sig. N.	————	1.000 C7 50	.172 C8 .234 50	.000 C 9 .000 50	–.112 C10 .438 50	–.013 C11 .927 50

Race	Co. Sig. N.	_____	_____	1.000 C12 50	.067 C13 .643 50	.056 C14 .700 50	–.054 C15 .712 50
Residential area	Co. Sig. N.	_____	_____	_____	1.000 C16 50	–193 C17 .179 50	.167 C18 .246 50
Number of children	Co. Sig. N.	_____	_____	_____	_____	1.000 C19 50	–.112 C20 .439 50
Use of contraceptive drugs	Co. Sig. N.	.071 C21 .685 35	– C22 – 35	.042 C23 .812 35	.262 C24 .128 35	–.129 C25 .460 35	.016 C26 .928 35
Socio-economic Status	Co. Sig. N.	.138 C27 .338 50	.022 C28 .880 50	–.017 C29 .905 50	–.214 C30 . 135 50	.175 C31 .224 50	.132 C32 . 362 50

C = Cell Co. = Correlation coefficient. Sig. = Significant (2- tailed). N. = Number of sample.

This table shows that the relationship in the all of the cells except in cells (2, 9, 11, 13, 14, 15, 21, 23, 26, 28, and 29) that they had no relationship.

(C2 It means relationship between age and gender, C15 It means relationship between body mass index and race …etc.).

Table (3): shows the U/S diagnosis & physical examination for some patients of the study.

No.	Age	Diagnosis by U/S reports & physical examination as a specimen for some patients.
1	55	The G.B. contains multiple small gallstones. It is about 8 x 3 cm's in diameter with about 3-4 mm's wall thickness.
2	44	G.B. showing wall thickness with multiple gallstones measuring 1cm. in diameter.
3	59	G.B. stones showing measuring 1.7cm's wall thickness, clear bile, 7 biliary tree.
4	36	Contracted gallbladder with gallstones, enlargement with multiple variable size
5	65	The common bile duct is dilated 11-14 cm's in caliber & there is stone measuring 5-6 cm's in the C. B. D. The gallbladder contains multiple small gallstones 5x2 cm's in diameter with about 3-4 mm's wall thickness.
6	63	Show multiple gallstones with no dilatation of C.B.D
7	48	G. bladder is small in size, thick wall with large stone of about 2cm's (chronic cholecystitis) contracted normal fasting.
8	31	G.B. normal in size, double wall 6mm's thickness, multiple small stones
9	39	Liver is mildly enlarged 14.2 cm's with normal texture, G.B. with multiple stones largest one 7mm
10	57	G.B. normal in size and wall thickness, with multiple stones the largest 1.3cm's norma diameter C.B.D. & flow
11	41	C.B.D. stones, longitudinal scan shows two relatively large gallstones (arrows) within a dilated C.B.D.
12	52	C.B.D. stones in a patient who had undergone cholecystectomy. Coronal single-shot fas spin-echo MR cholangiopancreatogram shows multiple gallstones (arrows) within markedly dilated C.B.D. 30mm wide
13	64	The gallbladder measure is 49 x 33mm distended with multiple small size gallstones, and wall thickness measuring 3.9mm, normal intrahepatic biliary passage of G. B. D.
14	28	Gallbladder showing wall thickness with multiple gallstone measuring 1 cm's in diameter

		and papillomas.
15	44	Common duct stone (choldocholelithiasis) seen only following further dilatation of the common hepatic duct after administration of fatty meal
16	62	G.B. is normal in size and wall thickness; show multiple small stones each 2mm. in length normal intrahepatic biliary tree
17	47	G.B. normal in size and wall thickness, with multiple stones the largest 1.3cm's normal diameter C.B.D. & flow
18	60	The gallbladder is normal homogenic texture no defect focal lesion, the gallbladder measure 39 x 30mm distended with multiple small size gallstones inside wall thickness 3.9mm.
19	52	C. B. D. is dilated 1.2cm's. Stone seen largest 9mm in its lower end.
20	54	Liver is normal in size and texture no focal lesion seen; gallbladder looks with 3 gallstones each of about 9mm. normal biliary tree
21	27	Mild dilatation of intra and extra-hepatic biliary duct, C. B. D. measuring 8mm in diameter Stones in measuring 8.8mm see in sided and in distal end C. B. D. show thick wall cholengitis
22	67	G.B. is normal in size, thick irregular internal wall, with multiple stones the largest 1.3cm's normal diameter C.B.D. & flow
23	55	Common duct is dilated 17mm. there is suspection of stone in side of 16mm length the lower part of C. B. D. not dilated.
24	42	G.B. show mild wall thickness, with multiple small stones largest 0.2cm's 7mm bile duct is normal
25	50	Normal biliary tree G. B. is distended, size: 10.5 x 4.5 cm's thick wall: 5.8mm. Three stones seen in side largest: 1.4 cm's.

Discussion:

Table (1) indicated the findings of the study which revealed that age range between (30-70) years old, and that the majority of age were (50-59) years who accounted for (39.6%), the mean of the age was (52.6) years.

The incidence of biliary colic depends on the incidence of gallstones. For this reason, the condition is rare in patients younger than 20 years and increases with age, occurring in approximately (2-4%) of men older than 60 years and approximately (3-8%) of age-matched women [7].

Advanced age and overweight impaired biliary lipid composition, increased the number of patients with cholesterol gallstones [1].

The gallstones usually develop in adults between the ages of (20-50) years; about (20%) of patients with gallstones are over 40 years [5].

A distinct relationship to gender, the majority of the study (64.8%) was females more than men's which are (27.8%).

In general, women are probably at increased risk because estrogen stimulates the liver to remove more cholesterol from blood and divert it into the bile [9].

Biliary colic is more common in women than in men, primarily related to the 2- to 3-fold increased incidence of cholelithiasis in women [5].

Relative to their marital status; all of the sample (100%) were married.

A fertile woman is referring to the fact that woman who are pregnant may be symptomatic, and women with multiple pregnancies are more likely to develop stones, which are lead to increase in serum cholesterol and lipid levels in pregnancy, along with biliary stasis lead to a higher incidence of gallstones [9].

A striking race relationship was also seeing in the study, the majority of the sample (37%) was fair-skinned patients (table 1).

Prevalence of gallstones is highest in fair-skinned people of northern European descent and in Hispanic populations, and it is very high in the Pima Indians (up to 75% in the elderly) and increased in other Native American groups. In addition, Asians with stones are more

likely to have pigmented stones than other populations, nevertheless, the gallstones is low in African Americans [10].

Regarding to residency, the most of the group was living at urban areas, (74.1%) for cases and (18.5%) were living at rural areas (Table 1).

Gallstones are commonly found in urban areas more than were living at rural areas, because of the effect of the health perception-health management; sedentary lifestyle [5].

The study indicated that the higher number of children for the groups was (68%), which were ranged between (1-3) children for the cases, and the low number of children, were ranged "between" (4-6) children accounted (32%).

Gallstones develop when the secretion of cholesterol is elevated compared with the secretion of bile acids into bile. One of the risk factors for the formation of gallstones is pregnancy, because the pregnancy-induced increase in hepatic cholesterol, synthesis rates could play a critical role in the development of cholesterol stones [7].

Pregnancy increases the risk for gallstones, and pregnant women with stones are more likely to have symptoms than no pregnant women [6].

The table also shows that the distribution of body mass index indicated that the study findings had revealed that most of cases, which had experienced gallstone, had developed over weight, obesity and they were morbidity obese relative to the cases.

The result depended on using body mass index (B.M.I.) criteria, which list ranges of desirable or healthy weight based on height. (51.9%) were obese, (24%) were over weight, and (16.7%) were morbidity obese.

Overweight is a significant risk factor for gallstones. In such cases, the liver over-produces cholesterol, which is delivered into the bile and causes it to become supersaturated. Some evidence suggests that specific dietary factors (saturated fats and refined sugars) are the primary culprit in these cases, however, suggests that obesity itself, not any particular foods, triggers the process leading to cholesterol super saturation and the formation of stones [4].

The factors that contribute to getting gallstones include obesity this is a major factor, especially in women [9].

Advanced age and overweight impaired biliary lipid composition, increased the number of patients with cholesterol gallstones [2].

Human models of biliary sludge and gallstone disease are obesity and rapid weight-loss difasting; seem also to cause gallstone formation (~ 5 pounds/wk.) as result of very low [4].

The table reported that the majority of the groups were low score by the socio-economic status were accounted (51.9%).

Obesity and weight dissatisfaction are associated mostly with disadvantageous health behaviors and low socio-economic status, health behavior seems to be associated more with weight satisfaction than with actual weight [7].

This table presents that most of the majority of the female in the groups were use of contraceptive drugs were accounted (38.9%).

People who are overweight, who have gone on a crash diet, women and men between 20 and 60 years of ages, women who have used birth control pills or estrogen replacement therapy are more expose to develop gallstones than the others are [6].

The serum total protein, globulin and cholesterol levels were significantly increase in oral contraceptive and their control counterparts [9].

Table (2) indicated that there was positive relationship between age and residential area ($r = .240$, $p = 0.01$), number of children ($r = .128$, $p = 0.01$). Gender and race ($r = .172$, $p = 0.01$).

Residential area and body mass index ($r = .167$, $p = 0.01$), use of contraceptive drugs ($r = .262$, $p = 0.01$). Socio-economic status and age ($r = .138$, $p = 0.01$), number of children ($r = .175$, $p = 0.01$), body mass index ($r = .132$, $p = 0.01$).

Negative relationship between age and race ($r = –.173$, $p = 0.01$), body mass index ($r = –.100$, $p = 0.01$). Gender and number of children ($r = –.112$, $p = 0.01$). Residential area and

number of children (r = –.193, p = 0.01). Number of children and body mass index (r = –.112, p = 0.01), use of contraceptive drugs (r = –.129, p = 0.01). Socio-economic status and residential area (r = –.214, p = 0.01).

No relationship between age and gender (r = –.062, p = 0.01), use of contraceptive drugs (r = .071, p = 0.01). Gender and residential area (r = .000, p = 0.01), body mass index (r = –.013, p = 0.01). Race and residential area (r = .067, p = 0.01), number of children (r = .056, p = 0.01), body mass index (r = –.054, p = 0.01), use of contraceptive drugs (r = .042, p = 0.01). Body mass index and use of contraceptive drugs (r = .016, p = 0.01). Socio-economic status and gender (r = –.017, p = 0.01), use of contraceptive drugs (r = .061, p = 0.01).

This finding was supported with some literature, such as other researcher who reported that was significant association between gallstones and demographic characteristics such as age, marital status, race, education, use of contraceptive pills, social economic class, and body mass index [10].

The prevalence of gallstone disease was significantly higher in women than in men and increased with age, ethnic and geographic, Social factors include behavior of parents, siblings, peers and significant adults, but also family characteristics, social support, and socio-economic status [6].

Recommendations:

Based on the previously listed conclusions, the researcher recommends that:

1- Every patient with gallstones must have a guide notebook about the predisposing factors of gallstones.

3- Special session in TV (awareness program) by health consultants emphasize on the risk factors of suddenly reduction or overweight.

2- All the clients with positive gallstones must be educated and informed about:

A. The nature of diets and fluids.

B. Exercise.

Exercising regularly and vigorously may reduce the risk of gallstones and gallbladder disease, even in people who are overweight. Some evidence suggests that, in addition to controlling weight, exercise helps reduce cholesterol levels in the biliary tract, which could help prevent gallstones.

C. Regular follow-up include, (routine X-ray, ultra-sound investigations).

D. A drugs use and side effect.

3- The study recommended that it is necessary to following body mass index and relationship with gallstones.

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