

## The Prevalence of Silent Gall Stones And Its Relation To Some Risk Factors in Iraq

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### ABSTRACT:

#### BACK GROUND :

Gallstone disease is a common condition all over the world as well as in Iraq. Symptomatic gallstones definitely need surgical or medical treatment . To remove or treat silent gallstones is still a debatable subject. Gallstones are about twice as common in women than in men and their incidence vary according to some physical fasters

#### METHODS :

1016 adult volunteers from both sexes and of different age groups were examined by ultrasound in Medical city teaching hospital between January 2004 and August 2005, for the estimation of the prevalence of silent gallstones among Iraqi people and it's relation to some physical and familial factors was studied .

#### RESULTS:

The incidence of silent gallstones in both sexes was 3.3%. It is more common in women 4.09% than in men 2.2% and it increases with age, parity, and the use of contraceptive pills, and high intake of black tea The size of most of the stones was less than 20 mm and they were less than three in number, the gall bladder was with a normal wall thickness, no associated mass , or gallbladder wall calcifications, and no association with specific blood group or obesity was found.

#### CONCLUSIONS:

Silent gallstones were found in 3.3% of healthy Iraqi individuals, and they are associated with the same risk factors of symptomatic gall stones such as age , parity , familial contraceptive except that obesity and blood groups are not a major risk factor.

**KEY WORDS:** Silent gallstones ultrasound , Risk factors.

### INTRODUCTION:

Interest in the formation and clinical management of gallstone disease back to ancient times, as archeological evidence suggested that; members of the royal Egyptian families were affected by this disorder <sup>(1)</sup> .

Gallstones are about twice as common in women as in men. In elderly, the incidence rises to about 20% and sex incidence is roughly equal after the age of 80 years. about 5-15 % of gallstones are asymptomatic <sup>(2-3)</sup>. Ultrasound is the technique of choice to detect gallbladder stones , its diagnostic accuracy is 90-95% , ultrasound may also show thickened gallbladder wall (> 3mm)as well as other features of gallbladder diseases such as tender gallbladder ( sonographic Murphy sign) and pericholecystic fluid . Non visualized gallbladder also suggests a disease or non fasting patient <sup>(4-5)</sup>.

#### Risk factors for gallstones:

**1. Age and gender:** Because gallstones are rarely dissolved spontaneously, the cumulative prevalence of gallstones increases with age.

In addition to that, cholesterol secretion into bile increases with age, where as bile acid formation may decrease <sup>(6)</sup> . Gender is the most prominent risk factor for gallstone formation, with most studies reporting a two to three – folds increase in females <sup>(6)</sup>

**2. Obesity , weight , and Total Parenteral Nutrition:** Obesity is also a well-known risk factor for cholelithiasis. A large prospective study of obese women reported a strong linear association between body mass index (expressed in kg/m<sup>2</sup>) and the incidence of reported cholelithiasis. In the mentioned study, those with highest body mass index (>45 kg/m<sup>2</sup>) had a yearly incidence of gallstone formation of approximately 2% per year. <sup>(6)</sup>

**3. Pregnancy and parity:** Pregnancy is a greater risk factor for the development of gallstone, during pregnancy, bile become more lithogenic as a result of increased levels of estrogen, in addition

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to that, the volume of gallbladder will be doubled, and stasis is developed<sup>(6-7)</sup>.

**4. Drugs and contraceptive pills:** Estrogen is the most extensively studied drug or hormone that is associated with gallstone formation, also men taking estrogen have an increased incidence of symptomatic, gallstones. Other drugs include : lipid lowering drugs ( clofibrate) , somatostatin analog (octreotide ) for acromegaly<sup>(6)</sup> .

**5. Diet and dietary cholesterol :** Diet seems to be a logical variable that could account for some of the discrepancies in gallstone prevalence reported from various countries. Unfortunately, this has not been the case. The results of studies have been conflicting, especially in regards to fat consumption. Studies are too numerous to elaborate on, but even in animal models, fat consumption may or may not cause an increase in gallstone formation depending upon which species are used for experiments. Increase dietary cholesterol increases biliary cholesterol but there are no epidemiological or dietary data to link dietary cholesterol with gall stones<sup>(4)</sup> .

**NATURAL HISTORY OF ASYMPTOMATIC GALLSTONES** 1-2 % of patients per year with asymptomatic gallstones develop biliary symptoms, once it is symptomatic patient have 50 % chance of having their next attack within a year, and they have 1-2% per year risk of developing acute cholecystitis or other complication. The patient with most frequent and prolonged attacks of colic over several months are at greatest risk for acute cholecystitis.<sup>(7-8-9-10)</sup> .

**MANAGEMENT OF ASYMPTOMATIC GALLSTONES:**

A question is often raised about what to advice asymptomatic patients found to have gallstone during the course of unrelated studies. The presence of any of the following suggests a more serious course and should probably serve as a reason for prophylactic cholecystectomy : **1.** Diabetes mellitus , because the frequent and serious complications and high death rates ( 10-15%) in acute cholecystitis . **2.** Large stones : greater than 2cm in diameter because they produce acute cholecystitis more often than smaller stones. **3.** Calcified gallbladder wall , because it is so associated with carcinoma. **4.** The association of gallstones with colo-rectal carcinoma indicates cholecystectomy for silent gallstone. **5.** In laprotomy for other disease cholecystectomy is indicated when there is silent gallstone.

However, most asymptomatic patients have non of these special features.and need no interference (**9-10-11-12**).

**RESULTS:**

The incidence of gallstones in our total 1016 sample is 3.3% and in 610 women , which constitute 63% of total participants is 4.09% , higher than in 406 men which constitute 37% of participants which is 2.2% The age distribution of silent gallstones in women and men is shown in table (1).

**Table 1: Showing Age Distribution Of Silent Gallstones In Women and Men**

Age group years	No. of examined women	No. of women with stones	Incidence of stones %	No. of examined men	No. of men with stones	Incidence of stones %
(18-29)	180	2	1.1%	81	Zero	Zero
(30-39)	119	5	4.25%	65	Zero	Zero
(40-49)	123	5	4.06%	96	2	2.08%
(50-59)	89	8	8.98%	50	2	4.0%
above 60	99	5	5.05%	114	5	4.3%
Total	610	25	4.09%	406	9	2.2%

For gender women showed a higher rate and are 1.8 times (A.R=44%) more than men with silent stones (25 cases out of 610 in women while only 9 out of 406 in men) (table 2).By measuring A.R (women 40 years and above) are 2.5 times more liable to have silent stones than who where( less than 40 years) (A.R =60%) (table 2 ) Among risk factors most obvious was multiparity 350/685 of woman were multiparity . Silent stones was found in 20 /350 cases of multiparous women while only five have stones,5/235 were non multiparous

women and by measuring R.R multiparity associated with 2.7 times (A.R=63%) more than non multiparous for having silent stones (table 2) Silent stones where found in 10 /685 women with contraceptive pills intake out of 189 women with pills intake and do not have silent stones . Contraceptive pills associated with 1.4 times (A.R=28%) risk of having silent stones than those who never take it (table 2). There was 267 /1016 obese patients , 7 of them have silent gallstones , while 27 out of 715 of healthy or over weight have

gallstones , R.R=0.7 , so obesity is not a risk factors for silent gallstones , p= 0.35 (table 2). For blood groups the highest number of positive cases found in blood group O , 17 out of 17 for all other blood groups (R.R=1), which means no associations between blood group s and silent gallstones. (p=0.44) (table2) For family history 30 patients have positive family history and silent gallstones out of 4 have negative family history and silent stones , 148 have negative family history and no stones , 834 have positive family history and no stones (R.R=1.3) , so positive family history associated with 1.3 times risk for gallstones (A.R=23%) P= 0.33, (table4) Most of our

volunteers drink 3 or more 60 ml cups of tea each day (615 against 401) silent gallstones where found in 24 of them while in only 10 of those who drinks less than 3 (60 ml) cups each day ( R.R=1.6 and A.R=37% ) , P=0.39 (table 2) As regard the number and size of stones in our study : 7 men and 18 women have less than three stones , while only 2 men and 7 women have three and more silent gallstones (table 3) In 31 patients the size of the largest stone is less than 20 mm , while only in three of the subjects the size of largest stone was more than 20 mm( table 3) Non had gallbladder mass or calcifications and , all had normal gallbladder size and wall thickness.

Table 2: Showing The Effect Of Risk Factors

Risk factors	No. of cases with stones	No. of cases without stones	R.R (relative risk)	A.R % (Attributed risk percentage)
<b>1- Gender</b>				
Female	25	585	1.8	44 %
Male	9	397		
<b>2- Age/ years</b>				
Female 40 & above	18	293	2.5	60%
Female less than 40	7	292		
<b>3- pills intake</b>				
used	10	189	1.4	28.5%
never used	15	396		
<b>4- Parity</b>				
Multiparous	20	350	2.7	63 %
Non-multiparous	5	235		
<b>5- Obesity</b>				
Obese	7	267	0.7	
Non- obese	27	715		
<b>6- Blood groups</b>				
O positive /Others	17 / 17	491 /491	1	no association
A positive /Others	8 / 26	225/ 757	0.9	
B positive /Others	5 / 29	156 /156	0.88	
AB positive / Others	2 / 32	156/826	0.9	
<b>7- Family history</b>				
Positive	30	834	1.3	23%
Negative	4	148		
<b>8- No. of 60 cc cups of tea / day</b>				
three or more	24	592	1.5	33%
less than three	10	390		

Note a relative risk of greater than 1.0 indicate a positive association.

Table 3: Ultrasound Findings In Patients With Silent Gallstones

Number of stones	men	women
Less than three	7	18
Three and more	2	7
<b>Size of largest stone</b>		

(5-10 mm)	5	7
(11-20mm)	4	15
(21-30mm)	zero	zero
more than 30 mm	zero	3

**DISCUSSION:**

To the best of our knowledge, this is the first population based survey conducted in Iraq to establish the prevalence of silent gallstones and its association with some risk factors.

The prevalence of gall stones in different countries compared to Iraq (our study) is shown in ( table 4) Asymptomatic gallstones is more common in women than in men at all age groups, the same results were found in a old shown in (table 4) as will as in our study in Iraq .

( 14,15,16,17,18,19,20). The prevalence increases with parity and the use of contraceptive pills, the same results were found in a study conducted for Peruvian population (16).

There was no association with any of blood groups, the same result was found in a study conducted in India (21). Most positive cases were found in a healthy or over weight individuals this goes with a study in U.S.A (14) , showing that obese people with gallstones are more likely to develop severe events (complications) than those who were thinner , so probably referred to the out-patient with gallstone by most of primary physicians than are the others. In a study conducted in India in 1999 , showed no correlation of asymptomatic gallstone with obesity , diet or socioeconomic state (19). Positive family history is associated with increase risk for silent gallstones, the same results were found in a study conducted in India in 1995, showed that there is a strong familial tendency for gallstone formation in relatives of gallstone disease patients (22), also in a study done in New Zealand in 2000 (23) . We found that most of the patients with silent gallstones drink three or more of 60 ml

of black tea each day this might be incidental finding ,so we mentioned it as an observational finding in which a further study is recommended to support or abolish this finding Only three cases of silent gallstone, the size of largest stone was more than 20 mm , non have calcified gallbladder wall , this probably because most of asymptomatic gallstone have non of these specific features (11). Most patients with silent stones have less than three stones in number, this probably because the obstruction of cystic duct as reflected by the development of pain which occurs more frequently when there are multiple gall stones (10) . We did not discover any incidental associated gallbladder mass or tumor suggesting gallbladder carcinoma , this goes with a study done by Comfort and associates , they found no carcinoma among 112 patients with asymptomatic cholelithiasis , while the incidence of cancer in gallbladder of patients with symptomatic gallstones ranged from 1-15% with mean 4.5% (1,10,24,25).

**CONCLUSIONS:**

1. Silent gallstone more common in women than in men in all age groups and it is more common in women 40 years and above than in less than 40 years of age.
2. The prevalence increase with age , parity, contraceptive pills intake and familiar factor.
3. Obesity and blood groups have no important association with silent gallstones
4. most silent gallstones are less than three in number and smaller than 20 mm in diameter , with normal wall thickness and no associated gallbladder mass or calcifications.

**Table 4 : showing the prevalence of gallstone in different countries.**

Country	in Men	in Women
U.S.A (14)	5.5 %	8.6%
High Altitude Peruvian Population (15)	4.10 %	18.20 %
Peruvian Costal Native and High Land (16)	10.7 %	16.1%
Danish Population (17)	12.9 %	22.4 %
Okinawa, Japan (18)	2.5 %	4 %
India (19)	0.4 %	2.6 %
Iraq (our study)	2.2 %	4.09 %

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