

# Biomedical Importance of Diet in Ovarian Cysts Occurrence in North-Western Iran

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**Abstract**—The aim of this study was to determine the role played by diet in ovarian cysts development among women living in the different parts of Hamedan – northwestern Iran. Participants included 384 females with ovarian cysts were admitted to hospitals or medical centers during 2001-2006. Study participants were interviewed using a structured questionnaire to elicit a lifetime history of a variety of demographic, medical, and lifestyle factors. Standard diet questionnaire was also used to evaluate the usual diet in cases during 5 years before ovarian cyst diagnosis. Data were analyzed using Chi-Square or T-test. Our findings showed that majority of patients were at age between 22 and 36 (63.4%) and mean ages were 31.94, 31.34 and 32.5 years old for follicular, corpus luteum and dermoidal cysts, respectively. There was significantly lower consumption of meat and cereal food groups in patients than standard recommended orders ( $P<0.05$ ). Our findings indicate that occurrence of ovarian cysts was prominent in reproductive age range, and lower consumption of meat and cereal food groups had considerable role in ovarian cysts development in north-western Iran.

**Index Terms**— Ovarian cyst, diet

## I. INTRODUCTION

Ovarian cysts are divided into follicular, corpus luteum and dermoidal cysts [1]. Age, race, familial history and genetic background are among the most important factors associated with ovarian cysts occurrence [2], [3]. Heredity [4] and life style [5] play a pivotal role in development of ovarian cysts.

Diet has a significant part in development of several female physiological or clinical disturbances. Infertility or abortion is most common complications caused by Acryl amide consumption[6]. Studies have shown that the saturated lipids in egg or meet can lead to painful menstruation [7]. There is also significant association between diet and reproductive disorders [8], [9].

To our knowledge there has been no epidemiologic research on the associated factors concerning ovarian cysts development in Hamedan (Northwestern Iran). We conducted this analysis to investigate the biomedical role of diet in ovarian cysts occurrence in the area.

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## II. MATERIAL AND METHODS

We carried out a retrospective, cross-sectional study to evaluate cases from a retrospective chart review of females with ovarian cysts. Participants included 384 females were admitted to hospitals or medical centers during 2001-2006 in whom ovarian cysts were found by ultrasound examination performed either routinely or for a specific purpose. After written informed consent was obtained, study participants were interviewed in person by trained female interviewers using a structured questionnaire to elicit a lifetime history of a variety of demographic, medical, and lifestyle factors. Standard diet questionnaire was also used to evaluate the usual diet in cases during 5 years before ovarian cyst diagnosis. Data were analyzed using Chi-Square or T-test.

## III. RESULTS

Follicular, corpus luteum and dermoidal cysts had 50%, 45.8% and 4.2% of frequency in patients with ovarian cysts, respectively.

The distribution of age range at which diagnosis of ovarian cysts has been occurred shows that majority of patients were at age between 22 and 36 (63.4%) and the least percentage of the patients were in the age range of 47-56 years old (3.8%) (Table I).

TABLE I: THE AGE DISTRIBUTION OF PATIENTS WITH OVARIAN CYST

Age (years)	Frequency	%Frequency
12-16	18	5.8
17-21	18	5.8
22-26	60	19.2
27-31	66	21.2
33-36	72	23
37-41	36	11.6
42-46	30	9.6
47-51	6	1.9
52-56	6	1.9

The patients' history of the average daily dietary intake of dairy, fruit, and vegetable (during five years before diagnosis) was comparable to required number of servings in each of mentioned food groups. However, in comparison with standard serving sizes for different dietary groups, the mean daily consumption of bread and cereal, and meat group was significantly low in patients ( $p<0.0001$  and  $p<0.05$ , respectively) (Table II).

TABLE II: DAILY CONSUMPTION OF FOOD GROUPS IN PATIENTS

	Mean daily consumption				
	Dairy products	Fruits	Vegetables	Meat	Cereal
Patients' daily consumption	2.52	2.13	3.09	1.71	2.42
Standard daily consumption*	2.5	2	3	2	6
t	1.56	0.66	0.4	2.8	44.6
P	Non-significant	Non-significant	Non-significant	0.05	0.0001

\*The standard amounts have been derived from references 50,51 and 52.

#### IV. DISCUSSION

The results of current research show that the majority of the ovarian cysts was follicular or leuteum cysts, and demoidal cysts included a very low percent of ovarian cysts in the patients. This finding is comparable to other studies [10], [11] which show that the follicular or leuteal cysts are frequently occurring cysts in women. Since dermoidal cysts development in ovaries follows an intricate physiological pattern [12], the low frequency of such cysts development in women is conceivable.

The results of our study also show that the majority of patients with ovarian cysts were at age between 22 and 36 and only very low percent of patients were at the age higher than 47 or lower than 21 years old. High frequency of ovarian cysts occurrence in age between 22 and 36 may arise from the fact that during active reproductive period of life, where ovaries are actively functioning, possibility of development of ovarian cysts is increased. Association of age with development of reproductive system malfunctions has been appeared in several studies [13], [14]. Study on women with ovarian cysts in USA also indicated that the age range of patients was mostly between 15 and 44 years old [15].

The results of the current research on patients' diet have shown that the consumption of bread, cereal and meat food groups was lower compared with standard serving sizes for dietary groups. There are many studies which have shown the effects of diet on the development of ovarian cysts or other female reproductive disorders [6]-[9]. There is also a significant relationship between diet and polycystic ovarian syndrome [16], [17] and between diet and seromucinous benign ovarian cysts development [18]. However, a case control study is required to clarify the effects of diet on ovarian cysts occurrence.

In conclusion we consider that reproductive age range, genetic background and history of psychological problems or negative life events are amongst the key factors playing pivotal role in ovarian cysts development in northwestern Iran.

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