

Frequency of Obesity in Women of Child Bearing age Presenting with Primary Sub Fertility

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ABSTRACT

Background: The prevalence of subfertility ranges from 5-28% in the developed countries. Obesity is increasing all over the world, affecting more than one billion people worldwide. The prevalence of obesity varies from population to population and is estimated to be 40% in developing countries and 25-30% in developed nations. Obesity also hampers female reproductive system and has been associated spontaneous miscarriage, polycystic ovarian disease, subfertility and infertility. **Objective:**

Aim: To determine the frequency of obesity in women of child bearing age presenting with primary subfertility, in Gynaecology department of Ibnae Sienna Hospital Multan

Methodology: This descriptive, cross sectional study was conducted in the Ibnae –Sienna Hospital, Multan from MAY 2017 to September 2017. All primary subfertile women of child bearing age having age 18-35 years were included in this study. A total number of 100 females were selected. The diagnosis of primary subfertility was made. The data of BMI was taken at the time of checkup of patient in the hospital. Patients having BMI ≥ 28 kg/m² were labelled as obese.

Data analysis was carried out using SPSS version 19 Software. Frequency and percentage were calculated for the frequency of obesity. Stratification of effect modifiers e.g. age, duration of marriage and BMI was done.

Results: Mean age of patients included in this study was 24.59±5.15 years. Mean body mass index (BMI) of patients was 28.82±03.67 kg/m². Mean duration of marriage was 24.41±12.38 months. There were 60 (60%) obese patients

Conclusion: There is a high frequency of obesity in subfertile females. In present study, the frequency of obesity in primary subfertile females was 60%.

Keywords: Subfertility, Body mass index (BMI), Obesity.

INTRODUCTION

Obesity is increasing all over the world, affecting more than one billion people worldwide.¹ The prevalence of obesity varies from population to population and is estimated to be 5% in developing countries and 30-35% in developed nations.² According to World Health Organization Body mass Index (BMI) in abnormal above the range of 25 kg/m² and a person is obese if the BMI is more than 30.0 kg/m².³ The incidence of obesity in child bearing age is 12% in Europe and 25% in North America.^{4,5} Obesity has negative impact on many aspects of the women health by increasing the risk of heart diseases, diabetes mellitus, endometrial cancer as well as pregnancy complications.⁶ Obesity also hampers female reproductive system and has been associated spontaneous miscarriage, polycystic ovarian disease, subfertility and infertility.⁷ The prevalence of subfertility ranges from 5-28% in the developed countries.⁸ This delay has many other health problems increasing the cost of health services and frustration. Delayed conception may also result in reproductive and genetic damages.^{9,10}

In the study of Ramlau-Hansen et al, the incidence of obesity in primary subfertility was 18.67%.¹¹ This study concluded that there is a high incidence of obesity in women with primary subfertility. But very literature is available regarding relationship of obesity and primary fertility.^{9,11} So I have a plan to conduct this study to see the incidence of obesity in primary subfertile women of our population presenting in gynecology department of Nishtar hospital Multan. Because there is a

geographic variation in the obesity status of women and no literature is available regarding the frequency of obesity in women with primary subfertility from Pakistan. This study will help to understand the frequency of obesity in primary subfertility in women of our population as our population is genetically and geographically different from other population and they also have different dietary habits and different life styles so implementation of literature on other population will not be applicable on our population. The results of this study will help to develop better management measures of weight control in child bearing age women if obesity is responsible for primary subfertility and special consideration will be given to control obesity as a treatment of primary subfertility. This study will also help other gynecologists to treat primary subfertility in a better way in obese females.

The objective of the study was to determine the frequency of obesity in women of child bearing age presenting with primary subfertility, in Gynaecology department of Ibnae Sienna Hospital Multan

Operational definitions: The outcomes of this study was measured in terms of obesity.

Primary Subfertility: Primary subfertility is defined as unable to conceive for the 1st time after 12 months of unprotected intercourse in the absence of any sexual dysfunction in her male partner.

Obesity: A woman will be considered obese if her Body Mass Index (BMI) will be more than or equal to 25.0

kg/m².¹² BMI was calculated using height and weight of the patient by using the following formula;
 BMI = Weight in Kilograms / Height in Meters².

MATERIALS AND METHODS

This descriptive, Cross Sectional study was conducted in the Department of Gynecology, Inane Sienna Hospital Multan from May, 2016 to September, 2017. Sample size is determined by the formula $n = (Z^2 \times P(100 - P)) / e^2$ where $z = 1.99$, $= 21.93\%$ ¹¹, and $\alpha = 7.0\%$. Thus sample size was 100 and sampling technique used was Non-probability, consecutive sampling.

Inclusion criteria:

- All primary subfertile women of child bearing age presenting for their clinical checkup due to any reason in gynecology department of Inbae Sienna Hospital Multan.
- Married Females with age 18 to 35 years.

Exclusion criteria:

- Females with their sexually unhealthy male partner as assessed by semen analysis.
- Females with age more than 35 years

Data collection procedure: After taking ethical approval, a total number of 100 females who presented for their routine checkup in gynecology department of Inbae Sienna Hospital fulfilling the inclusion criteria were selected for this study. A written informed consent was taken from every female before including her in this study.

The diagnosis of primary subfertility was made. The data of BMI was taken at the time of checkup of patient in the hospital. The height and weight of every patient was measured at the time of checkup and BMI will be calculated by the formula given in the operational definitions. Patients having BMI ≥ 28 kg/m² were labelled as obese. The data regarding age, duration of marriage, height, weight and body mass index will be recorded .

Data analysis procedure: Date analysis was carried out using SPSS Software. Mean and Standard deviation were calculated for age, duration of marriage, height, weight and body mass index. Frequency and percentage were calculated for the frequency of obesity. Stratification of effect modifiers e.g. age, duration of marriage and BMI was done. Post-stratification X²-test was applied to see their effects on the frequency of obesity. P-value ≤ 0.05 was taken as a significant difference.

RESULTS

Mean age of patients included in this study was 24.59±5.15 years. Minimum age of patients was 18 years. Maximum age was 35 years (Table 1).

Regarding BMI of patients, mean height of patients was 158.03±10.75 cm. Minimum height was 139 cm and maximum height was 190 cm. Mean weight of patients was 59.19±11.81 Kg. Minimum weight was 41 Kg and maximum weight was 92.0 Kg. Mean body mass index (BMI) of patients was 23.82±03.67 kg/m². Minimum BMI was 16.53 kg/m² and maximum BMI was 36.52 kg/m² (Table 2).

Mean duration of marriage was 24.41±11.38 months. Minimum duration of marriage was 12.0 months and maximum duration of marriage was 60.0 months (Table 3). Out of 100 patients subfertile females, there were 60 (60%) obese patients. Stratification of age was performed. In patients having age 18-35 years, there were 60 (60%) obese patients while remaining 40 (40%) patients were having normal BMI (Table 4).

Stratification of duration of marriage was also performed. In patients having duration of marriage <18 years, there were 60 (60%) patients who were obese and 40(40%) were non-obese (Table 5).

Table 1: Descriptive statistics of age of patients.

Age of Patients (years)	
Mean	24.59
Standard Deviation	4.15
Minimum	18.0
Maximum	35.0

Table 2. Descriptive statistics of height, weight and Body Mass Index (BMI).

	Height (cm)	Weight (Kg)	BMI (Kg/m ²)
Mean	158.03	59.19	23.82
Standard Deviation	10.75	11.81	03.67
Minimum	139	41.0	16.53
Maximum	190	92.0	36.52

Table 3: Descriptive statistics of duration of marriage.

Duration of Marriage (Months)	
Mean	24.41
Standard Deviation	11.38
Minimum	12.0
Maximum	60.0

Table 4. Stratification of Age to determine the Effect of Age on Obesity in Subfertile Females.

Age group	Obesity	
	Yes	No
18-35 years	60 (60%)	40 (40%)

P value 0.02

Table 5. Stratification of Duration of marriage to determine the effect of duration of age on obesity in subfertile female (n=100)

	Obesity	
	Yes	No
	60 (60%)	40 (40%)

P value 0.02

DISCUSSION

The incidence of infertility varies greatly in different countries and regions. A U.S. survey depicted 15,303 married women of 15–44 years old as having a 7.4% current infertility in 2002^{12,13,14,15}. Rising obesity rates present a global public health challenge^{16, 17, 18}.

In short, obesity in women has bang on fertility and fertility management. Boost in BMI decrease the possibility of conception in ovulatory women and influence the outcome of ovulation induction treatment.

CONCLUSION

There is a high frequency of obesity in subfertile females. In present study, the frequency of obesity in primary subfertile females was 60%.

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