

Original Article

OBESITY AMONG INFERTILE WOMEN

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ABSTRACT

Objective: To assess the prevalence of obesity through body mass index (BMI) among infertile females

Study Design: Cross sectional descriptive study

Place and Duration of Study: The study was conducted at Baqai university hospital Nazimabad from August 2009 to July 2010

Methodology: All patients attending infertility clinic having their first visit for either primary or secondary infertility and age ranging between 20 to 40 years were included in the study. Those with age > 40 married <12 months and those already under treatment were excluded from the study. A predesigned proforma was used to collect variables.

Results: Out of 218 patients, 61.29 % were 20 to 30 years and 39.17 % were 30 to 40 years. Majority of patients included in the study were of primary infertility i.e 77.88% and remaining 22.58 % were of secondary infertility. BMI calculation among 218 patients showed that 38.53 % women had normal BMI, 33.48% of women were overweight, 25.67% were obese which when further categorized 18.80% had grade I, 3.66% belong to grade II and 3.21% belonged to grade III obesity.

Conclusion: BMI assessment is an important aspect regarding management of infertile patients. As BMI is a marker of obesity and a predictor of reproductive outcome of infertility treatment, an accurate assessment of BMI in order to assess grades of obesity should be a routine practice .

Key Words: BMI, infertility ,obesity

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INTRODUCTION:

Obesity is defined as body mass index (BMI) of $>30 \text{ Kg/m}^2$.¹ Measurement of height and weight should be done in order to calculate a patient's BMI. The normal range is $20\text{-}25 \text{ Kg/m}^2$.² BMI <18.5 is under weight, $18.5\text{-}24.9$ is normal, $25.0\text{-}29.9$ is overweight and $>30 \text{ Kg/m}^2$ is obese. According to the National institute for health and clinical excellence classification of grades of obesity I, II, and III depends on BMI.³ Obesity I is BMI of $30\text{-}34.9 \text{ Kg/m}^2$. Obesity II is $35.0\text{-}39.9 \text{ Kg/m}^2$ and obesity III is 40 Kg/m^2 or more. Overweight and obesity are global pandemic. According to a WHO report there are 1 billion overweight people in the world, of whom 300 million are obese.⁴ Finding of national health survey Pakistan 1990 -1994, found that prevalence of obesity for adults aged 25-64 from low middle to high socioeconomic status was 9%, 15% and 27% for rural areas and 21%, 27% and 42% for urban areas respectively.⁵

Obesity has a significant adverse impact on reproductive outcome. It influences not only the chances of conception but also the response to infertility treatment and increases the risk of miscarriage and pregnancy complications.^{6,7} More than half of all women in the United State (USA) and United Kingdom (UK) are either over weight or obese.⁶ Along with other conditions such as diabetes and hypertension obese women are more likely to experience reproductive problems.⁸

Infertility is defined as inability to conceive despite regular unprotected intercourse

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over a period of one years.⁹ Primary infertility is when there is no conception. Secondary infertility is when woman has achieved a previous pregnancy regardless of outcome of pregnancy. The prevalence of infertility in Pakistan is 21.9%.¹⁰

The objective of the study was to assess prevalence of obesity through BMI among infertile women attending infertility clinic at tertiary care hospital.

PATIENT AND METHOD:

The study was conducted at Baqai University Hospital Nazimabad from August 2009 to July 2010. During the period 410 women attended infertility clinic.

All patients attending infertility clinic having their first visit for either primary or secondary infertility with age between e"20 to d"40 years were included in the study. Those excluded were with age > 40 years, married d"12 months and those already under treatment. 218 women were included in the study according to inclusion criteria BMI calculation was done by formula of weight in Kg divided by height in meter square. The results of study are shown in table I, II and III.

Data was collected from previous records. All women who fulfilled inclusion criteria were included in the study by consecutive sampling method.

TABLE I
N=218

AGE GROUP

AGE	n	%
e" 20- d"30	133	61.00 %
e"30- d" 40	85	38.99 %

Table II
N=218

Type of infertility:

	n	%
Primary infertility	169	77.52
Secondary infertility	49	22.47

Table III
N=218

BMI Calculation:

Body Mass Index	n	%
Under weight	05	2.29
Normal	84	38.53
Overweight	73	33.48
Obesity Grade I	41	18.80
Obesity Grade II	08	3.66
Obesity Grade III	07	3.21

RESULTS:

Table I shows that 133 (61.0%) women who attended infertility clinic were between age 20-30 years where as 85 (38.99%) women were of age group between 30-40 years.

Table II shows that more women presented with primary infertility that is 169(77.52%) v/s 49 (22.47%) with secondary infertility. Table No. 3 shows BMI calculation of 218 women attending infertility clinic. It shows that 84 (38.53 %) women were of normal BMI where as 73 (33.48%) of women were over weight. In our study No of women who were under weight were only 5 (2.29 %). According to grades of obesity, 41 (18.80 %) were of grade I obesity, 08 (3.66%) of grade II obesity and 07 (3.21%) were of grade III obesity.

DISCUSSION:

The global epidemic of overweight and obesity is rapidly becoming a major public health problem in many parts of the world. Women who have a normal body mass index (20-25 Kg /m²) are more likely to conceive and have a normal pregnancy than those who are outside the normal range.¹¹

Initiation and maintenance of reproductive functions are related to an optimal body weight in women. Underweight [body mass index (BMI) <18.5Kg/m², as well as over weight (BMI>26Kg/m²) and obesity (BMI e" 30Kg/m²) are associated with increased risk of anovulatory infertility.¹²

In our study we have assessed BMI among infertile women. The frame work by Koning et al. Consider BMI to be a marker of obesity.¹³

In our study in general 61% women were of younger age group i.e. 20-30 years. In another study in which the influence of BMI on treatment outcome was studied, obese women (BMI >30Kg/m²) were significantly younger than normal BMI (18.5-24.9 Kg/m²)¹⁴. Mean age of women was found 29.06±4.58 years in a study by Moini et al. ¹⁵

In our study group primary infertility is more common i.e.77.52% than secondary infertility.Moini et al¹⁵ found 93% women had primary infertility in their study.

In our study normal BMI was observed in 38.53% of women, under weight was just 2.29%.Moini et al¹⁵ observed 46.3% of women of normal BMI. In another study, a relatively high number of subjects were under weight.¹⁶

In our study prevalence of over weight women was significantly higher i.e.33.48%of women. Grade I obesity was observed in 22.1%of women. Moini et al ¹⁵ found 40.8% women were over weight and 12.9% women were obese. In another study 2.9% women were found under weight and 9% had grade I obesity. ¹⁴

In our study Grade II obesity was found in 3.6% women and Grade III in 3.2%.In a population based study an increased prevalence of over weight and obese women was demonstrated ¹⁷

CONCLUSION :

Obesity is increasingly prevalent health burdens upon modern society. All obese women are not infertile; however obesity and its negative impact upon fertility are well documented.

As BMI is a marker of obesity and a predictor of reproductive outcome of infertility treatment, an accurate assessment of BMI is order to assess grades of obesity should be a routine practice in infertility clinics. BMI calculations also provide a unique

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opportunity to counsel the patient about weight loss and attain a normal BMI before initiation of any infertility treatment.

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