

**THE STUDY OF ABNORMAL MENSTRUAL CYCLE FREQUENCY ASSOCIATED  
WITH THE RAISED BODY MASS INDEX**<sup>1\*</sup>Rida Javaid, <sup>2</sup>Hafsa Maryam, <sup>3</sup>Asad Atta Qureshi<sup>1,2,3</sup>Nishtar Medical University, Multan.

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**ABSTRACT**

**Objective:** This study's main objective was to identify the frequency of menstrual cycle abnormalities associated with higher BMI. **Study Design:** It is a type of cross-sectional study. **Place and Duration of study:** This study took place in the Department of Gynecology and Obstetrics in the Nishtar Hospital Multan for nine months from August 2019 to April 2020. **Materials and Methods:** In the fertile group, a total of 100 cases, i.e. this study included more than 12 years. Menstrual abnormalities were the criteria for inclusion for at least the last three cycles. Exclusion criteria included patients with bleeding trends, utero abnormalities and hormonal abnormalities. The body mass index of each patient was calculated and high BMI patients greater than 25kg/m<sup>2</sup> were labelled. There was informed consent from all patients or their relatives. A pre-designed pro forma was used for data collection. The approval of the Ethical Committee has been adopted. **Results:** For the study, 100 patients were selected. The mean age in our analysis was 20.21±4.57 years. The mean time for menstrual abnormalities was 7.21±2.34 months. 32% of patients had an upgraded BMI. 64 percent took therapy for this. In 16 cases (47.06 percent), the incidence of increased BMI was much higher in patients over 14 years of age with menarche. In 23 cases, patients receiving prior menstrual treatment also had an increased BMI (40.35 percent) (40.35 percent). **Conclusion:** Elevated BMI and other variables such as delayed menarche and increased menstrual abnormality are positively associated with menstrual abnormalities.

**KEYWORDS:** Menstrual cycle, BMI, Menarche.**INTRODUCTION**

Menstrual cycle problems constitute a significant health problem commonly experienced by teenagers. In developing countries, these problems have a high impact. These abnormalities can lead to significant stress problems with other psychological, physical and gynaecological problems. These abnormalities can lead to multiple factors that can be major or minor. Minor problems can be mild stress and severe diseases, including structural uterine abnormalities, fallopian tube and ovary and hormone disturbance, may be necessary. Some of these factors can affect both adults and adolescents. The leading cause of fear associated with these anomalies is a reproductive abnormality. The high prevalence of lifestyle change, dietary habits, and increased obesity in developed countries can impact the menstrual cycle. One of the significant risk factors in menstrual cycle irregularities is obesity, which can directly influence the cycle and show a pathology such as hormonal abnormalities or polycystic ovarian disease.

**OBJECTIVE**

This study's main objective was to detect the frequency of menstrual cycle abnormalities associated with higher BMI.

**MATERIALS AND METHODS**

This study took place in the Department of Gynecology and Obstetrics in the Nishtar Hospital Multan for nine months from August 2019 to April 2020. A total of 100 fertile case cases, i.e., this study included more than 12 years. Inclusion criteria for at least three cycles were to have menstrual abnormalities. Patients with bleeding trends, uterine abnormalities and hormonal abnormalities were included in the exclusion criteria. Each patient's body mass index was calculated, and BMI patients greater than 25kg/m<sup>2</sup> were labelled as high. All patients or their relatives received informed consent. For the collection of data, a pre-designed proforma was used. The approval of the Ethical Committee was taken.

**RESULTS**

One hundred patients were selected for the study. In our study, the mean age was 20,21±4,57 years. The

menstrual abnormalities meantime was  $7.21 \pm 2.34$  months. 32% of patients had BMI raised. For this, 64 per cent took treatment. Patients over 14 years of age with menarche had a much higher BMI incidence in 16 (47.06

per cent) cases. Patients who had previous delayed menstruation treatment also had increased BMI in 23 (40.35%) cases.

**Table 1: Demographics.**

	Mean	Range
Age (years)	20.21 $\pm$ 4.57	14-32
BMI (kg/m <sup>2</sup> )	24.23 $\pm$ 3.39	16-34
Duration of abnormal menstruation (months)	7.21 $\pm$ 2.34	1-10

**Table 2: Raised BMI and age of menarche (n= 100).**

Age of menarche (years)	Raised BMI		Total
	Yes	No	
>14	16 (47.06%)	18 (52.94%)	34 (100%)
14 or less	16 (24.24%)	50 (75.76%)	66 (100%)
Total	32 (32%)	68 (68%)	100 (100%)

p= 0.01

**Table 3: Raised BMI and h/o prior treatment (n= 100).**

H/o Prior treatment	Raised BMI		Total
	Yes	No	
Yes	23 (40.35%)	34 (59.65%)	57 (100%)
No	09 (20.93%)	34 (79.07%)	43 (100%)
Total	32 (32%)	68 (68%)	100 (100%)

p= 0.03

## DISCUSSION

Puberty is a dynamic life phase which affects sexual, physical and emotional changes significantly. Begin at the age of 13 and end at the age of 19. Several body changes during this stage include the onset of the menstrual phase and related problems. These abnormalities were found to be associated with increased body weight and BMI. In our study, 32 per cent of cases showed an increase in BMI. The results are based on

previous studies. A survey by ACOG revealed that increased BMI was seen in 30 to 47 per cent of cases. In 16 (47.06 per cent) cases, the incidence of increased BMI was much higher for patients who were menarche older than 14 years. Patients with delayed menstruation previous therapy also increased BMI in 23 (40.35 per cent) cases. Dars S et al. showed similar results where the higher age of monarchy showed an increased risk of menstrual abnormalities. In our study, the mean age of menarche was  $12.92 \pm 1.41$  years. Other studies have

shown that BMI has increased in cases where patients have been taking delayed menarche drugs.

## CONCLUSION

High menstrual abnormalities are associated with increased BMI and other factors like delayed menarche, and a previous treatment significantly increases the incidence.

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