CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.3727828

Available online at: http://www.iajps.com *Research Article*

A CROSS SECTIONAL STUDY TO DETERMINE THE FREQUENCY OF INCREASED BMI IN WOMEN WITH DISTURBED MENSTRUAL CYCLE

Dr Samia Ijaz, Dr Sehrish Musaddiq, Dr Aqsa Iqbal
Mohi-ud-din Islamic Medical College, Mirpur AJK

Article Received: January 2020 **Accepted:** February 2020 **Published:** March 2020

Abstract:
Objective: *We conducted this study to define the occurrence of increased BMI in women with disturbed menstrual cycle.*
Study Design: *Cross-sectional study.*
Place and Duration: *This study was carried out in the Department of Obstetrics & Gynecology, Services Hospital Lahore from May, 2019 to November, 2019 for the duration of 06 months.*
Methodology: *A total number of 100 cases were selected for this study. In this study the cases of fertile age group i.e. more than 12 years of age having any menstrual disturbance present for at least last 3 menstrual cycle were selected. The cases with bleeding disorder, hormonal issues and those with uterine anomalies were excluded. The BMI was calculated and the BMI ≥25kg/m2 was labelled as raised.*
Results: *There were total 100 cases in this study with mean age of 20.21±4.57 years. The mean duration of abnormality in menstruation was 7.21±2.34 months. There were 64 (64%) of cases that were taking treatment for this. Raised BMI was seen in 32 (32%) of the cases. Raised BMI was significantly higher in number in cases that had age of menarche later than 14 years of age where it was seen in 16 (47.06%) cases with p= 0.01. It was also significantly high in cases that had history of prior treatment where it affected 23 (40.35%) cases with p value of 0.03.*
Conclusion: *Raised BMI is common in females with menstrual irregularities and it is significantly high in cases that had age of menarche more than 14 years and are also took some treatment for it.*
Keywords: *BMI, menstrual cycle, menarche.*

Corresponding author:
Dr Samia Ijaz,
Mohi-ud-din Islamic Medical College, Mirpur AJK

QR code

Please cite this article in press Samia Ijaz et al., ***A Cross Sectional Study To Determine The Frequency Of Increased BMI In Women With Disturbed Menstrual Cycle,*** *Indo Am. J. P. Sci, 2020; 07(03).*

INTRODUCTION:

Menstrual problems are well-reported health concern and are more common in the younger age group. They are common across the globe; thought the data is scarce yet it's shown that it is common in the developing countries.[1] They pose a great degree of minor or major stress on one's social, emotional and psychological life along with gynecological issues. [2,3]

There are wide range of etiologies that can lead to this. This ranges from minor stress disorder to severe underlying disease that can be sorted out on detailed workup and include hormonal problems and structural abnormalities of the uterus, ovaries and fallopian tube etc. [4] Few of these disorders can impact at both the adolescent as well as latter part of the life. The major clinical fear regarding these irregularities is its effect on reproductive cycles. The developed world has the highest issues and even the developing counties are also suffering from this; courtesy westernization of life style, change in eating habits and rise is obesity prevalence, which can all impact synergistically on menstrual irregularities. [5-8]

Obesity is one of the major risk factors that have been stratified and thought to impact this irregularity. It can not only directly affect it but on the other hand it may reveal an underlying disorder like polycystic ovarian syndrome or hormonal disturbances. [9-12]

METHODOLOGY:

This cross-sectional study was conducted in the Department of Obstetrics & Gynecology, Services Hospital Lahore from May, 2019 to November, 2019 for the duration of 06 months. Sampling Technique: Non-probability consecutive sampling technique was used for selection. A total number of 100 cases were included in the study. In this study the cases of fertile age group i.e. more than 12 years of age having any menstrual disturbance present for at least last 3 menstrual cycle were selected. The cases with bleeding disorder, hormonal issues and those with uterine anomalies were excluded.

The BMI was calculated and the BMI ≥25kg/m2 was labelled as raised. The data was entered and analyzed by using SPSS-20. Post stratification chi-square test was applied and p ≤0.05 was taken as significant.

RESULTS:

There were total 100 cases in this study with mean age of 20.21±4.57 years (table 1). The mean duration of abnormality in menstruation was 7.21±2.34 months (Table 1).

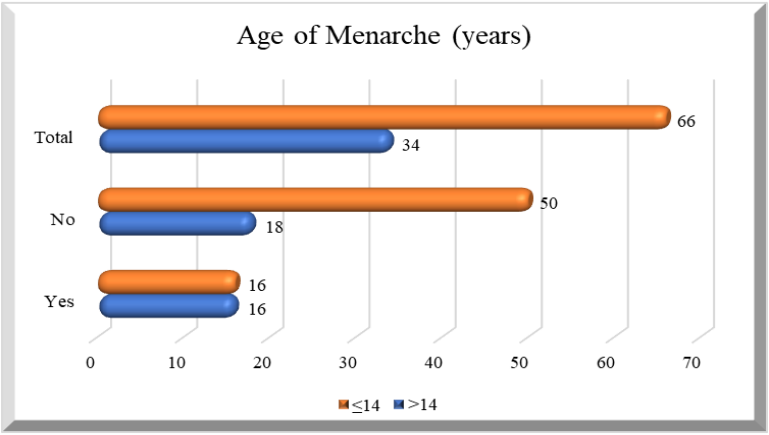
Table No 01: Demographics

	Mean	Range
Age (Years)	20.21±4.57	14-32
Bmi (Kg/M2)	24.23±3.39	16-34
Duration of Abnormal Menstruation (Months)	7.21±2.34	1-10

There were 64 (64%) of cases that were taking treatment for this. Raised BMI was seen in 32 (32%) of the cases. Raised BMI was significantly higher in number in cases that had age of menarche later than 14 years of age where it was seen in 16 (47.06%) cases with p= 0.01 (table 02).

Table No 02: Raised BMI and Age of Menarche

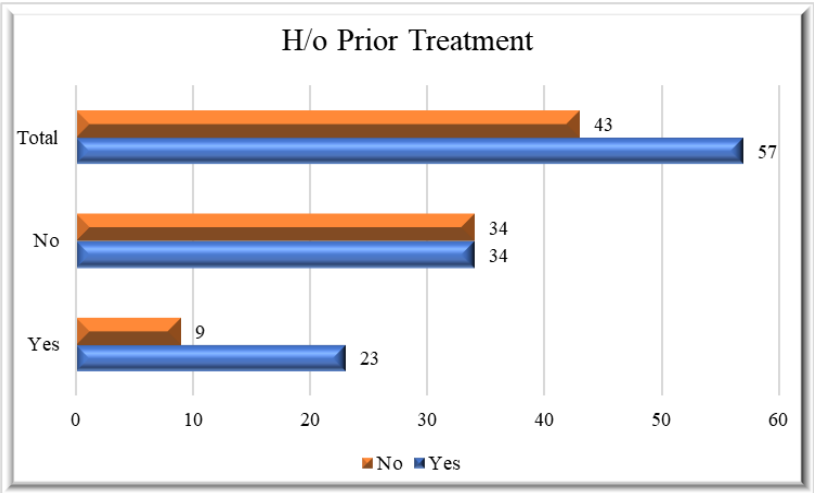
AGE OF MENARCHE (YEARS)	RAISED BMI		TOTAL	P-VALUE
	Yes	No		
>14	16 (47.06%)	18 (52.94%)	34 (100%)	0.01
14 OR LESS	16 (24.24%)	50 (75.76%)	66 (100%)	
TOTAL	32 (32%)	68 (68%)	100 (100%)	



It was also significantly high in cases that had history of prior treatment where it affected 23 (40.35%) cases with p value of 0.03 as shown in table 03.

Table No 03: Raised BMI and h/o Prior Treatment

H/o Prior Treatment	Raised BMI		Total	P-value
	Yes	No		
Yes	23 (40.35%)	34 (59.65%)	57 (100%)	0.03
No	09 (20.93%)	34 (79.07%)	43 (100%)	
Total	32 (32%)	68 (68%)	100 (100%)	



DISCUSSION:

Adolescence is a dynamic part of the life and has a great impact on body in terms of emotional, sexual and physical changes. It starts at the age of 13 years and up to 19 years. It is the time period where usually the menstrual cycle begins; and there are multiple irregularities associated with this. [13,14]

Raised BMI was seen in 32 (32%) of the cases in this study. These results were close to the results of the previous studies. According to a survey by ACOG they found that the chances of raised BMI i.e. in the obesity range were seen 30% to 47% of the cases. [15,16]

Raised BMI was significantly higher in number in cases that had age of menarche later than 14 years of age where it was seen in 16 (47.06%) cases with p= 0.01. It was also significantly high in cases that had history of prior treatment where it affected 23 (40.35%) cases with p value of 0.03. These results were like the study conducted by Dars S et al where

they did not used the same cut off value but they revealed that the cases where the mean age of menarche was higher had more chances of menstrual irregularities. In their study the cases with irregularities had mean age of menarche as 12.92 ± 1.41 years.[17] Similar trends were observed by the other studies where it was shown that the cases that are on treatment for menstrual irregularities had more BMI which can be explained by the presence of other underlying co morbid conditions or disease that led to seek treatment.[18,19,20]

CONCLUSION:

Raised BMI is common in females with menstrual irregularities and it is significantly high in cases that had age of menarche more than 14 years and are also took some treatment for it.

REFERENCES:

1. American Academy of Pediatrics, American College of Obstetricians Gynecologists. Menstruation in girls and adolescents: using the menstrual cycle as a vital sign. Pediatrics 2006;118(5):2245-50.
2. Day FR, Elks CE, Murray A, Ong KK, Perry JR. Puberty timing associated with diabetes, cardiovascular disease and diverse health outcomes in men and women: the UK Biobank study. Sci Rep. 2015; 5:1-12. DOI:10.1038/srep11208
3. Palm-Fischbacher S, Ehlert U. Dispositional resilience as a moderator of the relationship between chronic stress and irregular menstrual cycle. J Psychosom Obstet Gynaecol. 2014;35(2):42-50.
4. Kim MJ, Lim NK, Choi YM, Kim JJ, Hwang KR, Chae SJ, et al. Prevalence of metabolic syndrome is higher among non-obese PCOS women with hyperandrogenism and menstrual irregularity in Korea. PLoS One. 2014;9(6): e99252.
5. Lee SS, Kim DH, Nam GE, Nam HY, Kim YE, Lee SH, et al. Association between metabolic syndrome and menstrual irregularity in middle-aged Korean women. Korean J Fam Med. 2016; 37(1):31-6.
6. Brewer CJ, Balen AH. The adverse effects of obesity on conception and implantation. Reproduction 2010; 140(3):347-64.
7. Seif MW, Diamond K, Nickkho-Amiry M. Obesity and menstrual disorders. Best Pract Res Clin Obstet Gynaecol. 2015; 29:516-27.
8. Lim SW, Ahn JH, Lee JA, Kim DH, Seo JH, Lim JS. Early menarche is associated with metabolic syndrome and insulin resistance in premenopausal Korean women. Eur J Pediatr. 2016; 175(1):97–104.
9. Kuokkanen S, Polotsky AJ, Chosich J, Bradford AP, Jasinska A, Phang T, et al. Corpus luteum as a novel target of weight changes that contribute to impaired female reproductive physiology and function. Syst Biol Reprod Med. 2016; 62(4):227-42.
10. Han K, Ko Y, Park YG, Park JB. Associations between the periodontal disease in women before menopause and menstrual cycle irregularity: the 2010-2012 Korea National Health and Nutrition Examination Survey. Medicine (Baltimore). 2016; 95(6): e2791.
11. Stracciolini A, Quinn BJ, Geminiani E, Kinney S, McCrystal T, Owen M, et al. Body mass index and menstrual patterns in dancers. Clin Pediatr (Phila). 2017;56(1):49-54.
12. Lim JS, Choi YJ, Kim SK, Huh BW, Lee EJ, Huh KB. Optimal waist circumference cutoff value based on insulin resistance and visceral obesity in Koreans with type 2 diabetes. Diabetes Metab J. 2015 Jun; 39(3):253-63.
13. Samara-Boustani D, Colmenares A, Elie C, Dabbas M, Beltrand J, Caron V, et al. High prevalence of hirsutism and menstrual disorders in obese adolescent girls and adolescent girls with type 1 diabetes mellitus despite different hormonal profiles. Eur J Endocrinol 2012; 166(2):307-16.
14. Prentice P, Viner RM. Pubertal timing and adult obesity and cardiometabolic risk in women and men: a systematic review and meta-analysis. Int J Obes (Lond). 2013; 37(8):1036-43.
15. Delara M, Woodgate RL. Psychological distress and its correlates among university students: a cross-sectional study. J Pediatr Adolesc Gynecol. 2015; 28(4):240-4.
16. ACOG Committee on Practice Bulletins—Gynecology. ACOG Practice Bulletin No. 108: polycystic ovary syndrome. Obstet Gynecol. 2009; 114(4):936-49.
17. Dars S, Sayed K, Yousufzai Z. Relationship of menstrual irregularities to BMI and nutritional status in adolescent girls. Pak J Med Sci. 2014;30(1):141–4.
18. Nagma S, Kapoor G, Bharti R, Batra A, Batra A, Aggarwal A, et al. To evaluate the effect of perceived stress on menstrual function. J Clin Diagn Res. 2015; 9(3): QC01–3.
19. Aryeetey R, Ashinyo A, Adjuik M. Age of Menarche among basic level school girls in Madina, Accra. Afr J Reprod Health. 2011;15(3):103-10.
20. Seth B, Arora S, Singh R. Association of obesity with hormonal imbalance in infertility: a cross-sectional study in north Indian women. Indian J Clin Biochem. 2013; 28(4):342–7.