

Adolescent Obesity and its Impact on Menstruation

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Abstract: **Background:** Adolescence is the transitional phase of physical and mental development between childhood and adulthood and is characterized by immense hormonal changes. Menstrual irregularities affect the life style, school attendance and outdoor activities of adolescent. Obese Adolescents suffer even more frequently. **Objectives:** The purpose of the study is to assess menstrual disturbances among obese adolescent girls. **Methods:** The present study was a descriptive study conducted among 75 obese adolescent girls, who attended Gynaecology OPD in SBMCH, and also from Secondary school of Chrompet. Data obtained in MS excel were analysed. Statistical significance was calculated using Chi-square test and p value. **Results:** 66% of obese adolescents attained menarche at 11 years of age. Obese adolescents were more likely to experience earlier onset of menarche, excessive amount of blood flow and long interval of menstrual period. **Conclusion:** Lifestyle modification like regular physical activity, decreasing intake of junk food, promoting healthy eating habits and maintaining optimal BMI should improve menstrual health.

Keywords: Obesity, menstruation, adolescent girls.

1. Introduction

Adolescent obesity has been identified as a significant and growing health problem leading to type 2 diabetes, metabolic syndrome, cardiovascular disease, and cancer. As weight increases, the risk of impaired glucose tolerance, hypertension and dyslipidemia increases. Over 10 times more children and adolescents were obese in 2016 (124 million) compared to 1975(11 million). In urban south India, 21.4 percent boys and 18.5 percent girls aged 13-18 are either overweight or obese. Nearly 35% of the global burden of disease has its root emergence in adolescence. Rising obesity rates around the world have had a profound impact on female reproductive health. Childhood obesity is associated with early onset of puberty, menstrual irregularities and polycystic ovarian syndrome during adolescence.

2. Aim

The purpose of the study is to assess menstrual disturbances among obese adolescent girls

3. Materials and Methods

Body mass index (BMI) is defined as weight in kilograms divided by height in meters squared. The standard BMI weight-status categories used for adults are not dependent on age or sex and, therefore, cannot be used in interpretation of BMI in adolescents. Age- and gender-specific body mass index (BMI) was calculated using WHO Anthroplus software. They were categorised as "obese" based on the Indian Academy of Pediatrics (IAP) age- and gender-specific BMI guidelines. Obesity is a BMI at or above the 95th percentile. A total of 50 obese adolescent girls (10-19 years - WHO), who attended Gynaecology OPD in Sree Balaji Medical College and Hospital, Chrompet, and also from Secondary school of Chrompet were asked to respond to a preformed questionnaire, in which they were asked about the characteristics of their menstruation – age of menarche, regularity/ irregularity of menstruation in interval

and duration, amount of blood loss(number of pads used) and pain during menstruation.

4. Results

The mean of girls is 14.9 ±2.1 years.

| Parameters for Normal Menstrual Cycles in Adolescents | |
|---|---------------------|
| | Normal |
| Menstrual cycle frequency | 21 – 45 days |
| Cycle variation from cycle to cycle | Less than in adults |
| Duration of flow | 4-8 days |
| Volume of flow | 4-80 mL |

| Characteristics of Menstruation | % of obese adolescents, n=50 |
|-----------------------------------|------------------------------|
| Age of menarche | |
| • 10 | 12(24%) |
| • 11 | 33(66%) |
| • 12 - <14 years | 5(10%) |
| Regularity of Menses | |
| • Regular | 19(38%) |
| • Irregular | 31(62%) |
| Frequency of Menstruation: | |
| • Frequent | 9(18%) |
| • Normal | 28(56%) |
| • Infrequent | 13(26%) |
| Duration of Menstrual Flow | |
| • Shortened | 4(8%) |
| • Normal | 41(82%) |
| • Prolonged | 5(10%) |
| Volume Of Menstral Flow | |
| • Light | 16(32%) |
| • Normal | 22(44%) |
| • Heavy | 12(24%) |
| Dysmenorrhoea | 24(48%) |

5. Discussion

Obesity is a very difficult emotional and psychological struggle. Abnormal uterine bleeding is common in obese adolescents who report amenorrhoea, heavy menstrual bleeding, or other menstrual abnormalities. In addition to anovulation because of immaturity of the hypothalamic-

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pituitary ovarian axis, the abnormal uterine bleeding in obese adolescents can result from elevated levels of estrogens due to increased peripheral aromatization of androgens, decreased sex hormone binding globulin, and increased insulin levels that can stimulate ovarian stromal tissue production of androgens. Elevated peripheral estrogen disrupts normal ovulation, which results in abnormal uterine bleeding. PCOS, characterized by ovulatory dysfunction and hyperandrogenism, frequently presents with adolescents. Among the reasons for childhood obesity were ubiquitous processed foods, fast foods, add that to the fact outdoor activities have been replaced by digital ones, and we have a scenario where children are eating more calories than they can expend.

6. Conclusion

Because the obese female adolescents faces medical, psychologic, and reproductive health challenges, early intervention is imperative in preventing short term and long term morbidity. Lifestyle modification like regular physical activity, decreasing intake of junk food, promoting healthy eating habits and maintaining optimal BMI should improve menstrual health. Obesity is to be controlled and the government should boldly ban some of the FAST FOODS which promote obesity.

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