International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2019; 3(2): 63-67
Received: 01-01-2019
Accepted: 05-02-2019

Dr. Shelly Singh
PG. Student, Department of Obstetrics and Gynaecology, Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India

Dr. Savita Rani Singhal
Senior Professor, Department of Obstetrics and Gynaecology, Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India

Correspondence
Dr. Shelly Singh
PG. Student, Department of Obstetrics and Gynaecology, Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India

The spectrum of gynaecological disorders in adolescent girls

Dr. Shelly Singh and Dr. Savita Rani Singhal

DOI: https://doi.org/10.33545/gynae.2019.v3.i2b.11

Abstract
Introduction: Adolescence has been defined by World Health Organization (WHO) as "Critical period of transition from childhood to adulthood and progression from appearance of secondary sexual characters to sexual and reproductive maturity, and development of the adult mental process."
AIMS and Objectives: Evaluation of gynaecological problems among adolescent and diagnostic modalities used to evaluate the disorders and treatment options.
Material and Methods: This observational descriptive study was conducted among the 335 adolescent girls aged between 10-19 years over the period from January 2017 to March 2018.
Results: The mean age of study population was 16.41±2.10 years, 71.05% of the girls presented in the late adolescence period with gynaecological problems. The mean age of menarche was 13.11±1.03 years. The mean body mass index was 18.93±3.22. 68.36% of girls presented in outdoor with menstrual problems followed by vaginal discharge (11.04%), pain abdomen (8.36%), urinary complaints (5.08%) and acne/Hirsuitism (2.68%) girls. Among girls with menstrual disorders maximum number of girls (41.04%) presented with heavy menstural bleeding, followed by amenorrhoea (19.65%), oligomenorrhea (16.59%), dysmenorrhoea (16.59%), hypomenorrhoea (2.64%) and irregular cycles in 3.49% girls. Among 57 girls with PCOS, oligomenorrhea (64.94%) was the most common presenting complaint followed by acne/hirsuitism (15.78%), secondary amenorrhoea (12.28%), heavy menstrual bleeding and hypomenorrhoea (3.50%) each. Mean haemoglobin in the present study was 11.80=1.45 mg/dl. Anaemia was seen in 156(46.56%) girls and severe anaemia was seen in 2.42% girls. Ultrasonographic examination carried out in to 203(60.59%) girls, among them 21.18% had PCOS, 10.83% had ovarian mass, 0.98% had TO mass, 8.73% had congenital anomalies and 0.98% each had ovarian torsion and renal calculi. Puberty menorrhagia was the most common disorder seen in 27.16% girls followed by PCOS (17.01%), dysmenorrhoea (11.34%), vaginal discharge (11.04%), ovarian masses (6.56%) and UTI (5.07%) in girls.
Conclusion: Menstrual disorders and PCOS are the common gynaecological disorders seen in about two third and one fifth of the adolescent girls in Indian population. Anaemia is associated in about one half of the adolescent girls. PCOS if not managed earlier can lead to metabolic syndrome and infertility. These gynaecological problems alter the quality of life, affecting career, education and social life of young girls. Prevention is always better so there is urgent need of awareness programs about gynaecological disorders at school and college levels so that these young girls can be made aware and seek medical advice timely, thus preventing long term complications of gynaecological disorders.

Keywords: Spectrum gynaecological, adolescent girls

Introduction

There are about 1.2 billion adolescents comprising a fifth of the world's population, and their number is increasing. According to the 2011 census, nearly 21% of India's population is in the adolescent age group amounting to 253 million adolescents [1]. Adolescence is the transitional period and of life is characterized by physical and psychological changes backed by the profound polyglandular endocrinological adjustments. The changes associated with puberty occur in orderly sequence over a definite time frame. In girls, pubertal development typically takes place over 4.5 years [2].

Puberty is a result of pulsatile GnRH secretion and activation of hypothalamic pituitary gonadal axis. It appears that hypothalamic pituitary gonadal axis in girls develops in 2 distinct stages during puberty. First, sensitivity to the negative or inhibitory effects of the low levels of circulating sex steroids present in childhood decreases in early puberty. Second, late in puberty, there is maturation of the positive or stimulatory feedback response to estrogen, which is responsible for the ovulatory midcycle surge of LH [3].

As described by Tanner and Marshall, five important physical changes are evident during puberty. These are breast, pubic and axillary hair growth, growth in height and menstruation. Most of the changes occur gradually but only the menarche can be dated. Moreover, there is a lot of variations in the timing of the events. The most common order is beginning of the growth spurt → breast budding (thelarche) → pubic and axillary hair growth (adrenarche) → peak growth in height → menstruation (menarche) [4].

Gynecological problems of adolescent occupy a special space in the spectrum of gynecological disorders of all ages. This is because of the physical nature of the problems which are so unique, special, and specific for the age group, and also because of the associated and psychological factors which are very important in the growth and psychological remodeling between childhood and womanhood. Adolescent girls are under great pressure, particularly in terms of examination performance, and problems such as menstrual dysfunction can be particularly difficult to manage. Careful and sympathetic assessment is crucial, and simple treatment remedies may be sufficient.

The changes associated with adolescents occur in orderly sequence over a definite time frame. Any deviation from this sequence or time frame should be regarded abnormal. Hence, it can present as Delayed Puberty i.e. girls who fail to develop the secondary sex characters by the age of 13 and menarche by 15 or as Precocious puberty i.e. girls who develop secondary sex characters by age of 8 and menarche before the age of 10 [5]. Usually after menarche few cycles are anovulatory due to immaturity of HPO axis resulting in heavy menstrual bleeding.

PCOS is arguably one of most common endocrine disorders in women of reproductive age, affecting 5-10% of women worldwide. It has potential of long term health consequences like diabetes mellitus, endometrial carcinoma and cardiovascular disorders hence early detection is important to preserve fertility and decrease morbidity.

Other common gynaecological problem encountered in adolescents is vaginal discharge, due to lack of knowledge and awareness even a normal physiological discharge can be considered abnormal by adolescent, resulting in anxiety and stress. Just counselling and awareness about the local hygiene is enough in such cases, and infective discharge is to be treated accordingly. Other gynaecological disorder include ovarian masses that can be simple cyst, complex ovarian cyst which could be just an incidental finding or tumours which may require detailed investigations and treatment. The several other gynaecological disorders which bring the adolescent to hospital are: urinary tract infection, sexually transmitted diseases, weight problems, height problems, breast diseases and pain abdomen.

The present study was done in tertiary care postgraduate institute catering patients from rural and urban areas, thus helps us to know the frequency pattern and various presentations of gynaecological disorders of adolescence in Haryana. In this study the pattern of gynecological problems of the adolescent population attending the gynecological outpatient department has been analysed.

Material and methods

The present observational descriptive study was conducted on all the adolescent girls aged between 10-19 years who attended the department of Obstetrics and Gynaecology at Pt. B.D. Sharma, PGIMS, Rohtak over the period of one year. After informed written consent was taken, the detailed history and thorough clinical examination of all girls were done. The history regarding age of menarche, menstrual history which included regularity of cycle, number of days of bleeding, cycle length, passage of clots, and dysmenorrhoea. Marital status, obstetrical history (if married) along with the past history were also taken. Detailed history of gynaecological problems was taken. General physical examination, height, weight, secondary sex characteristics was recorded. Local examination and examination in relation to hirsuitism, thyroid swelling and petechial spots was recorded. Per rectum examination was done, if indicated. If the patient had hirsuitism then visual method of scoring hair growth in women was assessed by Ferriman and Gallwey scoring [6]. Each of the nine body areas depicted was scored from 0 (absence of terminal hairs) to 4 (extensive terminal hair growth), and the scores in each area summed up for a total hair growth score. Hair growth scores of 6 to 8 or greater was generally considered to represent hirsuitism.

Investigations like complete blood count, routine urine, blood sugar coagulogram, hormonal assay (FSH, LH, Prolactin, TSH) and pelvic ultrasound were done as per indicated gynaecological disorder. Some specific test like S. insulin, DHEA-S, plasma free testosterone, bone age, CT scan, MRI, diagnostic laparoscopy if indicated was also done. All the girls were followed up till the final diagnosis was made and treatment started.

Statistical analysis

At the end, the data was compiled and analysed statistically. The qualitative variables were expressed as frequencies/percentages. Quantitative data was assessed by using Student t-test. A p-value <0.05 was considered statistically significant.

Observations

The girls were classified into age range as per WHO classification: early adolescence (9-13 years), mid-adolescence (14-15 years), and late adolescence (16-19 years). Total of 335 girls presented with various gynaecological problems out of which 71.05% of the girls presented in the late adolescence period and the mean age of the study population was 16.41±2.10 years. Maximum number of the girls i.e. 177(52.84%) were either studying in 12^{th} class or above 12^{th}, only 14(4.16%) girls dropped out their education. Only five girls were found to be married. Only 31 (9.26%) girls did not attain their menarche out of which in 8 girls, menarche was still awaited as they were younger than 14 years and other 23 girls presented with primary amenorrhoea. Of the total study population of 335, 304(90.74%) girls attained menarche, maximum (46.06%) of girls attained menarche by the age of 13 years followed by 70 (23.02%) girls who attained in 14 years of age. Mean age of menarche was 13.11±1.03 years. Mean body mass index was 18.93±3.22.

Only 98(29.25%) girls had normal menstrual pattern in which majority of girls i.e. 58 (59.18%) had duration of 3-5 days of their menstrual period. Distribution of girls according to their chief presenting complaints is shown in Table 1 and Pattern as per menstrual irregularities is depicted in Table 2.

Table 1: Distribution of girls according to Chief presenting complaints

Parameters	No. of cases	Percentage
Menstrual problems	229	68.36%
Vaginal discharge	37	11.04%
Pain abdomen	28	8.36%
Urinary symptoms	17	5.08%
Acne/Hirsuitism	9	2.68%
Miscellaneous	15	4.48%
Total	335	100%

Table 2: Pattern as per menstrual irregularities

Parameters	No. of cases	Percentage
Heavy menstrual bleeding	94	41.04%
Amenorrhoea	45	19.65%
Primary	23	10.05%
Secondary	22	9.60%
Dysmenorrhoea	38	16.59%
Oligomenorrhoea	38	16.59%
Irregular cycles with no pattern	8	3.49%
Hypomenorrhoea	6	2.64%
Total	229	100%

With regard to comparison of various parameters according to adolescent age group, we found that out of total 335 girls, 38(11.34%) presented with primary dysmenorrhoea in which majority of the girls 24(63.15%) were in late adolescence followed by 9 (23.70%) in mid adolescence 5(13.15%) in early adolescence period. A total of 45(13.43%) presented with amenorrhoea out of which 23(51.11%) girls had primary amenorrhoea and 22(4.88%) had secondary amenorrhoea. Out of the 23 girls who presented with primary amneorrhoea, only one girl presented in early adolescence i.e. at the age of 12yrs with imperforate hymen, maximum number of girls i.e. 16(69.58%) in late adolescence age, followed by 6(26.08%) in mid adolescence.

Ninety four (28.05%) girls out of the total study population presented with heavy menstrual bleeding, out of this maximum 57(60.64%) girls presented in late adolescence age. A total of 94(28.04%) girls with heavy menstrual bleeding, 8(8.51%) girls with severe anaemia were admitted and blood was transfused. In 13(13.82%) girls, only iron and tranexamic acid were given, they were counselled for the requirement of no other intervention and rest 72(21.49%) were put on hormonal therapy in which 2 girls had PCOS so were given levonorgesterol + cyproacetate combination and rest were given combination of levonorgestrel+etyinyl oestradiol. One girl with idiopathic thrombocytopenic purpura was admitted under medicine indoor and packed cell and plasma rich platelet were transfused to her.

A total of 57 girls were diagnosed with PCOS out of which maximum girls i.e. 37(64.94%) presented with oligomenorrhoea, 9(15.78%) presented with acne/hirsuitism and 7 (12.28%) with secondary amenorrhoea. A total of 52 girls presented to the outdoor with complaint of pain abdomen. In 16(30.76%) girls, we found to have associated ovarian masses, 5 (9.61%) girls had imperforate hymen, 3(5.76%) had urinary tract infection and 2(3.84%) had renal calculi. In 10(19.23%) girls, no underlying abnormality was detected after all the examination and investigations, they were counselled. Maximum number of girls i.e. 176(53.01%) had Hb >11.9 g/dl followed by 156(46.56%) with anaemia. Among 156 girls 34.33% had mild anaemia, 10.24% had moderate anaemia and 2.42% had severe anaemia. Mean Hb in the present study was 11.80±1.45 mg/dl. ESR was carried out in 116 girls out of which 111(95.78%) were having normal ESR and in 5(4.32%), it was raised. Coagulation profile was done in 140 girls out of which 139(99.28%) had normal coagulation profile and in one (0.72%) had raised INR. Distribution of cases as per ultrasonographic findings are shown in Table 3.

Table 3: Distribution as per ultrasonographic findings

USG findings (n=203)	No. of cases	No. of cases (%)
Normal	117	57.64%
PCOS	43	21.18%
Ovarian mass	22	10.83%
Congenital anomalies	18	8.88%
Renal calculi	2	0.98%
Lymphadenitis	1	0.49%
Total	203	100%

Distribution of girls as per diagnosis is shown in Table 4.

Table 4: Distribution of girls as per diagnosis

Diagnosis	No. of girls	Percentage
Puberty menorrhagia	91	27.16%
PCOS	57	17.01%
Dysmenorrhoea	38	11.35%
Vaginal discharge	37	11.04%
Ovarian mass	22	6.56%
Urinary tract infection	17	5.08%
MRKH	7	2.08%
Imperforate hymen	7	2.08%
Turner syndrome	4	1.20%
Renal calculi	2	0.60%
ITP	1	0.30%
Miscellaneous	15	4.50%
NAD	37	11.04%
Total	335	100%

Distribution of girls as per adolescent PCOS with their presentation is shown in Table 5.

Table 5: Adolescent PCOS with their presentation

	No. of girls	Percentage
Oligomenorrhoea	37	64.94%
Acne/hirsuitism	9	15.78%
Secondary amenorrhoea	7	12.28%
Heavy menstrual bleeding	2	3.50%
Hypomenorrhoea	2	3.50%
Total	57	100%

Discussion

In the present study the mean age of girls presenting with gynaecological disorders was 16.41±2.10 years which is comparable with study by Samarath *et al*. [7] in which mean age was 17.37±2.09 years. Maximum number of girls (71.05%) presented with gynaecological problems in the late adolescence period 16-19 years, same was observed in study by Goswami *et al*. [8] with 56% girls in age group of 17-19 years. This is as expected as most of the gynaecological problems are seen in late adolescence.

In the present study only 5 girls (1.50%) girls were found to be married and all were married after the age of 18 years. This is in contrast to study by Goswami *et al*. [8] done at GMRC Gwalior, Madhya Pradesh and by Bandkhadke *et al*. [9] done at Govt. Medical College, Pune in which 13.33% and 18.3% girls were married respectively. This difference could be due to the cultural and literacy rate differences between the different states. The mean age of menarche was 13.11±1.03 years and 46.06% girls

attained menarche at age of 13 yrs. This is comparable with study by Samarth *et al*. [7] and Waghachavare *et al*. [10] in which mean age of menarche was 12.68±1.03 and 13.73±1.2 years respectively. The mean BMI of study population was 18.93±3.22 and 53.74% girls were underweight and this is in contrast with study by Goswami *et al*. [8] with 69.33% girls being underweight.

Menstrual problems were the commonest problem seen in 68.36% of girls. Similarly in study by Goswami *et al*. [8] and Sebanti *et al*. [11] menstrual problems were observed in 60%, 53.33%, 58.06% girls respectively.

Excessive vaginal discharge was the chief presenting complaint in 11.04% girls and similarly in study by Jagannath *et al*. [12] and Rathod *et al*. [13] 13.10% and 8.85% girls respectively were reported to have excessive vaginal discharge. They were told about to maintain perineal hygiene along with a course of antibiotics.

Urinary symptoms in the form burning micturition, increased urgency frequency were observed in 5.08% girls and were diagnosed to have urinary tract infection. This is comparable with study by Rathod *et al*. [13] in which UTI was reported in 5.4% girls. Nine girls (2.68%) presented with acne and/or hirsuitism, out of which three had only acne, three had hirsuitism and three had both acne and hirsuitism. Similarly in study by Prasad *et al*. [14] and Jaganath *et al*. [12] 10%, 2.76% of girls reported with acne and hirsuitism, the difference may be due the difference in population i.e. 120 girls enrolled in study by Prasad *et al*. [14]

Dysmenorrhoea was observed in 16.59% girls, this is comparable with study by Goswami *et al*. [8] with 17.7% girls. oligomenorrhea was observed in 16.59% girls, which is similar with the study by Prasad *et al*. [14] with 18.75% girls. Amenorrhoea was observed in 19.65% girls that include both primary and secondary amenorrhoea which is comparable with study by Ramaraju *et al*. [15] in which 21.62% girls had amenorrhoea.

Heavy menstrual bleeding was observed in 28.05% girls with menstrual irregularities, similarly in study by Goswami *et al*. [8] and Jagannath *et al*. [12] menorrhagia was seen in 55.55% and 33.34% girls respectively. There has been higher incidence of menorrhagia in study by Goswami *et al*. [8]

In the present study 57 (17.01%) girls were diagnosed to have PCOS out of these maximum number of girls (89.48%) with PCOS were in late adolescence age group similarly in study by Kalavathi *et al*. [16] 76.2% of adolescents with PCOS were in late adolescence age group. This is as expected as PCOS is usually not seen in early adolescence periods.

The mean haemoglobin in the study population was 11.80±1.46 mg/dl, 53.01% girls had Hb >11.9 g/dl and 46.56% had anaemia in which 34.33% had mild anaemia, 10.24% had moderate anaemia and 2.42% had severe anaemia.

Thyroid Stimulating Hormone was tested in 281 girls and was found to be normal in 98.22% of girls. Similarly in study by Prasad *et al*. [14] Goswami *et al*. [8] two and one girl had hypothyroidism and presented with secondary amenorrhoea and menorrhagia respectively.

Coagulation profile was done for 140 girls, only one girl had raised INR of 3.8 with platelet count of 45000 and was diagnosed with ITP and presented with menorrhagia similarly in studies by Jagannath *et al*. [12] Rathod *et al*. [13] Sebanti *et al*. [11] one girl in each were diagnosed with ITP and also presented with menorrhagia. Among 203 girls ultrasound was done and 22(10.83%) girls were found to have ovarian masses this is comparable with study by Sebanti *et al*. [11] Goswami *et al*. [8] Ramaraju *et al*. [15] Samarath *et al*. [7] in which 15.32%, 5.33%, 4%, 1.86% of adolescents had ovarian masses.

Puberty menorrhagia has been diagnosed as the most common gynaecological disorder in the study population, seen in 27.16% girls. Similarly in study by Bandkhade *et al*. [41] it was seen in 30.8% girls, Jagannath *et al*. [10] in 25.52% of girls, Rathod *et al*. [44] in 14.80% of girls.

Conclusion

Menstrual disorders and PCOS are the common gynaecological disorders seen in about two third and one fifth of the adolescent girls presenting in gynaecology outdoor in Indian population. Anaemia is associated in about one half of the adolescent girls. PCOS if not managed earlier can lead to metabolic syndrome and infertility. These gynaecological problems alter the quality of life, affecting career, education and social life of young girls. Prevention is always better so there is urgent need of awareness programs about gynaecological disorders at school and college levels so that these young girls can be made aware and seek medical advice timely, thus preventing long term complications of gynaecological disorders.

References

1. Government of India. Census of India. Registrar General of India. 2011. Available from: http://www.censusindia.gov.in.
2. Marshall WA, Tanner JM. Variations in patterns of pubertal changes in girls. Arch Dis Child. 1969; 44:291-303.
3. Grumbach MM, Kaplan SL. The neuroendocrinology of human puberty: an oncogenetic perspective. In: Grumbach MM, Sizonenko PC, Aubert ML, eds. Control of the onset of puberty. Baltimore MD, Williams and Wilkins, 1990, 1-62.
4. Marshall WA, Tanner JM. Variations in the pattern of pubertal changes in girls. Arch Dis Child. 1970; 45:13-23.
5. Kaplowitz PB, Oberfield SE. The drug and therapeutic and executive committee of the Lawson Wilkins Pediatric Endocrine Society, Reexamination of the age limit for defining when puberty is precocious in girls in the United States, implications for evaluation and treatment. Pediatrics. 1999; 104:936-41.
6. Ferriman D, Gallwey JD. Clinical assessment of body hair growth in women. J Clin Endocrinol. 1961; 21:1440-7.
7. Samarth S, Saunitra I, Chella H, Kanika RK. Study of various gynaecological problems and reproductive health awareness amongst adolescents at a rural setup in central India. Int. J Reprod Contracept Obstet Gynecol. 2014; 3:1010-14.
8. Goswami P, Ahirwar G, Mishra P, Agrawal V. Adolescent gynaecological problems: a prospective study. J Evol Med Dent Sci. 2015; 4:16709-12.
9. Bandkhadke GM, Salvi PP, Bhalerao AN, Bhosale RA, Chandanwale AS. A study of demographic profile and menstrual morbidities among female patients visiting a tertiary care center. Int J Med Sci Res Pract. 2015; 2:20-23.
10. Waghachavare VB, Chavan VM, Dhumale GB. A study of Menstrual problems among the female junior college students from rural area of Sangli District. Natl J Comm Med. 2013; 4:236-40.
11. Sebanti G, Rekha D, Sibani S. A profile of adolescent girls with gynecological problems. J Obstet Gynecol India. 2005; 55:353-5.
12. Jagannath P, Prasad DB, Kumar BM. Evaluation of gynaecological problems among adolescent girls attending gynaecology out patient department in Gauhati Medical

College and Hospital. Sch J App Med Sci. 2015; 3:2729-32.
13. Rathod AD, Chavan RP, Pajai SP, Bhagat V, Thool P. Gynecological problems of adolescent girls attending outpatient department at tertiary care center with evaluation of cases of puberty menorrhagia requiring hospitalization. J Obstet and Gynecol. 2016; 66:400-06.
14. Prasad D, Singh K, Pankaj S. Clinical Spectrum of adolescent girls in tertiary care centre. Int. J Sci. Study. 2014; 2:46-9.
15. Ramaraju HE, Shivakumar HC, Khazi AA. Adolescent Gynaecological Problemes in a tertiary care Centre. Indian J Basic Appl Med Res. 2015; 4:649-53.
16. Kalavathi DB, Shamanewadi AN. Descriptive study of polycystic ovarian syndrome in Adolescents girls among a tertiary care hospital of Bangalore. Indian J Bas Appl Med Res. 2015; 4:453-7.