

Research Article

# Clinical Study of Gynecological Problems in Adolescent Age Group at Tertiary Care Center

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## ABSTRACT

**Background:** According to WHO adolescence is the age between 10-19 years Adolescents constitute 21.4% of the population in India [1]. It is the period where enormous physical and psychological changes occur. Hormonal events play a key role in this transition. Profound bodily changes, sexual development and altered emotional and behavioural changes are observed during this period, besides endocrine influences, genetic, nutritional and other environmental factors play an important role during this transitional period of life.

**Aim and Objectives:** 1. Clinical study of gynaecological problems in adolescent age group at tertiary care center. 2. To study proportion of different gynaecological problems in adolescent girls.3.To study the etiological factors in different gynaecological problems in adolescent girls.4.To study the treatment modalities in different gynaecological problems in adolescent girls.

**Methods: Study Design:** Cross sectional study. **Study place:** OBGY Department of VDGMC Latur, Maharashtra, India. **Study Duration:** September 2022 to May 2024. **Study population:** The study was conducted on all adolescent girls who were from urban and rural surroundings of tertiary care center visited the gynecology OPD. **Study sample:** 180

**Result:** Majority of gynecological problems are present in late adolescent age group. In 180 cases admitted cases are 12 cases [6.66%] and 168 cases [93.3%] are from OPD.

26 cases who has normal menstrual patterns presented with dysmenorrhea (14 cases) and 8 cases with leucorrhoea and 3 cases with dysuria and 1 case with mass per abdomen. most of the cases presented with hirsutism and acne 40 cases (22.22%) followed by Leucorrhoea and itching 29 cases (16.11%), Teenage pregnancy found in 12 cases (6.66%), overweight 6 cases(3.33%), Mass per abdomen 6 cases(3.33%), dysuria 3 cases (1.66%), Precocious puberty 1 case (0.55%) and Delayed puberty 1 case (0.55%).

most common etiopathology was AUB 96 cases (53.33%) followed by PCOS 39 cases (21.66%) and 4 cases diagnosed with Mullerian agnesis (2.22%),14 cases (7.77%)thyroid disorders, 06 cases(3.33%) hyperprolactinemia, 10 cases with vaginal infections and 02 cases with urinary tract infections. most common treatment modalities was Hormonal treatment 56 cases (31.11%) followed by Iron tablets in 59cases (32.77%), Blood transfusions in 2 cases(1.11%),Tranexamic acid in 38cases (21.11%), Mefenamic acid in 32 cases(17.77%),Thyroxin in 14cases[7.77%],Surgery in 10 cases (5.55%),Cabergoline in 4 cases[2.22%],antifungal in 4 cases (2.22%) , Antibiotics in 6 cases[5.55%], AKT in 1 case(0.55%). Many girls treated with multiple modalities.

**Conclusions:** Dysmenorrhea and heavy menstrual bleeding as predominant symptoms and excessive weight gain is most common examination finding. Majority of cases treated with hormonal treatment and iron supplementation.

**Keywords:** Hirsutism, Acne, Dysmenorrhea, Mullerian Agnesis, Abnormal Uterine Bleeding.

## INTRODUCTION

According to WHO adolescence is the age between 10-19 years Adolescents constitute 21.4% of the population in India [1]. It is the period where enormous physical and psychological changes occur. Hormonal events play a key role in this transition. Profound bodily changes, sexual development and altered emotional and behavioural changes are

observed during this period, besides endocrine influences, genetic, nutritional and other environmental factors play an important role during this transitional period of life.

Adolescents have the lowest mortality among the different age groups so received low priority. Nutritional deprivation, increased demand of adolescent's body, and excessive menstrual loss all aggravate and exacerbate anaemia and its effects. Many adolescents'

girls with health problems never present to their family physician more so with menstrual disturbances.

Embarrassment to discuss these problems, fear of disease and ignorance and lack of knowledge regarding the availability of health services lead to delayed presentation. Menarche is considered as the central event of female puberty which is associated with emotional and psychological problems. The menstrual cycle involves the co-ordination of many events by the Hypothalamus – pituitary –ovarian and uterine axis and is influenced by environmental, genetic, nutritional, socio-economic and psychological factors [2].

The mean age of menarche is between 12-13 years [3-5]. Adolescents have the lowest mortality among the different age groups and have therefore received low priority. Nutritional deprivation, increased demand of adolescent's body, and excessive menstrual loss, all aggravate and exacerbate anemia and its effects. Menstrual disturbances are not uncommon and may add further disruption during this difficult phase for adolescents and their families.

Many adolescents with menstrual disturbances never present to their family doctor or gynecologist. Embarrassment about discussing menstruation, fear of disease, and ignorance about available services may lead to delayed presentation. Menarche is considered as the central event of female puberty. The psychosocial and emotional problems associated with menarche are of considerable magnitude.

The menstrual cycle involves the coordination of many events by the hypothalamic–pituitary–ovarian axis and is readily influenced by psychological and pathological changes occurring during one's lifespan. The age of menarche is determined by general health, genetic, socioeconomic, and nutritional factors [2].

Various adolescent Gynecological problems are menstrual disorders like dysmenorrhoea, abnormal uterine bleeding, primary amenorrhoea, PCOD, puberty menorrhagia leading to severe anaemia, pregnancy related problems, endocrinopathies etc. adolescent girls with puberty menorrhagia need to be investigated for coagulation disorders. The most common coagulation abnormality diagnosed was idiopathic thrombocytopenic purpura, followed by von Willebrand disease [6].

Endocrine dysfunctions like hypothyroidism, hyperprolactinemia can cause amenorrhea or irregular bleeding. Infections like tuberculous endometritis can present primary amenorrhoea. About 40-50% suffer with Dysmenorrhea of varying severity ranging from minimal discomfort to severe pelvic pain with headache, nausea and vomiting, diarrhea or constipation, fainting, premenstrual symptoms such as tender breasts and swollen abdomen, which may continue throughout the period [7].

Dysmenorrhea is a very common problem among adolescent girls, Studies from India reported the prevalence between 50 to 87.8% [8] & another study in 1648 adolescent girls in selected districts of Karnataka, the incidence of dysmenorrhea was found to be 87%.

Sexual abuse of adolescent girls will have profound and potentially lifelong psychological effect. Unprotected coitus, sex abuse and repeated unsafe abortions have increased the rate of PID and ectopic pregnancies. Women survivors of childhood sexual abuse are at risk for early unplanned pregnancy, STDs, prostitution, further sexual abuse (re victimization), antisocial behavior, running away from home, lying, stealing, eating disorders and obesity, and multiple somatic symptoms[10]. They are more likely to engage in health risk behaviors such as smoking, substance abuse, and early sexual activity with multiple partners .

Adolescents may present with Pelvic masses like Functional ovarian cyst, Obstructing vaginal / uterine anomalies. Ovarian tumor, Tubercular mass, Pelvic kidney. In adolescents, most commonly are functional or benign neoplastic ovarian masses, Mature cystic teratoma is the most frequent neoplastic tumor of children and adolescence [11].

Obstructive genital anomalies like imperforate hymen to transverse vaginal septa vaginal agenesis present with primary amenorrhea and pelvic mass. PCOD, obesity, endocrinopathies are increasing in incidence in adolescent age group due change in life style patterns, sedentary life, faulty eating habits.

#### **Objectives**

1. To study proportion of different gynaecological problems in adolescent girls
2. To study the etiological factors in different gynaecological problems in adolescent girls.

3. To study the treatment modalities in different gynaecological problems in adolescent girls.

## MATERIAL AND METHODS

**Study design:** Cross sectional study

**Study setting:** OBGY Department of VDGMC Latur, Maharashtra, India

**Study duration:** September 2022 to May 2024

**Study population:** The study was conducted on all adolescent girls who were from urban and rural surroundings of tertiary care center visited the gynecology OPD and admitted in ward for gynecological problem fulfilling the inclusion and exclusion criteria.

**Study area:** All adolescent who attended gynec OPD and admitted in gynec ward

**Sample size calculation:** With reference study by Cheenepalli Anuradha, Iruganti Indira [12] He reported that the Dysmennorrhoea was most prevalent complain in adolescent age group of prevalence 42 % is considered for sample size calculation.

Formula:  $4pq/L^2$

P= Prevalence 42%

Q= 100-P=58

L=Allowable error 20%

$4 \times 42 \times 58 / 70.56 = 138.09$

Sample size rounded to=180

### Inclusion Criteria:

- Age between 10-19 YRS
- Pregnant women 18-19 years
- Adolescent girls attending the OPD and admitted in gynecology ward with gynecological problems

### Exclusion Criteria

- Age more than 19 years and less than 10
- Medico legal cases including cases under POCSO
- Adolescent girls with other than gynecological problems attending OPD with surgical and medical illness.

**Sampling Method:** Convenient sampling method

### Approval for the Study:

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of OBGY and other related department was obtained. After obtaining informed verbal consent from all patients coming to our institute during study period

according to exclusion and inclusion criteria admitted to OBGY ward of tertiary care centre such cases were included in the study.

### Sampling Technique

Convenient sampling technique used for data collection. All patients attending gynecology OPD and admitted in OBGY ward of tertiary care center from September 2022 to May 2024.

### Methods of Data Collection and Questionnaire

Pre-designed and pre-tested questionnaire was used to record the necessary information. Questionnaires included general information, such as age, sex, Medical history- chief complain, past history, general examination, systemic examination. Menstrual history.

All adolescent girls in the age group of 10 to 19 years attending gynaecology OPD in our OPD suffering from various gynaecological problems like menstrual disorders, vaginal discharge, acne, hirsutism, urogenital malformations were included. A detailed history was taken.

First, the girl interviewed regarding her problems and then girl's mother was interviewed to get the accurate details of any previous medical problems. Physical examination including height and weight, general examination, secondary sexual characters, and any congenital anomalies was noted.

At the end of examination, nature of problem was discussed with the girl and parent. Privacy, comfort and friendliness were provided to the patient for getting any confidential information and sexual activity. Investigation such as haemogram, coagulogram, hormonal assays (FSH, LH, Prolactin, and Thyroid profile), ultrasound examination of abdomen and pelvis was done when indicated. The data was incorporated in excel sheet and analyzed using appropriate statistical methods.

### Data Entry and Analysis

The data were entered in Microsoft Excel and data analysis was done by using SPSS demo version no 21 for windows. The analysis was performed by using percentages in frequency tables and  $p < 0.05$  was considered as level of significance using the Chi-square test.

### RESULT AND OBSERVATIONS

The present cross sectional study was conducted on all adolescent who was visited

the gynecology OPD and admitted in gynecology ward fulfilling the inclusion and

exclusion criteria during study period such cases included in the study.

Table No.1: Distribution of cases as per age (n=180)

Age (in Years)	Frequency	Percentage
10-12	24	13.33%
13-15	57	31.66%
16-19	99	55%
Total	180	180 (100%)

Above table shows that, majority of cases were from 16-19 years age group 99 cases (55%) followed by 57 (31.66%) cases found

in 13-15 years age group and 24 (13.33%) cases observed in 10-12 years age group.

Table no.2 Proportion of gynecological problems (n=180)

Gynecological problems	Frequency	Percentage
<b>A]Menstrual associated</b>		
Dysmenorrhea	77	42.77%
Heavy menstrual bleeding	64	35.55%
Oligomenorrhea	53	29.44%
Hypomenorrhea	17	9.44%
Secondary amenorrhea	12	6.66%
Primary amenorrhea	08	4.44%
<b>B]Other gynecological</b>		
Hirsutism, acne	40	22.22%
Leucorrhoea, itching	29	16.11%
Teenage pregnancy	12	6.66%
Overweight (BMI> 25)	06	3.33%
Ovarian mass	06	3.33%
Dysuria	03	1.66%
Delayed puberty	01	0.55%
Precious puberty	01	0.55%

The above table shows most of cases presented with Dysmenorrhea 77 cases

(42.77%) followed by Heavy menstrual bleeding 64(35.5%).

Table No.3: Proportion of Menstrual patterns (n=180)

Menstrual patterns	Frequency	Percentage
Normal menstrual patterns	26	14.4%
Abnormal menstrual patterns = (154 cases)		
Heavy menstrual bleeding	64	35.55%
Oligomenorrhea	53	29.44%
Hypomenorrhea	17	9.44%
secondary Amenorrhea	12	6.66%
Primary Amenorrhea	08	4.44%
Total	180	100%

The above table shows most of the cases presented with Heavy menstrual bleeding 64 (35.55%), Oligomenorrhea 53 (29.44%),

Hypomenorrhea 17 cases (9.44%), Secondary Amenorrhea 12 cases (6.66%) and Primary Amenorrhea 08 cases (4.44%)

Other gynecological problems	Frequency	Percentage
Hirsutism, acne	40	22.22
Leucorrhoea, itching	29	16.11%
Teenage pregnancy	12	6.66%
Overweight (BMI>25)	06	3.33%

Mass per abdomen	06	3.33%
Dysuria	03	1.66%
Delayed puberty	01	0.55%
Precious puberty	01	0.55%

Table No.4: Proportion of other gynecological problems & associated conditions (n=180)

The above table shows most of the cases presented with hirsutism and acne 40 cases (22.22%) followed by Leucorrhoea and itching 29 cases (16.11%), Teenage pregnancy found in 12 cases (6.66%), overweight 6

cases(3.33%), Mass per abdomen 6 cases(3.33%), dysuria 3 cases (1.66%), Precocious puberty 1 case (0.55%) and Delayed puberty 1 case (0.55%).

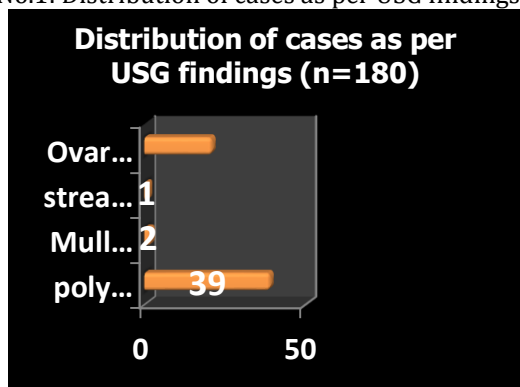
Table no.5: Distribution of cases as per Examination finding (N=180)

Examination Finding	Frequency	percentage
Overweight [BMI>25]	06	3.33%
Mass per Abdomen	06	3.33%
Thyroid swelling	02	1.11%
Short vagina	02	1.11%
Imperforate hymen	01	0.55%
Absent Secondary sexual characteries development	01	0.55%
Short stature	01	0.55%

The above table shows most common examination finding was overweight 6 cases (3.33%) and Mass per abdomen 6 cases (3.33%) and 2 cases with thyroid swelling,2 cases of

short vagina, 1 case found with Imperforate hymen (0.55%), one case with short stature(0.55%) , 1 case (0.55%) of absent secondary sexual characteries development.

Figure No.1: Distribution of cases as per USG findings (n=180)



The above figure shows majority of cases diagnosed with PCOS 39 cases (21.66%) followed by Ovarian Cyst 21 cases (6.11%),

Mullerian agenesis 2 (1.11%), (5.94%), Haematocolpos, heamotometra 2 cases (1.11%) and steaky ovaries 1 case.

Table no.6: Distribution of cases as per Etiopathological (N=180)

Etiopathological	Frequency	Percentage
AUB	96	53.33%
PCOS	39	21.66%
Thyroid disorders	14	7.77%
Vaginal infections	10	5.55%
Hyperprolactinemia	06	3.33%
Mullerian agenesis	04	2.22%
Urinary tract infections	02	1.11%

The above table shows most common etiopathology was AUB 96 cases (53.33%)

followed by PCOS 39 cases (21.66%) and 4 cases diagnosed with Mullerian agenesis

(2.22%), 14 cases (7.77%) thyroid disorders, 06 cases (3.33%) hyperprolactinemia, 10 cases

with vaginal infections and 02 cases with urinary tract infections.

Table No.7: Treatment Modalities (n=180)

Treatment modalities	Frequency	Percentage
Hormonal treatment [OCPs, progesterones]	59	32.77%
Iron supplements	59	32.77%
Tranexamic acid	38	21.11%
Mefenamic acid	32	17.77%
Thyroxin	14	7.77%
Surgery [cystectomy, incision and drainage and cervical dilatation]	10	5.55%
Antibiotics	06	3.33%
Cabergoline	04	2.22%
Antifungal	04	2.22%
Blood transfusions	02	1.11%
AKT	01	0.55%

The above table shows most common treatment modalities was Hormonal treatment 56 cases (31.11%) followed by Iron tablets in 59 cases (32.77%), Blood transfusions in 2 cases (1.11%), Tranexamic acid in 38 cases (21.11%), Mefenamic acid in 32 cases (17.77%), Thyroxin in 14 cases [7.77%], Surgery in 10 cases (5.55%), Cabergoline in 4 cases [2.22%], antifungal in 4 cases (2.22%), Antibiotics in 6 cases [5.55%], AKT in 1 case (0.55%). Many girls treated with multiple modalities.

## DISCUSSION

Many adolescents' girls with health problems never present to their family physician more so with menstrual disturbances. Embarrassment to discuss these problems, fear of disease and ignorance and lack of knowledge regarding the availability of health services lead to delayed presentation. Menarche is considered as the central event of female puberty which is associated with emotional and psychological problems. The menstrual cycle involves the co-ordination of many events by the Hypothalamus – pituitary – ovarian and uterine axis and is influenced by environmental, genetic, nutritional, socio-economic and psychological factors [13]. The mean age of menarche is between 12-13 years [14-16]

Adolescents have the lowest mortality among the different age groups and have therefore received low priority. Nutritional deprivation, increased demand of adolescent's body, and excessive menstrual loss, all aggravate and exacerbate anemia and its effects. Menstrual disturbances are not uncommon and may add further disruption during this difficult phase for

adolescents and their families. Many adolescents with menstrual disturbances never present to their family doctor or gynecologist. Various adolescent Gynecological problems are menstrual disorders like dysmenorrhoea, abnormal uterine bleeding, primary amenorrhoea, PCOD, puberty menorrhagia leading to severe anaemia, pregnancy related problems, endocrinopathies etc. adolescent girls with puberty menorrhagea need to be investigated for coagulation disorders. The most common coagulation abnormality diagnosed was idiopathic thrombocytopenic purpura, followed by von Willebrand disease [17].

Dysmenorrhea is a very common problem among adolescent girls, Studies from India reported the prevalence between 50 to 87.8% [18] & another study in 1648 adolescent girls in selected districts of Karnataka, the incidence of dysmenorrhea was found to be 87%.

In current study majority of cases were from 16-19 years age group 99 cases (55%) followed by 57 (31.66%) cases found in 13-15 years age group and 24 (13.33%) cases observed in 10-12 years age group. Similar result observed in the study by Bhalerao-Gandhi A et al [19] he reported that the 27% were in the early adolescent age group (10-14 years). Maximum i.e. 73% were in the late adolescent age group (15-19 years). . Another study Bieniasz J et al [20] Average age in the examined group was 16.2 years.

In current study most of the cases presented with Dysmenorrhea 77 cases (42.77%) followed by Heavy menstrual bleeding 64 cases (35.5%), Oligomenorrhea 53 cases

(29.44%), Hypomenorrhea 17 cases (9.44%), Primary Amenorrhea 8 cases (4.44%) and Secondary Amenorrhea 12 cases (6.66%). similar result found in the study by Mathew MM et al [21] He reported that the Out of 400 adolescents, menstrual disorders were seen in 68.8%. Among 275 cases with menstrual problems, almost 81.8% of the cases were abnormal uterine bleeding (AUB). Around 12.0% of dysmenorrhea cases, 1.5% of primary amenorrhea cases, and 4.7% of secondary amenorrhea cases were also noted. Similar result observed in the study by Bhalerao-Gandhi A et al [19] he reported that the most common complaints were related to menstrual cycles, including secondary amenorrhoea and oligomenorrhoea as 50% girls suffered from the same. 37% of early adolescent girls and 55% of late adolescent girls had oligomenorrhoea. The second most common complaint was of menorrhagia, i.e. 28% of the study group had menorrhagia/polymenorrhoea. 56% of early adolescent girls had menorrhagia whereas 18% of late adolescent girls suffered from the same. Less common complaints were of dysmenorrhoea, hypomenorrhoea. It was worth noting that 3% had primary amenorrhoea.

Another study Kalyankar BV et al [22] He found that the Most common gynecological problems among the adolescent girls were menstrual disorders 156 (52%), The most common type of menstrual disorder was that of oligomenorrhea 86 (55.2%). Out of 38 PCOS cases, 31(81.6%) cases presented with oligomenorrhea.

In current study most of the cases presented with hirsutism and acne 40 cases (22.22%) followed by Leucorrhoea and itching 29 cases (16.11%), Teenage pregnancy found in 12 cases (6.66%), dysuria 3 cases (1.66%), Precocious puberty 1 case (0.55%) Delayed puberty 1 (0.55%), Overweight 6 (3.33%). Kalyankar BV et al [22] He found that the vaginal discharge i.e. 35(11.6%), 24(8.0%) gave history of sexual assault, 24 (8%) had excessive weight gain and 20(6.6%) reported urinary tract infection. Out of 19 teenage pregnancies, in 8(42.1%) cases LSCS was done, 4(21.3%) cases had vaginal delivery and 4(21.0%) cases had MTP.

Similar result observed in the study by Bhalerao-Gandhi A et al [19] he reported that the 28% had complaints of androgenic features like hirsutism, acne, acanthosis which

depicts the preponderance for polycystic ovarian disease. 11% of total adolescent girls had leucorrhoea, few had vulvar problems like pruritus, two girls had breast problems like mastalgia and breast lump. Only one case of teenage pregnancy was seen during the study period and one case was diagnosed to have psychological problem. Pegu B et al [23] he reported that the vaginal discharge (18.68%) and UTI (9.8%). Teenage pregnancy (0.84%) and ovarian tumor (0.60%) was found in a few cases.

In present study majority of cases diagnosed with PCOS 39 cases (21.66%) followed by Ovarian Cyst 1 cases (11.66%), Mullerian agenesis 2 (1.11%), (5.94%), Haematocolpos, haematometra 2 cases (1.11%) and Ovarian agenesis 1 case. Similar result observed in the study by Bhalerao-Gandhi A et al [19] he reported that the 32% of total cases had features of polycystic ovaries on sonography, 3 early adolescent girls had sonography findings of benign ovarian cysts like follicular/hemorrhagic cysts, Mullerian agenesis 3 cases, 1 case found with Ovarian agenesis In current study most common etiopathology was AUB 96 cases (53.33%) followed by PCOS 39 cases (21.66%) and 4 cases diagnosed with Mullerian agnesis (2.22%) and most common treatment modalities was Hormonal treatment 59 cases (32.77%) followed by Iron supplements 59 cases (32.77%), Tranexamic acid 38 cases (21.11%), Mefenamic acid 32 cases (17.77%), Thyroxin 14 cases [2.77%], Surgery 10 cases (5.55%), Antibiotics 6 cases (1.66%), Antifungal 4 cases (2.77%). Similar result observed in the study by Bhalerao-Gandhi A et al [19] he reported that the 66% cases required hormonal treatment, Hematinics 22 cases, Hemostatics 13 cases, Antibiotics/Antifungal 11 cases, Surgical intervention was required in 4 cases.

## CONCLUSION

The peak incidence of gynecological issues occurs between 16-19 years, emphasizing the need for targeted interventions during this phase. This study identifies dysmenorrhea and heavy menstrual bleeding as predominant symptoms and excessive weight gain is most common examination finding. This needs life style modifications like exercise, sports and avoiding junk food. As Abnormal uterine bleeding (AUB) and polycystic ovary syndrome (PCOS) are major etiopathologies there is a need for integration of AUB and PCOS diagnosis and management into adolescent

healthcare services. As majority of cases treated with hormonal treatment and iron supplementation there is a need for prioritization of hormonal treatment and iron supplementation in management protocols.

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