

# Study on adolescent gynaecological problems

Bhakti V Kalyankar, Vijay Y Kalyankar, Shrinivas Gadappa, Megha Chauhan

Corresponding author: Dr Megha Chauhan, Senior Resident, Department of Obstetrics and Gynecology, Government medical college, Aurangabad, Maharashtra, India;  
Email : megha\_chauhan94@yahoo.com

Distributed under Attribution-Non Commercial – Share Alike 4.0 International (CC BY-NC-SA 4.0)

## ABSTRACT

**Background:** Adolescent is age between 11-19 years, where there are enormous physical, psychological, sexual, emotional and behavioural changes. They constitute 22 % of population in India. Hence, their unique problems need to be addressed. **Objectives:** 1) To study gynaecological problems and their clinical profile in adolescent girls. 2) To evaluate treatment modalities of gynaecological problems in adolescent girls. 3) To evaluate reproductive health awareness among adolescent girls. **Methods:** Girls in the age group of 11 to 19 years attending gynaecology OPD or emergency were included in the study. First, the girl was interviewed keeping her privacy and dignity. A detailed history and examination were done emphasizing on pubertal events such as thelarche, pubarche, pregnancy and menarche. Investigations like hemogram, coagulograms, hormonal assays, and sonography were done wherever applicable. **Results:** 71.67% achieved menarche at 14-16 years of age. Most common gynaecological problems among the adolescent girls were menstrual disorders 156 (52%), followed by 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. 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. Out of 300 cases, 200(66.7%) cases were aware of physical signs of puberty, 245(81.7%) cases were aware of STD, HIV and its mode of transmission, 200(66.7%) cases were aware about contraceptive methods, 150(50.0%) cases were aware about physiology of menstruation and 198(66.0%) cases were aware of menstrual hygiene. 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. **Conclusions:** Menstrual abnormalities are the most common gynaecological problems of adolescents. Adolescents should be addressed with dignity. It is need of the time to set up specialized adolescent gynaecological clinics.

**Keywords:** Adolescence, gynaecological problems.

Adolescence is described as that transitional period of life when the carefree child becomes the responsible adult<sup>1</sup>. As per WHO, age group of 11–19 yrs are adolescents. In India, (MOHFW 2012), 22% of population is Adolescent, of these female adolescents comprises 47%. 20 % of total adolescent females get married by 15 years and are already mothers.

Menarche is considered as the central event of female puberty<sup>2</sup>. Menstrual disorders, anaemia, PCOS, UTI, STI are commonly seen in this age group. Vaginal discharge, physiological or pathological is a common complaint in girls.

Pregnancy in teenagers is a problem threatening the ultimate reproductive and child health. These girls often do

not have safe sex and are vulnerable to sexually transmitted diseases.

Adolescents do not present themselves early to the health care delivery systems which don't give open and dignified access to them<sup>3</sup>. Our gynaecology department caters a large adolescent female population. With this background, it becomes necessary and worth to conduct this study to evaluate reproductive health awareness among adolescent girls and find gynaecological problems of the adolescents attending gynaecological OPD and emergency services with the aim to study type of problems, causative factors and different treatment modalities.

Received: 19<sup>th</sup> September 2021, Peer review completed: 2<sup>nd</sup> Febuary 2022, Accepted: 6<sup>th</sup> February 2022.

Kalyankar BV, Kalyankar VY, Gadappa S, Chauhan M. Study on adolescent gynaecological problems. The New Indian Journal of OBGYN. 2023; 10(1): 183-88.

Objectives -

- To study gynaecological problems and their clinical profile in adolescent girls.
- To evaluate treatment modalities of gynaecological problems in adolescent girls.
- To evaluate reproductive health awareness among adolescent girls.

**Materials and methods**

A prospective observational study was done from October 2018 to September 2020 at Govt. medical college, Aurangabad, Maharashtra, India. Data was collected using case proforma. After approval from institutional ethical committee and after taking written valid informed consent, participants were included in the study.

Girls in the age group of 11 to 19 years attending gynaecology OPD or emergency, was included in the study. A detailed history was taken which emphasized on pubertal events such as thelarche, pubarche, pregnancy and menarche. First, the girl was interviewed regarding her problems keeping her privacy and dignity and if girl was feeling shy or was unable to speak out her problems then only her mother was asked for history. Assurance was given.

BMI was calculated. A thorough clinical examination including height, weight, secondary sexual character (by tanner staging), general examination of breast, thyroid was done. Hirsutism was assessed by the Ferriman Gallwey Scale. Cardiovascular system, respiratory, and central nervous system were also assessed.

Presence of nutritional anaemia was determined by Sahli's method. Formula used for calculation of iron deficit was Ganzoni formula; Total iron dose requirement = [actual body weight X (15-actual HB) X 2.4 + 500]. Anaemia treated with oral and/ or injectable iron therapy with folic acid and packed cell blood transfusions in severe anaemia.

Different menstrual disorders were studied with the

0.03 mg ethinyl estradiol + (4<sup>th</sup> generation progesterone i.e. drospirenone 3 mg > 3rd generation progesterone i.e. desogestrol 0.15 mg)], metformin 500 mg OD and anti-androgenic drugs (spironolactone 50 mg OD). Thyroid disorders were treated with lifestyle modification and anti-thyroid drugs (hypothyroidism was treated with thyroxine 75 - 100 ug OD, while hyperthyroidism by carbimazole 0.2-1 mg/kg/day).

Pregnancy was ruled out by urine pregnancy test, USG and when required. Pregnant teenagers were offered MTP/ANC services/delivery services as necessary.

For vaginal infections discharge was collected and wet smear examined under microscope by microbiologist. STI were treated with coloured coded kits (used under treatment by syndromic approach) of STI depending upon the organism detected. Ovarian tumours were detected and treated medically and surgically as per need.

Reproductive health awareness was evaluated using questionnaire. All the information collected was stored in prescribed case proforma. The data was compiled in master chart i.e. in MS-EXCEL sheet and data was analysed.

**Results**

In present study a total of 300 adolescent girls were enrolled who were having gynaecological problems.

According to Kuppuswamy classification, 53.3% of adolescent girls came from class IV background, 14% and 32.7% cases belonged to class III and V respectively. In this study, 215 cases (71.67%) achieved menarche at 14-16 years of age, 28% in 11-13 years and 0.3% in 17-19 years of age. 150(50.0%) cases in study were at tanner stage 5 of breast development. 3.3% were at tanner stage 1, 7.3% at tanner stage 2, 22% at tanner stage 3 and 17.3% were at tanner stage 4 of breast development. Most common gynaecological problem among the cases was menstrual disorders 156 cases (52%), followed by vaginal discharge in 35 cases (11.6%),

**Table 1: Demographic factors of study group**

Age in years (% of population)	11-13 (13.3%)	14-16 (30.7%)	17-19 (56%)	-
Education (% of population)	Primary (12.3%)	Secondary (53.3%)	Higher secondary (34%)	-
BMI (% of population)	Underweight (<19 kg/m <sup>2</sup> ) 26%	Normal (19-25 kg/m <sup>2</sup> ) 56%	Overweight (25-30 kg/m <sup>2</sup> ) 14.6%	Obese(>30 kg/m <sup>2</sup> ) 3.4%

underlying cause. Primary and secondary amenorrhea was ruled out. Hormonal evaluation: (when feasible) - TSH, T3 and T4, FSH/LH, plasma testosterone, serum progesterone (day 21 of cycle). The hormonal tests were done at day 3 of menstrual cycle. Glucose tolerance test was also done. PCOS was ruled out by Rotterdam criteria and treated with lifestyle modification (diet modification with carbohydrate reduced and aerobic exercise) with OCPs [Combination used was

24 cases (8.0%) each came with history of sexual assault and excessive weight gain, 20 cases (6.6%) presented with urinary tract infection, 8 cases (2.6%) and 14 cases (4.7%) presented with ovarian torsion and ovarian tumours respectively and 19(6.3%) cases were of teenage pregnancy.

In present study menstrual disorders were ranged from amenorrhoea to menorrhagia in cases. The most common type of disorder was oligomenorrhoea with 86 cases

(55.2%), followed by menorrhagia with 27 cases (17.3%) and 24 cases (15.4%) of amenorrhoea. Major cause of oligomenorrhea in study group was PCOS 31(36%), followed by excessive weight gain i.e 24(27.9%), 15(17.4%) and 10(11.6%) of cases had thyroid disorder and stress respectively. And 6 (7.1%) cases did not have any associative factors. Hypothyroidism was major cause (78% cases) in thyroid disorder in present study.

**Table 2: Management of PCOS in study group**

Age	No. of cases	Management done	Follow up after 3 months	Inference
11-13 years	6	Lifestyle modification (LM) only	6 cases - weight reduced by 5-7% cycles regularized	All patients in this age group improved without any medical management
14-16 years	12	Lifestyle modification ± OCPs ± metformin ± spironolactone	9 cases - lifestyle modification only 2 cases – LM + OCPs; 1 case – LM+ OCPs + metformin	Only 33.34% patients in this age group required medical management
17-19 years	20	Lifestyle modification± OCPs ± metformin± spironolactone	10 cases - lifestyle modification only; 7 cases - LM+ OCPs; 2 cases – LM + OCPs + metformin; 1 case – LM + OCPs + metformin + spironolactone	50% cases in this group required medical management (M/M)

In 27 cases of menorrhagia, in 21(77.7%) cases puberty menorrhagia was the major associative factor, 03(9.1%) cases had hypothyroidism and PCOS, each. Majority of cases of puberty menorrhagia, 10(47.61%) were moderately anaemic and required anaemia correction in the form of injectable therapy while 8 cases (38.9%) required blood transfusion followed by injectable iron therapy. Injectable iron therapy was given after calculating iron deficit using the formula mentioned in methodology. In remaining 6 cases (22.23%) after treating underlying cause (PCOS and hypothyroidism) menorrhagia resolved.

Out of 23 cases of secondary amenorrhoea, 19 (79.2%) cases reported with teenage pregnancy, 4 (16.7%) cases had PCOS and 1(4.2%) case had primary amenorrhea due to imperforate hymen. 76 (25.3%) cases had mild anaemia, 160(53.3%) cases had moderate anaemia and 08(2.6%) cases had severe anaemia.

Out of 38 PCOS cases, 31(81.6%) cases presented with oligomenorrhea, 3(7.9%) cases with menorrhagia and 4(10.5%) cases with secondary amenorrhea. Cases followed typical clinical pattern of oligomenorrhea mainly. As the age of participants increased, requirement of medical method for PCOS treatment increased (table 2).

Hypothyroidism was treated with thyroxine 75-100 microgram OD, while hyperthyroidism by carbimazole 0.2-1 mg/kg/day. All patients responded to the treatment given. The follow up was kept for 6 months.

20 (39.2%) adolescent girls presented with urinary tract infection and 31(60.7%) cases had reproductive tract infections (RTI). Out of 31 cases of RTI, 10 (32.2%) cases were having *Gardenella Vaginalis* as major cause of RTI

followed by 9 (29.0%) cases of *Neisseria Gonorrhoea*. Out of 19 teenage pregnancies, in 8(42.1%) cases LSCS was done, 3(15.8%) cases had full term normal delivery (FTND) and instrumental delivery each, 4(21.0%) cases had MTP.

In this study, 22 adolescent girls on USG were diagnosed with ovarian mass (benign/ torsion/ malignant). Most common type of ovarian tumour found in the present study was dermoid cyst (7/22), both cases of malignant ovarian

tumours had immature teratoma. Both malignant tumours required definitive management in the form of unilateral salphingo-oophorectomy. Out of 8 cases of ovarian torsion mainly 6 cases (75.0%) required definitive management in the form of oophorectomy (as ovaries were gangrenous and non-conservable) and 2 cases of ovarian torsion were managed with laproscopic detorsion. 7 (58.3%) cases of benign tumours required definitive management with oophorectomy.

Out of 300 cases, 200(66.7%) cases were having awareness of physical signs of puberty. 245(81.7%) cases had knowledge of STD, HIV and its mode of transmission. 200(66.7%) cases were aware about different contraceptive methods. 150(50.0%) cases were aware of physiology of menstruation, and 198(66.0%) cases were having awareness about menstrual hygiene.

### Discussion

In present study group, 56% adolescent girls had normal BMI. Thaker RV et al <sup>4</sup>, G Chandrakala et al<sup>5</sup> and Nulakathati Vani et al <sup>6</sup> reported 49.3%, 74% and 48.45% girls having normal BMI respectively. Whereas Lalitha S, et al <sup>7</sup> found that 69.33% were underweight. Although most of the girls in various studies mentioned above had normal BMI but it is seen that overweight (3.4%) and obesity (14.6%) is an emerging problem in many adolescent girls.

In present study 2.6 % of adolescent girls were severely anaemic and were managed with blood transfusions, 53.3% were moderately anaemic and received injectable iron sucrose therapy and 25.3% were mildly anaemic and were given oral and nutritional iron therapy. Whereas in study Lalitha S et al <sup>7</sup> and Anuradha C et al <sup>8</sup> 8% and 1.60% were

severely anaemic respectively and required blood transfusions, 25.33% and 2.88% were moderately anaemic in respective studies and were given oral and nutritional iron therapy. It is pathetic that blood transfusion was needed to treat severe anaemia in all studies mentioned above. School age girls need to be checked and evaluated for anaemia.

In the present study most common gynaecological problem among the adolescent girls was menstrual disorders (52%). Menstrual disorder as most common gynaecological disorder was also found in studies of Nulakathati Vani et al<sup>6</sup> (59.63%), Hirani G et al<sup>9</sup> (67.5%), Anuradha C et al<sup>8</sup> (73.07%) and Lalitha S et al<sup>7</sup> (60%).

Vaginal discharge (11.6%) was second most common gynaecological problem among the adolescent girls which is similar to studies of Nulakathati Vani et al<sup>6</sup> (9.94%), Hirani G et al<sup>9</sup> (12.2%) and Anuradha C et al<sup>8</sup> (11.2%).

In present study, teenage pregnancy was reported in 6.3% of adolescent girls whereas Lakshmi et al<sup>10</sup> reported 2.52% and Lalitha S et al<sup>7</sup> reported high teenage pregnancy prevalence i.e.10.66%. The range of teenage pregnancy was from 2-10% with our study having 6.3%.

Present study observed 8% adolescent girls having excessive weight gain, whereas 5.76% and 4.0% adolescent girls were noted by Hirani G et al<sup>9</sup> and Anuradha C et al<sup>8</sup> respectively.

In present study, the most common type of menstrual disorder was oligomenorrhoea (55.2%). Studies by A. Sri Lakshmi et al<sup>10</sup>, Lalitha S et al<sup>7</sup> and Nulakathati Vani et al<sup>6</sup> reveals that menorrhagia was present in 55.55%, 33.33% and 16.6% adolescent girls respectively. Anuradha C et al<sup>8</sup>, Hirani G et al<sup>9</sup> and Thaker RV et al<sup>4</sup> reported the most common type of disorder was that of dysmenorrhea i.e 42.0%, 42.5% and 52.9% respectively. Different studies reveal different types of menstrual disorders in adolescents.

Out 24 cases of amenorrhoea in present study, 79.2% cases were having teenage pregnancy. Whereas Lalitha S, et al<sup>7</sup> and Rithvika Walad et al<sup>11</sup> observed 80% and 74% cases of teenage pregnancy respectively. The high rate of teenage pregnancy needs to be addressed by awareness, counselling, contraception and promoting delayed age of marriage.

In present study PCOS was present in 16.7% cases of secondary amenorrhea, whereas Rithvika Walad et al<sup>11</sup>, Hirani G et al<sup>9</sup>, Anuradha C et al<sup>8</sup> and Lalitha S et al<sup>7</sup> found 3%, 4.7%, 4.16 and 8% cases respectively of secondary amenorrhoea due to polycystic ovarian syndrome.

In the present study 39.2% adolescent girls presented with urinary tract infection. Whereas in study by Lalitha S et

al<sup>7</sup>, Sabita Rezwana R et al<sup>12</sup>, Shubha<sup>13</sup> 12%, 6.6%, and 5.5% girls had UTI respectively. The high incidence of UTI in present study could be due to the fact that UTI was suspected on symptoms and clinical features (was not always objectively proved on urine examination). The other studies had confirmed UTI by doing urine examination studies.

In the present study 60.7% adolescent girls had reproductive tract infection, whereas in study by R Ram et al<sup>14</sup>, Lalitha S et al<sup>7</sup> and Emily K<sup>15</sup> 64%, 18.7% and 28% had RTI respectively. RTI is an emerging cause of infection in adolescent due to lack of reproductive health awareness in this age group. In present study out of 31 cases of RTI, 10 (32.2%) cases were having *Gardnerella Vaginalis* as major cause of RTI which is also seen in study by Emily Kerubo et al<sup>15</sup> (18%). Whereas in study done by Rabiya KA et al,<sup>16</sup> Gonorrhoea was found the commonest cause of RTI (23.4%). In study by Anuradha C et al<sup>8</sup> Candidiasis was the most common cause of pathological vaginal discharge among married and Trichomonas vaginitis among unmarried adolescents. Mixed vaginal infections were common in all studies.

In present study, 22 adolescent girls on ultrasonography were diagnosed with ovarian mass (benign/torsion/malignant). 91.4% were reported benign ovarian tumour which is similarly seen in Radhe Akang<sup>17</sup> study (94.5%). In study by Liu H et al<sup>18</sup>, Sridevi T et al<sup>19</sup>, Lalitha S et al<sup>7</sup> and Ruchi Rathore et al<sup>20</sup> 60%, 93.75%, 5.33 % and 65.2% of adolescent girls presented with benign ovarian tumour.

In study by S Seethalakshmi et al<sup>19</sup> (2020) awareness regarding physical signs of puberty was only 39% but in our study it was 66.7%. In study by Seema G et al<sup>21</sup> (2017) STD awareness was 65.75% which was 81.7% in our study, also awareness regarding contraceptive increased from 62.25% to 66.7% in our study. The better awareness was seen in adolescent about physiology of menstruation, hygiene and STDs and contraceptive in our study. We had put a specific questionnaire before adolescents to know awareness on it. This shows importance of need of sexual health education during school age to improve reproductive and sexual health.

### Conclusion

Adolescent gynaecology is an important subspecialized part of gynaecology. Increase in BMI, PCOS, anaemia, reproductive and urinary tract infections, teenage pregnancy, victims of sexual assault are cause of concern in present adolescents. Knowledge about menstruation and menstrual hygiene, reproduction, contraception and availability of

nutritious diet needs to be addressed. Programmes like school health and ARSH need quality implementation. Malignancy needs to be ruled out in ovarian tumours during adolescents. Setting up specialized “Adolescents gynaecological clinics” is the need of the hour considering that adolescents are the citizens and parents of tomorrow.

**Conflict of interest:** None. **Disclaimer:** Nil.

### References

1. Hanson M, Gluckman P. Evolution: Development and timing of puberty. *Trends in Endocrinology & Metabolism*. 2006; 17 (1):7-12.
2. Flug D, Large RH, Proder T. Menstrual patterns in adolescent Swiss girls, a longitudinal study. *Annals of Human biology*. 1984 ; 11 : 495-508.
3. Adolescent Health Committee FOGSI. Adolescent. [Cited Jan 23 2021]; Available from: [https://www.fogsi.org/wp-content/uploads/fogsi-focus/Adolescenc\\_Issue\\_03.pdf](https://www.fogsi.org/wp-content/uploads/fogsi-focus/Adolescenc_Issue_03.pdf)
4. Thaker RV, Madiya AB, Chaudhari HD, Maru JD, Baranda SB. Health profile of adolescent girls visiting obstetrics and gynecology department of tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol*. 2018; 7: 4678-83.
5. Chandrakala G, Patruni M. Study to access gynaecological problems in adolescent girls attending the gynaecology OPD at a private teaching institute, Telangana state, South India. *International Journal of Clinical Obstetrics and Gynaecology*. 2020; 4(2): 221-24.
6. Vani N, Sravani N, Ramya T, Rathinavelu M, Suchitra MJ. Clinical Profile Of Adolescent Girls With Gynaecological Problems In Rural South India. *Int J Pharm Pharm Sci*. 2020; 12(9): 9-12.
7. Lalitha S, Ramalingappa P. Adolescent girl – the gordian knot. *The New Indian Journal of OBGYN*. 2019; 5(2): 131-35.
8. Anuradha C, Indira I. Study of adolescent gynaecological problems and etiological factors in outpatients. *Indian J Obstet Gynecol Res*. 2019; 6(3): 331-36.
9. Hirani G, Hirani M. Prevalence of various gynecological problems in adolescent girls 10-19 years of age attending outpatient Department at tertiary care institute of Bhuj, Kutch, Gujarat, India. *Obs Rev J obstet Gynecol*. 2020; 6(2): 51-56.
10. Sri Lakshmi A, Koushik. Gynecological Problems in Adolescent Girls - A Clinical Study. *International Journal of Advance Scientific Research And Engineering Trends*. 2017; 2(2): 23-5.
11. Walad R, Malpurae P, Sreelatha S. Gynaecological Problems in Adolescent Girls Attending OPD in ESIC Medical College and PGIMSR Bangalore. *Gynaecology and Perinatology*. 2018; 2(5); 356-60.
12. Rahman SR, Ahmed MF, Begum A. Occurrence of Urinary Tract Infection in Adolescent and Adult Women of Shanty Town in Dhaka City, Bangladesh. *Ethiop J Health Sci*. 2014 Apr; 24(2): 145-52.
13. Srivastava S. Analytical study of urinary tract infection in adolescent girls. *Int J Reprod Contracept Obstet Gynecol*. 2018 Apr; 7(4):1385-88.
14. Ram R, Bhattacharya SK, Bhattacharya K, Baur B, Sarkar T, Bhattacharya A, et al. Reproductive tract infection among female adolescents. *Indian Journal of Community Medicine*. 2006; 31(1): 32-3.
15. Kerubo E, Laserson KF, Otecko N, et al. Prevalence of reproductive tract infections and the predictive value of girls' symptom-based reporting: findings from a cross-sectional survey in rural western Kenya. *Sexually Transmitted Infections*. 2016; 92: 251-56.
16. Rabiun KA, Adewunmi AA, Akinlusi FM, et al. Female reproductive tract infections: understandings and care seeking behaviour among women of reproductive age in Lagos, Nigeria. *BMC Women's Health*. 2010; 10(8): 211-9.
17. Akang R. Study on Gynaecological Adolescents. *Dissertation*. 2015.
18. Tanksale S, Bendre K, Niyogi G. Adolescent ovarian tumours: a gynecologist's dilemma. *Int J Reprod Contracept Obstet Gynecol*. 2015; 4: 833-6.
19. Seethalakshmi S, Shridevi M. A study to Assess Knowledge, Attitude, and Practices related to Menstrual Hygiene Management among school going Adolescent girls in Sithyankottai and Sitharevu Govt Higher Secondary Schools, Dindigul District. *International Journal of Humanities and Social Science Invention (IJHSSI)*. 2020; 9(9): 1-7.
20. Rathore R, Katyal A, Shilpi, Nargotra N. Luteoma of pregnancy masquerading as ectopic pregnancy: Lessons learnt. *Saudi J Med Med Sci*. 2017; 5: 281-3.
21. Grover S, Garg N, Rupali, Kaur B. Awareness about reproductive health, contraceptive methods, STDs including HIV/AIDS, and HPV vaccine, among

adolescent girls in district Faridkot in Punjab. International Journal of Reproductive and Contraceptive Obstet Gynecol. 2017; 6: 2003-9.

22. Srivastava S, Chandra M. Study on the knowledge of school girls regarding menstrual and reproductive health and their perceptions about family life education program. Int J Reprod Contracept Obstet Gynecol. 2017; 6: 688-93.
- 

**Bhakti V Kalyankar<sup>1</sup>, Vijay Y Kalyankar<sup>2</sup>, Shrinivas Gadappa<sup>3</sup>, Megha Chauhan<sup>4</sup>**

<sup>1</sup> Professor, Department of Obstetrics and Gynecology, Government medical college, Aurangabad, Maharashtra, India; <sup>2</sup> Associate Professor, Department of Obstetrics and Gynecology, Government medical college, Aurangabad, Maharashtra, India; <sup>3</sup> HOD and Professor, Department of Obstetrics and Gynecology, Government medical college, Aurangabad, Maharashtra, India; <sup>4</sup> Senior Resident, Department of Obstetrics and Gynecology, Government medical college, Aurangabad, Maharashtra, India.