Clinical problems in adolescent girls- A Prospective study

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Abstract

Introduction: Adolescence is a period of physical and psychological change in young girls. It is essential to have knowledge of normal changes occurring in this age-group, and also the demographic pattern of distribution and prevalence of gynaecological problems in order to offer medical services to this group of patients.

Aims and Objective: Aim of the study is to know the gynaecological problems among adolescent girls, and to create awareness of them.

Methodology: It is observational, prospective study, which was conducted in Navodya Medical College & Research Centre, Raichur. Study was conducted from January 2019 to December 2019, Total of 200 adolescent girls of government high school are selected based on the inclusion and exclusion criteria, followed by detailed history, general examinations and investigations were done to evaluate their health.

Results: Most of the girls belong to 17-19 years age group116 (58%) , followed by 14-16 years. 84 (42%). Menstrual abnormalities were present in 59(29.5%), menorrhagia in 24(61.5%) Oligomenorrhea in 15 (38.5%).

Conclusion: Adolescent gynaecology is one of the emerging branch, menstrual disorder   are   the commonest gynecological problems which include as follows dysmenorrhea, menorrhagia, anemia , so it need to be evaluated thoroughly earlier rather then later so to prevent the sever anemia and its consequences, so adolescent health education and group dissection is needed to create awareness and early detection regarding these problems as they will be the citizens and parents in future and future complication can be prevented.

Keywords: Adolescent Dysmenorrhea, Menorrhagia, Anemia

Introduction

Adolescence is the transitional period of life when the carefree child becomes the responsible adult. It is characterize by physical and psychological changes backed by the profound polyglandular endocrinological adjustments. According to WHO, age limit is 10 to 19 years, but the changes may begin before and continue after this age group[1]. Developmental changes rather

than age limits or physical milestones are probably the best markers. During adolescence period, they are prone to develop reproductive health related problems which are generally neglected leading to further disease burden It is essential to ensure universal access to reproductive health care services, including menstrual hygiene and menstrual [2,3] ,Yet adolescent gynaecology is a subspecialized area of Gynaecology, which is still not yet explored. With this study, we tried our best to review the gynaecological problems of the adolescent population

Aims and Objective

Aim of the study is to know the gynaecological problems among adolescent girls and to educate the girls.

Methodology

It is observational, prospective study, which was conducted in Navodaya Medical College Hospital & Research Centre, Raichur. Study was conducted from January 2019 to December 2019, A total of 200 adolescent girls of government high school are selected based on the inclusion and exclusion criteria, followed by detailed history, general examinations and investigations were done to evaluate their health. The data were analyzed statistically at 5% level of significance and p value <0.05 were considered as significant.

Inclusion criteria included adolescent girls aged 13 – 19 years.

Exclusion criteria included girls who were unavailable for data collection during 3 consecutive visits and girls who did not consent for the study.

The study was conducted after taking Ethical community clearance, consent from the government school principal. Counseling was done first , after that proforma were given to the students. After completing

the proforma complete general physical examination was done, then height weight and BMI of the students were noted. Blood was collected for analysis of investigations: Under aseptic conditions, 2 ml of venous blood was collected into a sample bottle containing ethylene diamine tetra acetate and gently mixed to prevent clotting. The sample was transported to CRL laboratory of Navodaya Medical College using vaccine carrier and analyzed using an automated blood analyzer model/medonic.

Results

Table 1: Age distribution of the study population

Factors	Number (N=200) (%)
Age :- 13 – 16 yrs	84 (42%)
17 – 19 yrs	116 (58%)
Education :- 8std	24(12.0%)
9std	35(17.5%)
10std	42(21.0%)
11std	55(27.5%)
12std	44(22.0%)

About 116(58%) were between 17-19 yrs of them 28 (24.2%) had anemia and 84(42%) were between 13-16 yrs of them 22 (26.2 %) had anemia , and P value was not found statistical significant. About 24 (12%) girls were studying in 8std out of which 4 (16.6%) had anemia and 35(17.5%) were studying in 9std of which 12 (34.2%) had anemia. About 42(21%) girls were studying in 10th std of which 16(38.1%) had anemia and 55 (27.5%) girls were studying in 11th class out of them 9(16.4%) had anemia and 44 (22%) in 12th class of which 9 (20.5%) had anemia, P value was not found statistical significant, may be because of small number.

Table 2: Socio – economic status of the study population

Factors	Number of cases (N=200)
Socio – economic status Upper class- I	01(00.5%)
Upper middle class -II	40(20.0%)
Lower middle class-III	55(27.5%)
Upper lower class- IV	78(39.0%)
Lower class – V	26(13.0%)
Type of family Nuclear	130(65.0%)
Joint	47(23.5%)
Extended joint	23(11.5%)

Figure 1: Socio – economic status of the study population
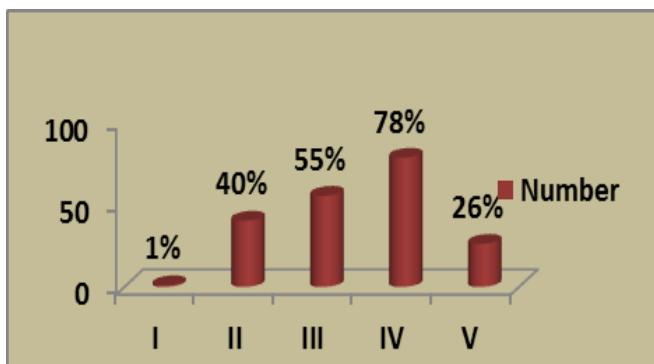
In our study we noted that according to socio-economic status, about 78 (39%) girls belonged to class IV next being 55 (27.5%) belonging to class III, combining class III-IV was only 41.7% were anemia, only class V had 12 i.e., 46.2%, significant P value is found, which indicated high prevalence of anemia is more among Lower class followed by upper lower class. Majority of the girls, 130 (65%) belonged to nuclear families, 47 (23.5%) to joint families and 23 (11.5%) to extended joint families, and P value was not found statistical significant.

Table 3: Comparison of Menstrual factors

Factor's	Number (N=200)	'P' value
Menstrual cycles- normal Abnormal	152 (76%) 48(24%)	0.000
Menstrual abnormalities Present Absent	59(29.5%) 141(70.5%)	0.04
Age at menarche -11-12 13-14 15-16 >16	01(00.5%) 41(20.5%) 104(52.0%) 54(27.0%)	0.878
Dysmenorrhoea	41 (20.5%)	

In our study among 200 cases, 152 (76%) cases had regular cycle of which 13 (8.6%) had anemia (indicating other factors may be responsible for anemia). Among 200 cases , 48 (24%) had irregular cycle of which majority i.e., 37 (77.1%) had anemia , all though the number is more p value is not statically significant. Among 200 cases, About 59 (29.5%) girls had one or the other menstrual abnormalities, of which 39(66.1%) cases had anemia (P value is statically significant).

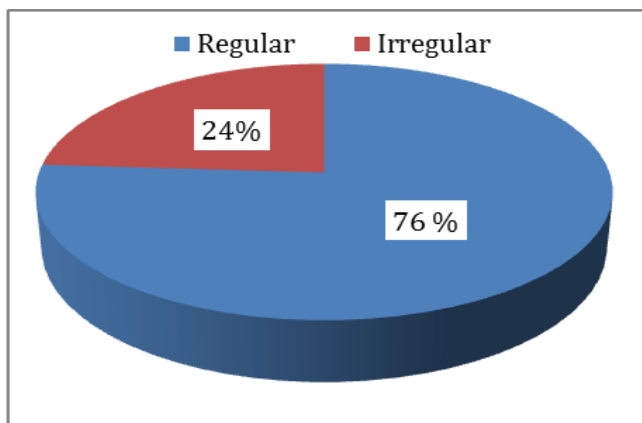Figure 2: Comparison of Menstrual factors

Table 4: Comparison of Menorrhagia

Parameters (N)	Menorrhagia	Oligomenorrhea
Total no of cases(39)	24(61.5%)	15(38.5%)
Mild anemia (N=7)	5(20.8%)	2(13.4%)
Moderate anemia(N=27)	16(66.7%)	11(73.2%)
Severe anemia(N=5)	3(12.5%)	2(13.4%)
P value	0.04	0.32

In our study we noted that 39 cases of menstrual abnormalities of which 24(61.5%) cases had anemia of which majority were of moderate anemia 16 (66.7%) followed by mild anemia 5(20.8%) and sever anemia 3(12.5%) , p value is statically significant (0.04), indicating menorrhea may be cause of anemia. Among 39 cases, of anemia with menstrual abnormalities , 15(38.5%) had oligomenorrhea ,with no statically significant.

Prevalence of anemia: Anemia was present in 50 (25%) of the study participants. Mild anemia (Hb 11 – 11.9 gram percent) was present in 8 (16%) girls, moderate anemia (Hb 7 – 10.9 gram percent) in 37 (74%) girls and severe anemia (Hb < 7 gram percent) in 5 (10%) girls.

Table 5: Prevalence of anemia

| Parameter	Anemia (N = 50) No. (%)	No anemia (N= 150) No. (%)	't' value	'P' value
Haemoglobin (gm%)	9.51±1.484	13.24±0.712	23.685	0.000
MCV (fl)	70.19±5.694	89.12±4.075	25.589	0.000
MCH (pg)	17.79±3.42	32.74±2.20	35.763	0.000
MCHC	24.11±3.08	34.68±1.84	29.226	0.000

Figure 3 : Prevalence of anemia
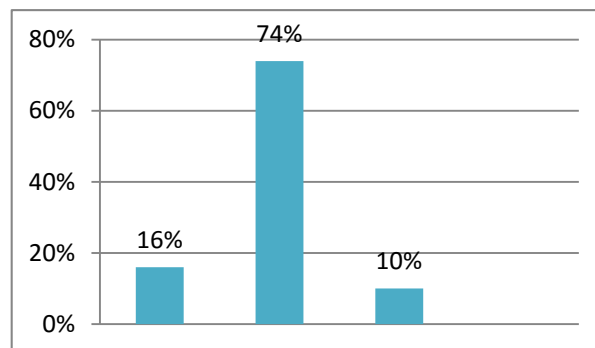
The mean value of hemoglobin levels in anemic cases was 9.51±1.484 and in non-anemic girls was13.24±0.712 comparatively the value was less but p value was not statistically significantly and t value is 23.685. Mean MCV was 70.19±5.694 in anemic girls and in non-anemic girls it was 89.12±4.075 even through the value was less but p value is not statistically significantly, t value is 25.589. Mean MCH was 17.79±3.42 in anemic girls and in non-anemic girls it was 32.74±2.20 comparatively the value was less but p value is not statistically significantly, t value is 35.763. Mean MCHC was24.11±3.08 in anemic girls and in non-anemic girls, 34.68±1.84 , p value is not statistically significantly, t value is 29.226.

Table no. 6 comparison of severity of anemia

Parameters	Total no of cases	Mild anemia	Moderate anemia	Severe anemia
N value	50 cases	8 cases	37 cases	5 cases
Microcytic hypochromic	30 (60%)	3(10%)	22(73.3%)	5(16.7%)
Normocytic normochromic	15 (30%)	3(20%)	12(80%)	_
Macrocytic normochromic	5(10%)	2(40%)	3(60%)	_

Figure 4: Comparison on basis of peripheral smear
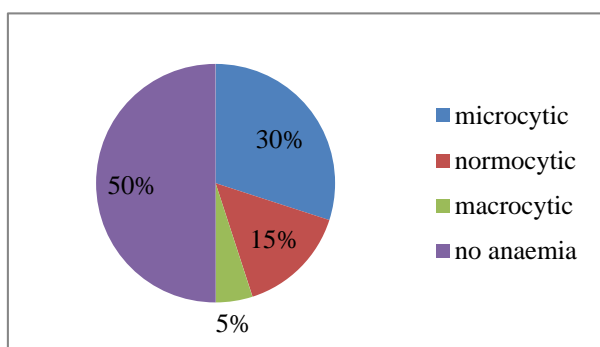
Discussion

Disturbances of menstruation, either actual or perceived, are the commonest presenting complaint in adolescent gynaecology clinic 75% of the new patients. The present study also shows menstrual disorders as commonest adolescent gynaecological problem 74%[1]. About the age of menarche, most of the girls, 41 (20.5%) attained menarche at the age of 13-14 years, 104(52%) attained menarche at 15-16 years of age. About 152 (76%) had normal menstrual cycles and 48 (24%) had abnormal menstrual cycles. About 59 (29.5%) girls had one or the other menstrual abnormalities, while 141 (70.5%) did not have any menstrual abnormalities. Mean age of menarche in the present study was 13.05±0.703 years. Minimum age at menarche was 11 years and maximum age at attainment of menarche was 14 years, while in a study by Melwani V et al[7],43 mean age of menarche was 10.23 years. Menstrual abnormalities were significantly more common in anemic girls, 39 (66.1%) compared to non anemic girls, 20 (33.9%) ($\chi2 = 72.324$, p = 0.000). In a study by Bhagyalaxmi Sidenur, Gowri Shankar[8] 47 it was noted that 35% of the girls had dysmenorrhea. Dysmenorrhea was reported by 9.3% of the girls who were severely thin, 24.1% of the girls having mild anemia and 3.7% with severe anemia. Mean haemoglobin level in the present study was 12.31±1.881 gram percent. Minimum haemoglobin level was 5.4 gram percent and maximum was 16.1 gram percent. Mean haemoglobin level of anemic girls was 9.51±1.484 gram percent, while mean haemoglobin level of non anemic girls was 13.24±0.712 gram percent. There was a statistically significant difference between the mean haemoglobin levels of anemic and non anemic girls (t = 23.685, p = 0.000). The minimum haemoglobin level among anemic girls was 5.4 gram percent and maximum was 11.6 gram percent, while the minimum haemoglobin level among non - anemic girls was 12 gram percent and maximum was 16.10 gram percent. In a study by Abhaya Joglekar et. A [9,10] ,152 the mean hemoglobin level of all the girls was 11.34 ±0.01 gms/dL. The mean haemoglobin level of 113 anemic girls was 6.49±0.3gms/dL and mean Hb of 65 normal girls was 10.49±1.5gms/dL. In a study by Shilpa S. Biradar et al[11],54 the range of haemoglobin among the participants was 5.3- 14.9gms/dl. The mean haemoglobin level among the anaemic girls was 10.9+1.04gms/dl. The mean haemoglobin level among the non-anemic girls was 12.80+.5gms/dl. Mean MCV was 84.39±9.378 fL while minimum was 51 fL and maximum was 99 fL. The mean MCV value among

anemic girls was 70.19±5.694 fL while among non anemic girls it was 89.12±4.075 fL and this difference was statistically significantly (t = 25.589, p = 0.000). Mean MCH was 29.01±6.97 pg, while minimum was 11.1 pg and maximum was 37.4 pg. Mean MCH among anemic girls was 17.79±3.42 pg, while among non anemic girls it was 32.74±2.20 pg. Thus, the mean MCH values were significantly lower among anemic girls compared to non – anemic girls (t = 35.763, p = 0.000). Mean MCHC was 32.04±5.096, while minimum was 18 and maximum was 39. The mean MCHC among anemic girls was 24.11±3.08 while it was 34.68±1.84 among non anemic girls. Thus, the mean MCHC values were significantly lower among anemic girls compared to non anemic girls (t = 29.226, p = 0.000). In a study conducted by Gowswami., et al. 55.5% had menorrhagia, 17.7% had dysmenorrhea. The present study also shows menstrual disorders as commonest adolescent gynaecological problem 74%. Primary dysmenorrhoea [12,13] was presenting complaint in 12 cases. Three cases had problem severe enough to prevent them from going to school. Their sibling and mother also had similar problems, family history of Primary dysmenorrhea11[14]. 22% of girls had menorrhagia, followed by ovarian cyst (18%), (16%) had irregular cycles, primary amenorrhoea (12%), oligo menorrhoea (10%).[15]

Table 7 : comparison with other study

Author's	No. participants	Dysmenorrhgia	Menorrhagia	Anemia incidence
Abhaya joglekar	300	48%	52%	63%
et al (2015)				
Rithvika walad (2018)	200	33.5%	24%	20%
Dr G Chandraala and Manoj patruni	50	18%	22%	24%
Melwani V et al (2018)	98	37%	45%	57.6%
In our study	200	24%	61.5%	25%

Conclusion:

"ADOLESCENT GYNAECOLOGY" is one of the emerging branch, menstrual disorder are the commonest gynecological problems which include as follows dysmenorrhea, menorrhagia, anemia , so it need to be evaluated thoroughly earlier rather then later so to prevent the sever anemia and its consequences, adolescent health education and group dissecation is needed to create awareness and early detection regarding these problems as they will be the citizens and parents in future .

Ethical approval: The study was approved by the Institutional Ethics Committee

Conflict of interest: Authors declare that there is no conflict of interest

Statistical analysis: The data were analyzed statistically at 5% level of significance and p value <0.05 were considered as significant.

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