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ORIGINAL STUDY

Management of Luteal Phase Defect in Adolescent Girls

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ABSTRACT

Objective: To find out the effect of dydrogesterone drug on menstral cycle of adolescent girl.

Study design: A total of 50 adolescent girl (16-19 years) who were suffering from irregular menstruation were recruited for this study from April 2008 to February 2009, at JNM Hospital, Kalyani, West Bengal, India.

Results: Menstrul cycle was found to be regular within 6 months of treatment along with the reduction of endometrial thickness.

Conclusion: Dydrogesterone was found to be safest drug to regularize menstrual cycle of adolescent girl suffering from menstrual irregularity due to luteal phase defect.

Keywords: Adolescent, LPD, Menstrual irregularity, Dydrogesterone.

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INTRODUCTION

Although luteal phase defect (LPD) was found to be a significant cause of some cases of unexplained infertility (3.5%)[2] and recurrent miscarriage (35-50%)[3] but recently due to improvement of clinicoendoultrasonography profile, LPD due to anovulation and dysovulation of ovary caused by an incomplete maturation of hypothalamic-pituitary-gondal axis, was found to be leading cause of menstrual irregularities in adolescant girl. In the past and even now controversies exist about the diagnosis of LPD and the validity of luteal supplementation for 'so-called' inadequate luteal phase, but it is true fact that if we fail to diagnose and treat LPD in adolescent girl in accurate time, it may directly affect her future reproductive health. Hence, prevention and treatment of LPD in adolescent girl is very much significant by advocating suitable progestins without hampering her endocrinal, metabolic and hematological system.

MATERIALS AND METHODS

This study was undertaken at JNM Hospital from April 2008 to February 2009. Fifty adolescent girl, aged 16 to 19 years with a history of irregular menstruation [who were treated previously by micronized progesterone (25 cases) and synthetic progesterone (25 cases) but failed to regularize menstrual cycle] were diagnosed to be suffering from LPD [diagnosed by basal body temperature (BBT), serum progesterone and endometrial thickness (USG)] were selected for this study. Dydrogesterone (10 mg) was advocated BD from day 11 for 14 days for 6 cycles. The aims of the study are (1) to find out the effect of drug on menstruation (2) to see any change on endometrial thickness (3) any change on breast.

OBSERVATIONS

Ninty percent of cases were from age group 18 to 19 years of age (Table 1).

Seventy-eight percent cases had history of menorrhagia as compared to 16% cases oligomenorrhea and 6% cases of polymenorrhea, 22% cases had mystalgia and 5% cases had breast lump (Table 2).

Table 1: Age group (N = 50)

Years	*Percentage*	*Number*
16	2	2
17	3	3
18	21	21
19	24	24

Table 2: Menstrual cycle and breast pathology (N = 50)

Menstrual cycle	*Percentage*	*Number*
Menorrhagia	78	39
Oligomenorrhea	16	8
Polymenorrhea	6	3
Breast		
Mystalgia	22	11
Lump	5	2.5

DIAGNOSIS (N = 50)

Eighty-two percent cases had elevated with discordent BBT (Table 3), might be due to fluctuating serum progesterone level. Eighty-eight percent cases had serum progesterone level less than 10 ng/ml, 7 days prior to menstruation and 82% cases had endometrial thickness more than 12 mm on 10th day of period due to endometrial hyperplasia caused by hyperestrogenemia.

It is interesting to observe that (Table 4) menstrual cycle—was found to be normal in 16% cases within 3 cycles, 20% cases within 4 cycles, 28% cases within 5 cycles and 32% cases within 6 cycles. Only 4% cases had undergone curettage due to failure to respond to treatment.

Endometrial thickness (Table 5) were found to be significantly less than 8 mm in 88% cases, less than 10 mm in 12% cases signifying that presence of unopposed estrogenic effect, mystalgia was found to be nil and no lump were detected on palpation of both breast.

DISCUSSION

Luteal phase defect (LPD) due to anovulation and dysovulation, marked by incomplete maturation of HPG-axis, was found to be leading cause of menstrual irregularities menorrhagia (73%), polymenorrhea (16%) and oligomenorrhea (6%) and mystalgia (16%) in adolescent girl.

In the past and even now controversies exist about the diagnosis of LPD in spite of well-known etiological factors. The accepted diagnostic parameters are (1) 'out of phase' endometrium as revealed on two consecutive premenstrual

Table 3: Changes of temperature, hormone and endometrium

		Percentage	*Number*
BBT	Elevated	18	9
	Elevated with discordent	82	41
Progesterone	<10 ng/ml	88	44
	<12 ng/ml	12	6
Endometrial	>12 mm	82	41
thickness (USG)	<10 mm	18	9

Table 4: Changes in menstrual cycle (N = 50)

Menstrual cycle		*Percentage*	*Number*
Normal cycle	<3 cycle	16	8
	<4 cycle	20	10
	<5 cycle	28	14
	<6 cycle	32	16
Curettage		4	2

Table 5: Changes on BBT, endometrial thickness, breast pathology (N = 50)

		Percentage	*Number*
BBT	Biphasic	98	49
	Discordent	2	1
Endometrial thickness (USG)			
	<8 mm	88	44
	<10 mm	12	6
Breast pathology			
	Mystalgia	Nil	
	Lump	Nil	

endometrial biopsies,[1] (2) low midluteal progesterone levels, (3) BBT charts may also be used as a screening procedure to identify inadequate luteal phase.

BBT should be correctly recorded and judiciously interpreted. Biphasic BBT was seen in an adequate luteal phase due to high rise of progesterone level. Indeed if BBT is elevated with (82%) or without discordant (18%), LPD is suspected where luteal cells cannot produce adequate amount of progesterone throughout luteal phase possibly because of inadequate luteinization of the granulosa cells at the preovulatory period. Serum progesterone in the luteal phase has been suggested as a criterion for evaluating the adequacy or deficiency of luteal phase if the level of serum progesterone is less than 10 to 12 ng/ml 1 week prior to menstruation, luteal phase deficiency is suspected as observed in the present series where 88% cases had less than 10 ng/ml and 12% cases had less than 12 ng/ml of serum progesterone level. Endometrial biopsy has been accepted as a gold standard for diagnosis of LPD. Histological evidence of 'out of phase' endometrium of more than 5 days rather than 2 days is considered, the diagnosis of LPD could be more convincingly established on the basis of endometrial histology. However, in the present series endometrial biopsy (4%) by curettage was undertaken for endometral pathology, otherwise the USG was advocated to study endometrial thickness which was found to be more than 12 mm (82%) and less than 10 mm (18%) cases.

Although progestins (micronized and progesterone derivatives) and synthetic progestins were used for menstrual irregularities. Synthetic progestins are preferably avoided because of lowering the endogenous progesterone action by luteolysis and completely bind to the progesterone receptors, consequently the endogenous progesterone does not find any action on the progesterone receptors leading to further aggravation of progesterone deficiency. Micronized progesterone although good drug, but is better to be avoided on adolescent girl because of short-acting, sedative and less decidualization of endometrium. Therefore, dydrogesterone was selected in this study for the following reasons (Abu-Musa et al, 1998):[4]

1. Free from estrogenic, androgenic and anabolic effects
2. No effect on body weight, BP, clotting factors.
3. No effect on cholesterol, VLDL, LDL, HDL, triglycerides.
4. Prevents hypertension, nostalgia, bloatedness, irritability.
5. No effect on adrenal and liver functions.
6. Decidualization of endometriun—10 to 15 times potent, with glandular stromal synchrony.

Dydrogesterone (10 mg) was advocated BD from day 11 for 14 days for 6 cycles. It is observed and interesting to note that menstrual cycles were found to be normal in 16% cases within 3 cycles, 20% cases within 4 cycles, 28% cases within 5 cycles, 32% cases within 6 cycles. Endometrial thickness was found to be significantly reduced as it is observed that 88% case had <8 mm thickness and 12% cases had <10 mm thickness. Mystalgia was found to be reduce significantly.

CONCLUSION

Dydrogesterone, as compared to micronized and synthetic progesterone, was found to be the safest drug to treat luteal phase defect of adolescent girl. This regime not only regularized the menstrual cycle but also found to have no side-effects to endocrinal, metabolic and hematological system of adolescent girl.

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