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Menstrual Adjustment Administering Hormonal Agents: A Survey of Iranian Pilgrim Women During Long-Term Travel

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Abstract

Background: Women's activity in many social and religious events necessitates them to have their menstruation suppressed, including in yearly Hajj rites for Muslim women. According to the Islamic religious set-ups, Muslim women must be physically and morally clean during the Hajj rites in Mecca. In this research, the efficiency and side effects of extended consumption of hormonal agents in Iranian women during the Hajj rites in Mecca were examined.
Methods: The retrospective cross-sectional study involved a sum of 212 participants of pilgrim women recruited from 30 Sep. to 4 Nov. 2013, already prescribed with different types of hormonal agents for 35 - 36 days. Thereafter, they were assessed by questionnaires for the sake of success and side effects throughout the approach.
Results: Out of 212 subjects, 161 (75.9%) had experienced menstrual delay during Hajj rites with no spotting. Women taking combined oral contraceptives within the first half of their menstrual cycle had a significant postponement of menstrual bleeding.
Conclusions: Majority of the pilgrim women who completed the Hajj rites thoroughly with no spotting were satisfied with the extended consumption of hormonal agents.

Keywords: Menstruation, Hormonal Oral Contraceptives, Muslim Women

1. Background

Over the past 50 years, combined oral contraceptives (COC) have been broadly introduced and administered as contraceptive agents (1). Many women are consentaneous with these pills, not only for the contraception; but also, for the decreased dysmenorrhea, hemorrhage, and irregular uterine bleeding (2) while others have discontinued the consumption of COCs due to the concurrence of certain side effects including nausea, vomiting, spotting, headaches, breast tenderness, and bloating (3). Nonetheless, there are certain occasions in a women's life where cessation of menses is necessary to accommodate major life events such as athletic activities, wedding ceremonies, vacations, job assignments, etc.

Moreover, in a study by Christopher and his colleague, it was shown that the issues of menstruation decreased physical readiness of female members of the military for a mission of power deployment (4).

Menstrual bleeding is especially unfavorable for Muslim women during the yearly pilgrimage rites in Mecca and on some occasions such as fasting in the holy month of Ramadan (the 9th month of the Islamic lunar calendar, requiring a variable 13 - 18 hours of fast daily and also prays, according to Islamic Republic of Iran timing). Therefore, suppression of menses is desirable/ favorable. Thus far, the impact of menstrual suppression has been studied in several countries for various reasons (5, 6).

This study was conducted on Iranian women during pilgrimage and Hajj rites in Mecca over the duration of 35/36 days in order to assess the impact and outcome of hormonal agents in delaying menstrual cycle.

2. Methods

With collaboration of the Iranian Hajj organization, this retrospective cross-sectional study was conducted on a sum of 500 Iranian pilgrim women who had already participated in the Hajj rite during Sep. to Nov. 2013 in Mecca. The aim of this study was to determine which type of hormonal agents and which phase of the menstrual cycle is the most successful for delaying menstrual bleeding in women in long-term travels.

The inclusion criteria included age (15 - 52-year-old healthy women), lack of consumption of drugs that influence plasma steroid level, and administration of hormonal agents for two continuous menstrual cycles. Out of 500 women, 288 were excluded because of pregnancy, menopause, mechanical contraceptive agents such as IUD, and previous hysterectomy. Finally, a sum of 212 pilgrim women who had taken hormonal agents for complete menstrual suppression of 35 - 36 days of pilgrimage during Hajj rite in Mecca was chosen upon written informed consent. They were further assessed using a self-designed questionnaire to determine the success rate of the hormonal agent to suppress the menstruation and the possible side-effects. They were prescribed by their registered physician for different types of hormonal agents such as low dose Combined oral contraceptives (COC) containing 30 μg Ethinyl Estradiol and 150 μg Levonorgestrel (LD), Yasmin (30 μg Ethinyl Estradiol and 3 mg Drospirenone), Medroxy Progesterone Acetate 10 mg, Gonadotropin-releasing hormone (GnRH) agonist 3.75 mg muscular injection 3 doses every 4 weeks (2 doses injected in Iran and one injected in Mecca), and high dose COC containing 50 μg Ethinyl Estradiol with 150 μg Levonorgestrel (HD).

Phone-call follow-ups were done after returning from Mecca by our colleague. Demographic data, the pattern of the menstrual cycle, type of contraception, method of administering hormonal agents, daily assessments of bleeding, headache, dizziness, pelvic pain, nausea, vomiting, breast discomfort, changes in mood, abdominal bloating, and number of pills taken were recorded.

2.1. Statistical Analyses

The gathered data were analyzed by SPSS software, version 19 (IBM SPSS, Armonk, NY, USA). Mean value of quantitative variables such as age, number of pills and frequency of qualitative data including spotting, vaginal bleeding, and drug side effects were calculated. We used Spearman's correlation coefficient test to calculate the correlation of quantitative variables. ANOVA, Mann Whitney, and t-tests were implemented to compare the quantitative variables while qualitative values were analyzed using Chi-square test. Fisher's test was performed when required with a significant P value of 0.05.

2.2. Ethical Considerations

This study was approved by the research committee of Taleghani hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

3. Results

In this cross-sectional study, we enrolled 500 non-menopausal female pilgrims. A total of 212 women declared that they used hormonal agents to postpone their menstrual period. The mean age of study women was 41.1 $\pm$ 5.9 years (range 25 - 51 years).

Out of 212 women who were given hormonal agents, 161 (75.9%) had thoroughly suppressed menstrual bleeding during the Hajj rite in Mecca without any spots. Among which 133 (82.6%) women were on COC (LD), 12 (7.5%) were on Yasmin, 2 (1.2%) were on Medroxy Progesterone Acetate, 4 (2.5%) were on COC (HD), and 10 (6.2%) were on GnRH-agonist. The success rate of each hormonal agent to suppress the menstruation is presented in Figure 1.

Demographic and clinical data of the participants as divided by the type of hormonal agent are presented in Table 1.

According to these data, mean age of the women with success in delaying menstrual cycle was significantly less than the mean age of the unsuccessful women (40.5 vs. 42.8) (Table 1).

Consumption of COC pills in the first half of the cycle led to a higher success rate (P = 0.0001). The previous history of gynecologic diseases such as uterine myoma was significantly associated with a lower rate of success. There was no significant association between the duration of the pilgrimage rites, the number of used COC pills, regularity of the menstrual cycle, and the type of the hormonal agents with the postponement of the menstrual cycle. Side effects of the used agents such as nausea, vomiting, and abdominal bloating were significantly lower in the successful group (P < 0.05) (Table 2).

4. Discussion

Numerous studies have demonstrated that bleeding days are fewer in women who have taken hormonal agents for prolonged durations (continuous group) than in women who have taken hormonal agents for the standard 21-day duration (standard/cyclic group) since the late 1970s.

Most of the women who used long cyclic hormonal pills were content with this regimen due to the improved quality of their lives (7-15) (16-27), which nowadays is mandatory in all aspects of life and medicine. Combined oral contraceptives, if taken continuously, relieve menstrual symptoms efficiently (13, 21, 23, 26). Miller and Hughes reported that bleeding days are fewer in continuous COC regimen in comparison with standard groups (28); while, in our study, pilgrim women claimed no spotting throughout pilgrimage as bleeding is unacceptable by

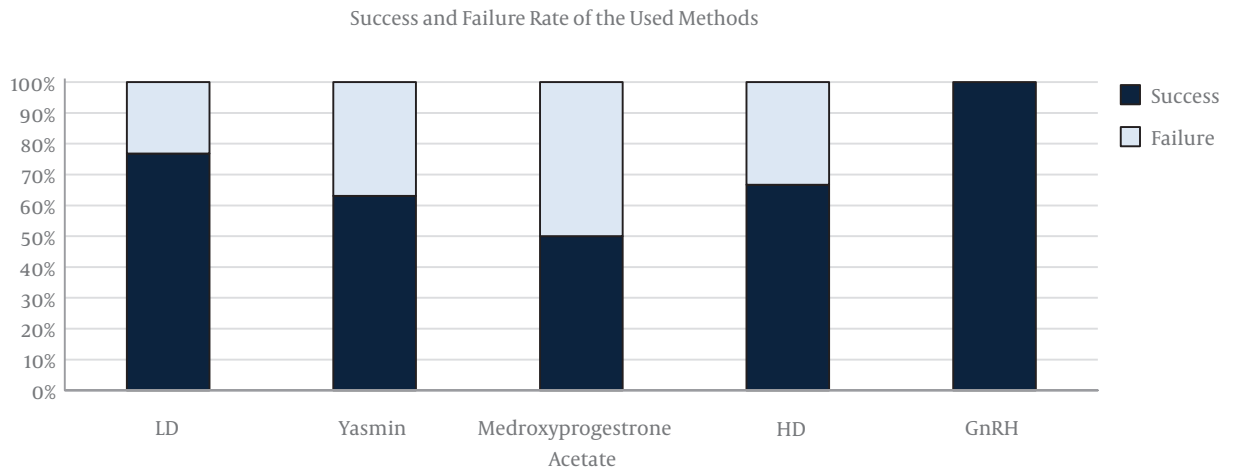

Figure 1. Success and Failure Rates of the Used Hormonal Agents to Postpone the Menstrual Bleeding in Iranian Hajj Pilgrims, 2013

Table 1. Demographic and Clinical Characteristics Based on Success in Delay of Menstrual Bleeding in Iranian Hajj Pilgrims 2013[a]

		Success	Failure	Total	P Value
Mean age, (year)		40.6 ± 5.6	42.8 ± 6.4	41.06 ± 5.9	0.014
Duration of pilgrimage rite, (day)		33.6 ± 1.9	33.03 ± 1.9	33.4 ± 1.9	0.089
Number of pills taken		42.3 ± 10.4	44.9 ± 18.8	42.8 ± 13.2	0.858
Number of days administered		42.1 ± 10.5	39.06 ± 12.7	41.3 ± 11.1	0.007
Menstrual cycle	Regular	145 (90.1)	47 (92.2)	269 (100)	0.656
	Irregular	16 (1.9)	4 (7.8)	16 (100)	
Pill type	LD	133 (82.6)	40 (78.4)	173 (81.6)	0.379
	Yasmin	12 (7.5)	7 (13.7)	19 (9)	
	Medroxy progesterone acetate	2 (1.2)	2 (3.9)	4 (9.1)	
	HD	4 (2.5)	2 (3.9)	6 (2.8)	
	GnRH	10 (6.2)	0 (0)	10 (4.7)	
History of gynecologic disease (infections myoma)	Yes	14 (8.7)	0 (0)	14 (6.6)	0.029
	No	147 (91.3)	51 (100)	198 (93.4)	
Administration of pills	First half of menstrual cycle	137 (85.6)	26 (51)	163 (77.3)	0.0001
	Second half of menstrual cycle	23 (14.4)	25 (49)	48 (22.7)	

[a] Values are expressed as mean ± SD or No. (%).

the pilgrim women because it would interfere with their religious rites. According to the study conducted in 1977 by Loudan and colleagues on 196 women who were administered oral contraceptive pills (50 μg Ethinyl Estradiol and 2.5 mg Lynestrenol) for continuous 84 days, the postponement of menstrual cycle, reduced. The frequency of menses and premenstrual syndrome were successful in 82% of the women (20). On the contrary, another study by Anderson FD and colleagues in 2003 on 682 women on low-dose of oral contraceptive pills (30 μg Ethinyl Estradiol and 150 μg (Levonorgestrel) for three consecutive months showed the occurrence of normal menstrual cycle on the 28th day (15). Based on another study, persistent consumption of oral contraceptives over a period of three and ten months was reported to be effective in induction of amenorrhea in 68% and 88% of women, respectively (19). However administration of low-dose oral contraceptive pills was shown to render effective results in 76.8% of women

Table 2. Reported Side Effects in Success and Failure Groups for Postponement of Menstrual Bleeding in Iranian Hajj Pilgrims, 2013[a]

		Success	Failure	Total	P Value
Nausea	Yes	40 (25)	23 (45.1)	63 (29.9)	0.006
	No	120 (74)	28 (54.9)	148 (70.1)	
Vomiting	Yes	0 (0)	4 (7.8)	4 (1.9)	0.0001
	No	160 (100)	47 (92.2)	47 (92.2)	
Headache	Yes	8 (5)	2 (3.9)	10 (4.7)	0.752
	No	152 (95)	49 (96.1)	201 (95.3)	
Dizziness	Yes	23 (14.4)	13 (25.5)	36 (17.1)	0.066
	No	137 (85.6)	38 (74.5)	175 (82.9)	
Breast tenderness	Yes	8 (5)	2 (3.9)	10 (4.7)	0.752
	No	152 (95)	49 (97.1)	201 (95.3)	
Flatulence	Yes	15 (9.4)	12 (23.5)	27 (12.8)	0.008
	No	145 (90.6)	39 (76.5)	184 (87.2)	
Mood change	Yes	21 (13.3)	10 (19.6)	31 (14.7)	0.255
	No	139 (86.9)	41 (80.4)	180 (85.3)	

[a]Values are expressed as No. (%).

in our study attending Hajj rites. Nevertheless, the influence of COCs is more significant when started in the first half of the menstrual cycle (Table 1). According to our investigation, administration of GnRH-agonist was the most effective approach to postpone the menstruation. However, due to the small number of women who used GnRH-agonist among our study group, a larger study may be required to confirm the result on the efficacy of this drug. Until date, there is no other study about the efficiency of this agent in delaying menstrual cycle during a pilgrimage in Iranian women.

Side effects of the studied hormonal agents were minimal according to our report that is correspondent with previous studies (8, 12, 29). No major side effect of COCs such as stroke or deep vein thrombosis was reported. Nausea, vomiting, and flatulence were the most significant side-effects related to failed menstrual suppression, most probably because of suboptimal absorption of the oral hormonal agent resulting in a low serum level.

4.1. Conclusions

The Iranian pilgrim women wish to have sustained suppression of their menses in order to pray and perform pilgrimage during Hajj in Mecca. The present study revealed that extended hormonal regimens were noticeably effective in women during a pilgrimage in Mecca especially if administered in the first half of the menstrual cycle.

Footnotes

Conflict of Interest: Authors declare no conflict of interest.

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