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USAGE OF HORMONAL AGENTS FOR THE POSTPONEMENT OF MENSTRUATION IN MEDICAL UNDERGRADUATES

[1]Jeel Shah, [2]*Dr. Darshan J. Dave, [3]Abhisha Shah and [4]Jainal Shah

[1]Intern Doctor, GMERS Medical College and General Hospital, Gandhinagar- 382016.

[2]Professor and Head, Dept. of Pharmacology, GMERS Medical College, Opposite Pathikashram, Sector-12, Gandhinagar-382016, Gujarat.

[3,4]Intern Doctor, GMERS Medical College and General Hospital, Gandhinagar- 382016.

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***Corresponding Author**
Dr. Darshan J. Dave
Professor & Head in Pharmacology, GMERS Medical College and General Hospital, Opposite Pathikashram, Sector-12, Gandhinagar- 382016.

ABSTRACT

Background: Even though menstruation is a physiological monthly cyclic discharge, which doesn't hamper day to day function but sometimes causes significant concern. Especially in countries like India, menstruation may interfere with the attainment of certain social events. Present study was planned to identify the perception, usage, knowledge and adverse drug reaction of various hormonal agents for the postponement of menstruation among medical undergraduates vis-à-vis interns. **Methodology:** Study was conducted through predesigned and approved structured questionnaire after approval of institutional ethics committee. After considering the changes in the pilot study, a total 19 multiple choice questions and open ended type regarding the knowledge, usage, adverse events and satisfaction rate regarding the use of hormonal agents for the postponement of menstruation were asked through google form. Total of 67 first year and 27 interns were selected for the study. Results were analyzed in numbers and percentages. **Results:** Around 49% of first year students used hormonal agents for postponement of menstruation with 51.51% for only one occasion. For interns the numbers were at around 55.55% and 40% respectively. Allopathic doctors were ranked first regarding the source of information about hormonal agents for both 1st year students (23%) and interns (68%). Despite belonging to Schedule H drug class, more than 40% of study participants were able to acquire hormonal agents without prescription. Knowledge about preparation of hormonal agents is very low with only 07% first year students, with

significant improvement in interns (48%). The rate of adverse drug reactions due to usage of hormonal agents was very low (less than 20%) during usage and nil after stoppage of the agents. **Discussion and Conclusion:** Oral Contraceptive pills and Norethisterone were the most commonly used agents followed by Depot Medroxy Progesterone Acetate. Sizable number of both first year as well as interns were used hormonal agents for the postponement of menstruation. Higher proportion of usage in interns with efficacy and satisfaction were observed which could be due to their teaching learning in MBBS curriculum. Over the counter usage despite of schedule H drug is a major concern especially for first year MBBS students.

KEYWORDS: Postponement of menstruation Hormonal agents OC Pills Satisfaction.

INTRODUCTION

Menstruation is characterized by monthly cyclic discharge of blood, mucous and cellular debris from the uterine endometrium. Generally, this cyclical (28-30 days) monthly process is regular and predictable right from menarche until menopause.[1]

Menstruation is considered to be vital part of women's life. Even if it has been taught from very early days regarding the menstruation by various sources, but still because of socio-cultural reasons as well as for personal preferences, some women try to postpone it. Certain physical discomfort in terms of abdominal cramps and discomfort is bound to occur during menstruation in all the women. The impact of monthly menstruation may range from a minor inconvenience for some women to a major health concern for those who suffer from menstrual disorders that are aggravated during the menstrual cycle.[2] Problems related to menstruation sometimes prevent women to attend certain social events due to religious factors. A woman may have many reasons to control the day of her period. She may not want her monthly cycle to interfere with her wedding or vacation or another important event. Female engaged in sports especially female athletes may also want to avoid having their monthly cycle during a performance or competition. One of the important factors to control the date of menstruation is the socio-religious rituals and beliefs.[3-6] At the period of menstruation the girls are not allowed to do prayers and are not allowed to go to temple and religious function. So, because of these reasons, most of the girls postpone their menstruation for the short time.

Many hormonal agents are used for postponement of menstruation. Contraceptive agents are approved to control the date of menstruation.[7] These pills contain combination of oestrogen and progesterone. Progestins can be used to prolong the luteal phase of the menstrual cycle and thus to postpone the onset of menstruation. Progesterone has an inhibitory effect on the secretion of gonadotropins in the anterior lobe of the pituitary. Norethisterone is approved for short term use of postponement of menstruation.[8,9] Their success rate for the postponement of menstruation is generally good but variable. On stoppage of this agent, withdrawal bleeding can occur. Medical students have been taught regarding the physiology of menstruation, role of hormonal agents, and detailed pharmacology of hormonal agents from first MBBS to final MBBS. Present study was planned to identify the perception and usage of various hormonal agent for the postponement of menstruation among medical undergraduates. Another aim of the study was to evaluate the change in perception and usage of hormonal agents for the postponement of menstruation because of these teaching learning processes during the tenure of MBBS. This research aimed to identify the pharmacological agents (along with their dosage regimen) used for the postponement of menstruation, identify the occurrence of adverse drug reactions associated with the use of OC pills for the postponement of menstruation and identify the effect of teaching-learning of hormonal agents for the use of postponement of menstruation on the perception and practice for their usage.

METHODS

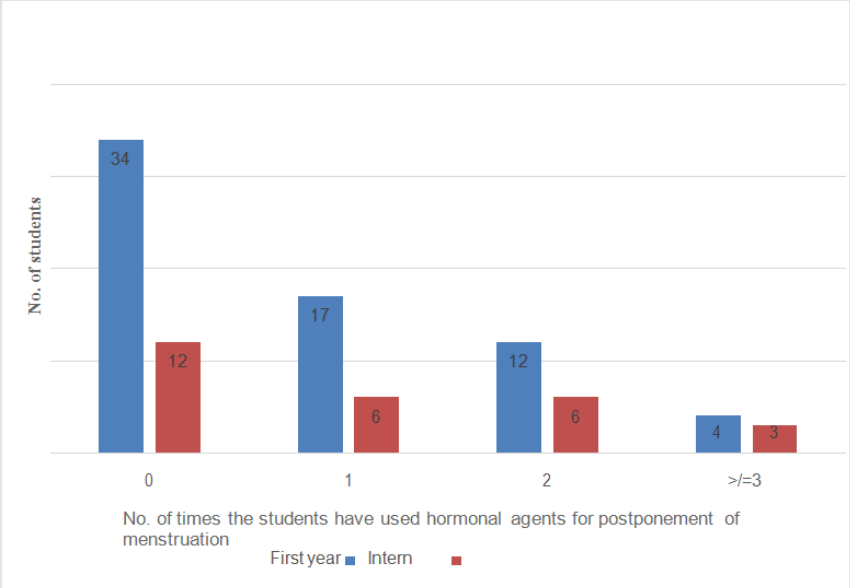
Questionnaire based study was carried out with the prior permission of Central Research Committee and Institutional Ethics Committee (Protocol number: 03/2019) (IC Number: GMERS/MCG/IEC/08/2019) Predesigned structured questionnaire validated by two internal and two external subjects experts was used as a research tool and it was prepared in a google form. A pilot study was carried out and the necessary changes to the questionnaire were made. The inclusion criteria for selection of participants were based on the year of study they were in i.e. First year female MBBS students and female Interns. Exclusion criteria included all the students who didn’t want to give the consent for the study.

The students were given a time limit of 30 minutes to fill the questionnaire. First year students were given the questionnaire in the first week of their admission into MBBS. Interns were given the questionnaire after beginning of their internship. The data was

then entered into MS Excel and the frequency was calculated using SPSS software. Chi-square test was applied by using MedCalc software to observe perception and usage of various hormonal agents for the postponement of menstruation.

RESULTS

A total of 67 first year students and 27 interns were selected for the study.



Graph 1: Frequency of usage of hormonal agents for postponement of menstruation.

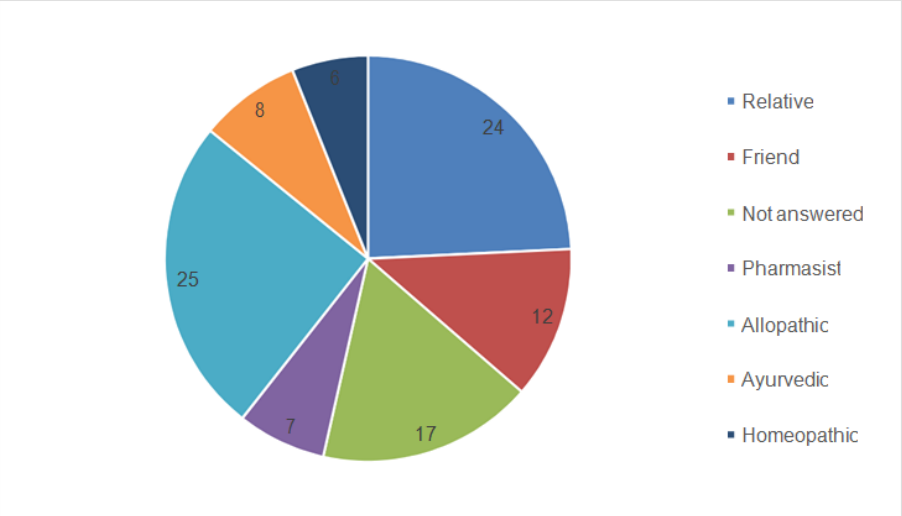
Graph 1 indicates no usage of hormonal agents for postponement of menstruation amongst 34 first year students and 12 interns, once amongst 17 first year students and 06 interns, twice amongst 12 first year students and 06 interns and thrice or more amongst 04 first year students and 03 interns.

Table 1: Duration of consumption of hormonal agents on one particular occasion.

No. of days	First year students (%)*		Interns (%)*	
	Max. duration	Min. duration	Max. duration	Min. duration
1	08 (24.24%)	12 (36.36%)	01 (6.67%)	02 (13.33%)
2	03 (9.1%)	02 (6.06%)	01 (6.67%)	04 (26.67%)
3	05 (15.15%)	05 (15.15%)	03 (20%)	05 (33.33%)
4	02 (6.06%)	0	0	0
5	04 (12.12%)	03 (9.09%)	06 (40%)	01 (6.67%)
6	0	0	1 (6.67%)	0
7	01 (3.03%)	01 (3.03%)	0	0
8	0	0	01 (6.67%)	0
10	01 (3.03%)	0	0	0
20	0	0	01 (6.67%)	01 (6.67%)
21	1 (3.03%)	0	0	0

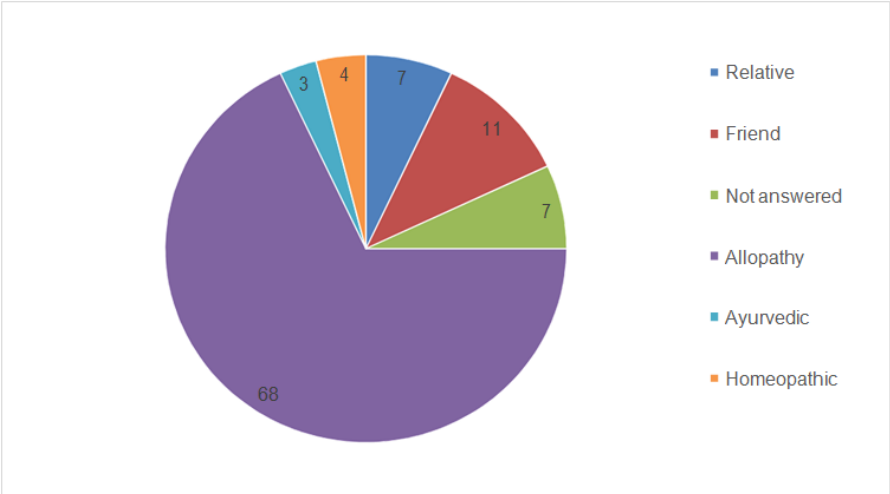
25	0	01 (3.03%)	0	0
29	01 (3.03%)	01 (3.03%)	0	0
38	0	01 (3.03%)	0	0
45	01 (3.03%)	0	0	0
60	01 (3.03%)	0	0	0
Not answered	05 (15.15%)	07 (21.21%)	01 (6.67%)	02 (13.33%)

* Percentage values include only valid entries.



Graph 2(a): Source of information regarding hormonal agents in First year students.

Graph 2(a) indicates 24% students received information through relatives, 12% through a friend, 17% did not answer, 07% through Pharmacist, 25% through allopathic doctor, 08% through Ayurvedic doctors and 06% through Homeopathic doctor.

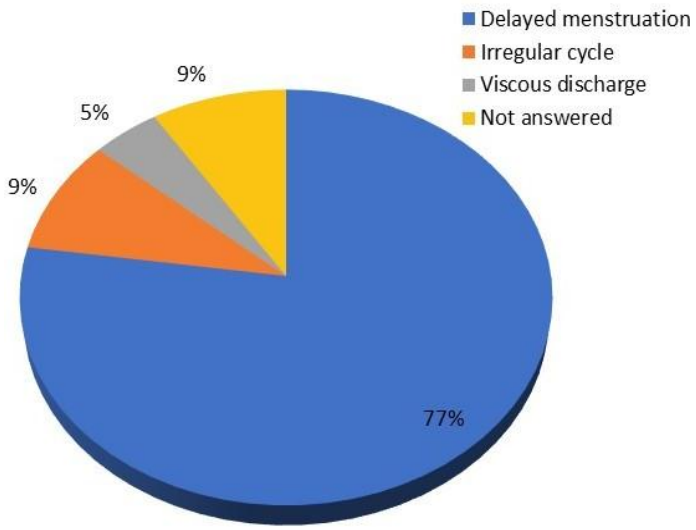


Graph 2(b): Source of information regarding hormonal agents in interns.

Graph 2(b) indicates 07% interns received information through relatives, 11% through a friend, 07% did not answer, 68% through allopathic doctor, 03% through Ayurvedic doctors and 04% through Homeopathic doctor.

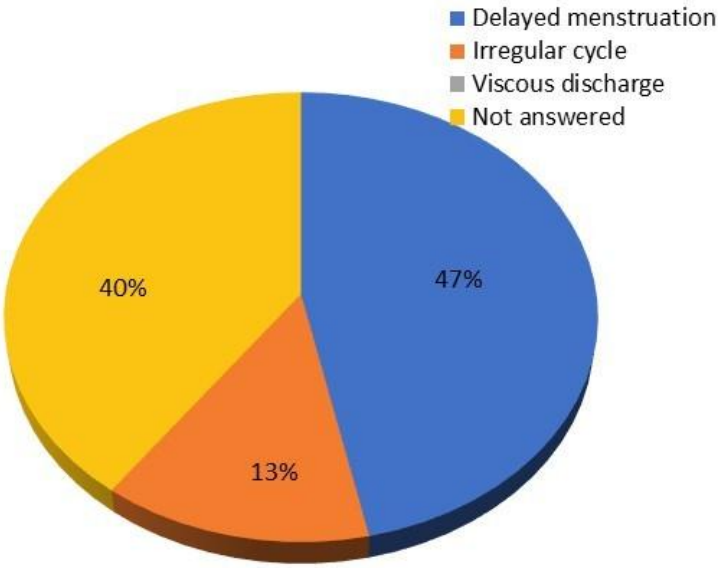
Seventeen out of 33 (51.51%) first year students purchased hormonal agents with prescription while 09 out of 15 (60%) interns purchased hormonal agents with prescription. Rest of the participants purchased hormonal agents without prescription. This question was invalid for 34 first year students and 12 interns as they didn't take hormonal agents. Only 05 out of 67 (07.46%) first year students knew about the preparation of hormonal agents whereas 13 out of 27 (48.14%) interns knew about the preparation of hormonal agents. Chi square test result revealed that the relation between knowledge about preparation of hormonal agents and whether the student was in first year or an intern was significant.

Twenty two out of 33 (66.67%) first year students who consumed hormonal agents experienced a change in their menstrual cycle after consumption of hormonal agents. All 15 (100%) interns who consumed hormonal agents experienced a change in their menstrual cycle after consumption of hormonal agents.



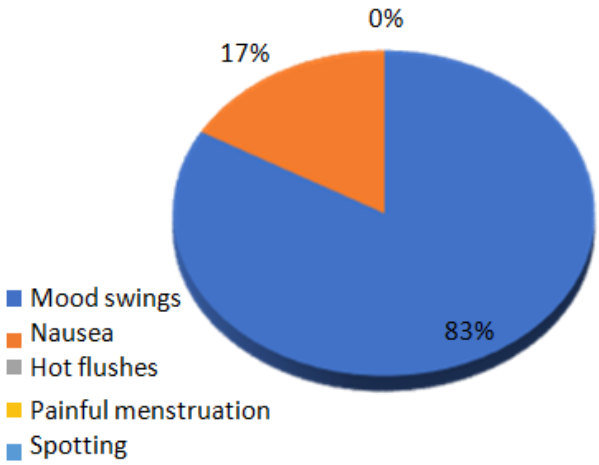
Graph 3(a): Change in menstruation after consumption of hormonal agents in first year students.

Graph 3(a) indicates 77% had delayed menstruation after consumption of the hormonal agents, 09% had irregular cycle, 05% had viscous discharge, 09% did not answer.



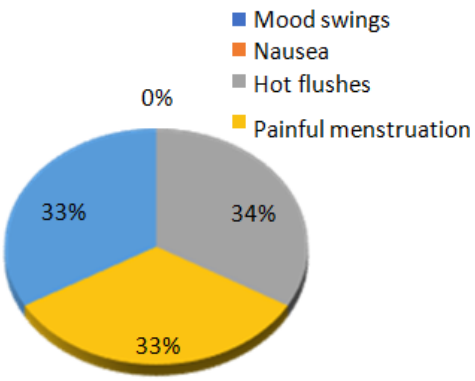
Graph 3(b): Change in menstruation after consumption of hormonal agents in interns.

Graph 3(b) indicates 47% interns had delayed menstruation after consumption of the hormonal agents, 13% had irregular cycle while 40% did not answer. Less than 20% of both first year students (06 out of 33) and interns (03 out of 15) experienced adverse drug reaction on consumption of hormonal agents.



Graph 4(a): Adverse drug reactions with usage of hormonal agents in first year students.

Graph 4(a): Indicates 83% mood swings and 17% nausea as the type of adverse drug reactions in first year students.



Graph 4(b): Adverse drug reactions observed with usage of hormonal agents in interns.

Graph 4(b): Indicates 33% mood swings and 34% hot flushes, 33% painful menstruation as the type of adverse drug reactions in interns.

ADRs were seen in only 02 first year students and only 01 intern after the stoppage of drug. Most common action taken after occurrence of adverse reaction was consulting a doctor followed by stopping the drug which were similar in both the groups.

Fulfilment of purpose of hormonal agent was more in Interns (14 out of 15 i.e. 93.33%) than in first year students (22 of 33 i.e. 66.67%). Around one third of students of both the groups would use hormonal agents for postponement of menstruation in the future. The rest were either not willing (around 40%) or unsure about the use of hormonal agents for postponement of menstruation. Willingness to advice friends and relatives was more in interns (40.47% answered yes) than in first year students (26.8% answered yes). The rest were either not willing or were undecided.

Table 2: Satisfaction with usage of hormonal agents for postponement of menstruation.

Overall satisfaction	No. of first year students(percentage*)	No. of interns (percentage*)
Very good	04 (12%)	02 (13%)
Good	12 (35%)	06 (40%)
Average	11 (32%)	05 (34%)
Poor	03 (9%)	0
Very poor	04 (12%)	0
Not answered	0	02 (13%)
Not applicable	34	12

* Percentage values include only valid entries.

DISCUSSION

Around 49% of first year students used hormonal agents for postponement of menstruation. Out of those 51.51% used the hormonal agents on only one occasion. For interns the numbers were at around 55.55% and 40% respectively. Allopathic doctors were the biggest source of information about hormonal agents for both first year students (23%) and interns (68%).

Many different types of hormonal agents are used for postponement of menstruation. Oral contraceptive (OC) pills and Norethisterone are the most commonly used while DMPA can be used as well. Combined OC pills prevent pregnancy mainly through progestational effects. Menstrual flow is reduced as suppression of the Hypothalemo-Pituitary Adrenal (HPA) axis produces a thinner and atrophic endometrium.[10] Norethindrone, an orally active progestational agent, has been shown to be effective in preventing break- through (unscheduled) bleeding and has a mild side-effect profile, making it a desirable alternative.[11]

According to Ganzel and Zimmerman, many brides choose to initiate OC pills three months prior to the wedding and time the period appropriately. However, this method has a significant incidence of failure (especially in the first few months of treatment) due to breakthrough bleeding, thus rendering a woman Niddah. To prevent this, some women choose to self-administer increased dosage despite the risk of thromboembolism.[12]

Despite belonging to Schedule H, more than 40% of study participants were able to acquire hormonal agents without prescription. This is particularly alarming as hormonal agents are known to cause many side effects when taken in an unsupervised manner for example short term side effects such as nausea and vomiting, headaches, spotting etc. along with long term complications such as weight gain, carbohydrate intolerance, mood swings, mental depression and serious complications such as leg vein thrombosis and pulmonary embolism[13] OC pills are also contraindicated in patients with previous history of thrombosis, moderate to severe hypertension, active liver disease, suspected malignancy of genitals and breast etc.[13] and hence should be taken only on prescription by a registered medical practitioner.

Knowledge about preparation of hormonal agents is very low with only 07% amidst first year students while 48% interns were having correct knowledge. This can be attributed to

the fact that properties of hormonal agents, their indications and side effects are extensively covered in the curriculum of second and final year MBBS in Pharmacology and Obstetrics & Gynaecology respectively. Hormonal agents were highly efficacious with the menstrual cycle postpones in all the interns and 66% of first year students. The low efficacy rate in first year students might be due to improper use of the hormonal agents. Further studies can be carried out to find out the exact reason for this disparity. Probable causes could be factors such as incomplete knowledge about hormonal agents in first year students, incorrect dosage regimens etc.

The rate of adverse drug reaction (ADR) due to usage of hormonal agents was very low (<20%). Overall satisfaction rate was high. However there was unwillingness to use the agents again in the future for the postponement of menstruation. Probable reasons could be occurrence of ADR after taking hormonal agents or increased knowledge about their properties and hence to use them more judiciously. Further studies can be carried out to find out the reasons in detail.

CONCLUSION

A fair proportion of students both first year undergraduates and interns used hormonal agents for the postponement of menstruation with slightly higher preponderance in interns. As expected, interns were having more knowledge about the regimens used for the postponement of menstruation which reflected in its efficacy in terms of desired postponement of menstruation too. It is very surprising that, in spite of being schedule H drug, nearly half of study participants acquired them over the counter. Willingness for the usage in future was also reported in sizable study participants. Satisfaction rate was significantly higher in interns as compared to first year undergraduates. Large scale multicentric study is required to validate the results of this study because of the smaller sample size, single centric study and chances of false answer because of sensitivity of topic.

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