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Der Pharmacia Lettre, 2016, 8 (3):221-225
(http://scholarsresearchlibrary.com/archive.html)

Scholars Research Library
ISSN 0975-5071
USA CODEN: DPLEB4

Evaluating the Premenstrual Syndrome and Daily Consumption of 3 Cups of Daily Caffeine

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ABSTRACT

Caffeine, is a bitter and crystallized alkaloid and a family member of methylxanthine. Caffeine is inherently anti-inflammatory and there is in the different food sources such as coffee, tea, cola, chocolate, some types of cakes, biscuits and soft drink. It is a factor that affects the premenstrual syndrome (PMS) disorder. Due to the fact that there still exists uncertainty on the effects of caffeine on PMS, it was decided to conduct a study to evaluate the effect of caffeine on premenstrual syndrome. This study is an analytical-descriptive study which has been conducted on the 173 Medical Sciences students of Zahedan University in 2015. PSST standard questionnaire was used to collect information in which the reliability and validity were measured in Iran. Finally, after data collection, data have been analyzed by using SPSS 19software, descriptive statistics and test, chi-square, Fisher's exact test and ANOVA. The mean age of participants was 21.37 ± 2.59 in the study and 93 individuals (53.8%) of them used caffeine in this study. There was no significant relationship between the age and marital status and dysmenorrhea, duration of bleeding and PMS (P> 0.05). The relationship between the use of caffeine with PMS was significant (P <0.05) results showed that the relationship between the use of caffeine associated with depression was significant (P <0.05) and those ones with depression were used less caffeine. In this study, caffeine has effect on the menstrual syndrome and people who use caffeine were less affected by the Bund of PMS. Of course, in order to obtain reliable results, there is a need for an accurate tool for measuring caffeine.

Keywords: Caffeine, premenstrual syndrome, PMS, Zahedan

INTRODUCTION

Caffeine, is a crystallized and bitter alkaloid and a family member of methyl xanthine and is inherently anti-inflammatory and there is in the leaves of tea [Green, Black, Red], seeds of coffee and drug production [1] This material is widely spread throughout the body and is metabolized in the liver to the metabolites of caffeine including Paraxanthine, Theo bromine and Theophylline. This has major effects on the nervous system and immunity of the body [2]. Caffeine easily crosses the blood-brain barrier due to its lipophilic properties and plays as an antagonist of adenosine receptors, multiple and complex biochemical and behavioral effects in the system and central nervous of cAMP and also increase the level of Noradrenaline and acetylcholine neurotransmitters and the inhibits the phosphodiesterase enzyme and the GABA receptor [3]. The caffeine exists in the food sources such as coffee, tea, cola, chocolate, some types of cakes, biscuits and drinks. [4 and 5] this material is one of the factors that affects the disorder of premenstrual syndrome [PMS] [9-6].

Premenstrual syndrome [PMS] as a periodic event, is defined as a combination of physical , neurological and psychiatric disorders that as a result, social adjustment, interpersonal relationships and persons' normal activities faced with difficulties and has negative impact on the quality of life [10 and 11] this issue was first discovered in 1931 by Frank. However, results of his research were forgotten. It seemed that it was not rational for anyone that women suffer from this syndrome. Symptoms of this syndrome include minor fatigue and lack of concentration. More important effects such as seizures, epilepsy, asthma and convulsions that were sometimes severe and sometimes even forced to commit suicide of the women [12] This syndrome starts in the late secretory phase of the menstrual cycle and begins between an average of 5 to 7 days before menstruation and continues monthly for 2 to 4 days after the onset of menstrual bleeding and in particular people aged 18 to 35 years old are suffering from this syndrome [13 and 14] premenstrual syndrome is a complex situation. This syndrome includes more than 200 signals and its distinguishing criteria from the perspective of the World Health Organization include: anxiety, emotional instability, poor psychological symptoms, abdominal bloating, weight gain, breast tenderness, and swelling of the hands and feet, difficulty sleeping, changing of appetite and the desire for certain foods [15].

Given that uncertainty still exists on the effects of caffeine on PMS, so it was decided to conduct a study to evaluate the effect of caffeine on premenstrual syndrome.

MATERIALS AND METHODS

Procedure:

This is descriptive-analytical study which is conducted on 173 Medical Sciences students of Zahedan University in 2015. Inclusion criteria was in a way that students suffering from sickness of chronic, Psychologically disorders , drug consumption and over 30 years old people were out of study and excluded and also because all selected residents were located in a same place so they were similar in terms of diet. PSST standard questionnaire was used to collect information that tested its reliability and validity in Iran and Cronbach's alpha was evaluated 0.9. (16).The questionnaire contains 19 questions and PSST has two parts. The first part consists of 14 symbols of mood, physical and behavioral symptoms on the lives of people and the second part measure the impact of these sign and consists of 5 questions. For any questions, four criteria of, never, mild, moderate and severe were mentioned and were scored from zero to three. For the diagnosis of severe PMS, the following three conditions must be met: first condition: from the question 1 to 4, there should be at least one severe case. The second condition: in addition to the previous case, of the questions 1 to 14there should be at least 4 cases of moderate or severe, and the third condition: in the part of the symptoms affecting life (5 Finale) there should be a severe case. To diagnose average PMS, three following conditions must be met, the first condition: in the questions 1 to 4 there should be at least a moderate and severe case and second condition: in addition to the previous case, from the questions of 1 to 14, there should be at least 4 cases of moderate or severe, third condition: in the 5 last question there should be a moderate or severe cases. The rest of the people are those who have mild PMS. The method of collecting information were noted like this that the researcher explains the purpose of the project and talks about how to complete a questionnaire to each person who entered the study, also they given the trust to them that the results of study is published in a statistical results not individually. Information linked with them will stay fully confidential and they will be free to get out of the study. Then the questionnaires were distributed and were asked them that at the end of every menstrual cycle complete questionnaire in three consecutive. Finally, after data collection, data have been analyzed by using SPSS 19 software and descriptive statistics, chi-square, Fisher's exact test and ANOVA statistical.

RESULTS

The average age of participants in this study was 21.37 ± 2.59 respectively. Of those individuals, 155 patients (89.6%) were single and 18 (10.4%) were married. 17 (9.8%) during their menstrual cycles had bleeding less than 4 days, 136 patients (78.6%) between 4-7 days and 20 patients (11.6%) were bleeding more than 7 days. 93 patients (53.8%) of these were from caffeine use. There was not significant relationship between Dysmenorrhea, age and marital status, duration of bleeding and PMS (P>0.05).

PMS association between the uses of caffeine in each period, respectively, in Table 1, 2 and 3 is inserted.

Table 1: PMS connection with the use of caffeine in the first period (chi square test)

P = 0.00 9		Caffeine		Total	P Value
		Yes	No		
Severe	Count	20	17	37 (21.4%)	0.009
		54.1%	45.9%	100.0%	
Moderate	Count	33	45	78 (45.1%)	
		42.3%	57.7%	100.0%	
Mild	Count	40	18	58 (33.5%)	
		69.0%	31.0%	100.0%	
Total	Count	93	80	173	
		53.8%	46.2%	100.0%	

Table 2: connection with the use of caffeine PMS In the second period

P = 0.007		Caffeine		Total	P Value
		Yes	No		
Severe	Count	14	15	29 (16.8%)	0.007
		48.3%	51.7%	100.0%	
Moderate	Count	37	47	84 (48.6%)	
		44.0%	56.0%	100.0%	
Mild	Count	42	18	60 (34.7%)	
		70.0%	30.0%	100.0%	
Total	Count	93	80	173	
		53.8%	46.2%	100.0%	

Table 3: PMS connection with the use of caffeine in the third period

P = 0.025		Caffeine		Total	P Value
		Yes	No		
Severe	Count	21	23	44 (25.4%)	0.025
	% Within AO	47.7%	52.3%	100.0%	
Moderate	Count	33	39	72 (41.6%)	
	% Within AO	45.8%	54.2%	100.0%	
Mild	Count	39	18	57 (32.9%)	
	% Within AO	68.4%	31.6%	100.0%	
Total	Count	93	80	173	
	% Within AO	53.8%	46.2%	100.0%	

According to Table 1, 2 and 3 there was significant association between use of caffeine with PMS (P <0.05) results showed that the use of caffeine also had a significant relationship with depression (P <0.05) and those who use caffeine were less depressed. The use of caffeine associated with dysmenorrhea (P = 0.30) and bleeding (P = 0.73) was not statistically significant.

18 patients (10.4%) of the OCP used contraceptive pills and 127 individuals (73.4 percent) were used from dysmenorrhea. Dysmenorrhea menstrual was significantly associated with family history of the syndrome (P = 0.028). The OCP connection associated with family members and community was created disturbance. (P = 0.01) But the relationship between family history of bleeding and PMS was not observed (P> 0.05).

DISCUSSION

According to the results of this study, there is a significant association between the use of caffeine and PMS, respectively, and the people who use caffeine were less likely to infected PMS. Fenster and his colleagues studied the results in a way that people who used caffeine were less likely to develop long-term period. [17] In a study on pregnant animals [18] and man [19] was carried out that, the results showed that caffeine increases uterine vascular resistance and decreased blood flow in the uterus. It is expected that the uterine constriction of blood vessels reduce the blood flow to the uterus, the menstrual bleeding is also reduced, thereby reduces the duration of menstruation. From the biological point of view has been proven that caffeine can cause vasoconstriction. [20]

However, the study of CHUONG and colleagues [21] showed significant correlation was not found between caffeine use and PMS. Also, another study suggests that women who use caffeine, this will increase menstrual disorders [22] Cooper and colleagues also found no significant relationship between caffeine intake during menstruation. [23] Also other researchers, stated that there is no indication that caffeine consumption could not increase the risk of anovulation. . [24] As you can see statistics derived from sources and numerous articles in various countries show a significant difference, which some part of this cultural differences and disputes related to cultural differences and having a negative attitude in the face of menstruation and the subsequent restrictions on women's menstrual reactions between different communities.

In this study, there is a significant association between family history of premenstrual syndrome and PMDD which was associated with the study of Tatar et al [25].Of course in the study of Tatari people who have not had this history in their family showed a higher prevalence of PMDD that contrasts with the results of that study. Perhaps one of the reasons why it is different cultures in the study population. [26] Kaplan in their study on the relationship between family history and prevalence of PMDD pointed out this fact. [27]

Akhavan Akbari and colleagues on their results of their study found a significant association between family histories of menstrual syndrome with dysmenorrhea.[28]

There is no significant relationship between the ages and PMS while the Capella stated that age can affect PMS. [6]

CONCLUSION

In this study, caffeine had effect on menstrual syndrome and people who use caffeine were less affected by the Bund of PMS. Of course, in order to obtain reliable results we require a precision measuring tool forevaluating caffeine.

Acknowledgement
This study was the result of a student research project approved at Zahedan University of Medical Sciences. Hereby, we express our deep gratitude to those students who participated and collaborated in this study and Research authorities of Zahedan University of Medical Sciences who helped us in the process of data collection and financial support.

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