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Cyclical mastalgia: Prevalence and associated determinants in Hamadan City, Iran

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ABSTRACT

Objective: To assess prevalence of cyclical mastalgia and its main determinants in women who attended in health centers of Hamadan City, Iran.

Methods: This case–control study was conducted on 400 women (case: cyclical mastalgia, $n = 240$; control: without cyclical mastalgia, $n = 160$) who attended family planning clinic for routine follow-up in health centers. The cluster sampling was used. Information was collected by interviewing and using a standardized validated questionnaire. Severity of mastalgia was assessed through using visual analog scaling. Data processing and statistical analysis were performed by using SPSS 19.0.

Results: The results revealed that majority of women (60.0%) experienced cyclical mastalgia. Out of these, 22.5% and 37.5% were mild and moderate-to-severe mastalgia, respectively. No association was revealed in experience of depression and anxiety in mastalgia group. In a multivariable logistic regression model, the increasing age, age of marriage, history of abortion and history of premenstrual syndrome were main determinants of mastalgia, while use of oral contraceptive and regular exercise was associated with lower incidence of mastalgia.

Conclusions: Most of women with breast discomfort suffered cyclical mastalgia which severity can be determined by advanced age, age of marriage, history of abortion and history of premenstrual syndrome, but inversely by oral contraceptive use and exercise activity.

1. Introduction

Cyclical mastalgia affects up to two-thirds of women at some time during their reproductive lives. It is usually benign, but the fear of underlying breast cancer has become one of the most frequent reasons for consultation. Cyclic mastalgia is a common symptom experienced by women of reproductive age. It may be caused by the normal monthly changes in hormones. This pain usually occurs in both breasts. The pain is usually the most severe before a menstrual period and is often relieved when this period ends. Most cyclic pain relieves without treatment and usually disappears at menopause [1]. In most of the women who

suffered from this phenomenon, reassurance is the only advice required because of its self-limited nature emerging gradually and spontaneously within a few months. However, in some of them, suggesting different types of lifestyles such as adopting regular exercise, weight reduction, modifying dietary regimens, and quitting smoking should be scheduled [2–4].

The prevalence of this complaint has been widely varied because of inter-individual differences and social features. The study by Coskun *et al.* reported the prevalence of mastalgia in women attending in breast screening program to be 69% [5]. Amin *et al.* also revealed that 30% of premenstrual women suffered from cyclical mastalgia lasting for more than 5 days a month [6]. In another report by Ader *et al.*, 68% of women aged 18–44 years experienced cyclical breast symptoms; 22% experienced moderate-to-extreme discomfort (classified as cyclical mastalgia) [7]. Another report showed that 15% was frequent mastalgia [8].

Mastalgia can be associated with premenstrual syndrome (PMS), fibrocystic breast disease, psychologic disturbance and, rarely, breast cancer. The majority of women can be reassured after a clinical evaluation. Approximately, 15% women with cyclical mastalgia require pain-relieving therapy. Mechanical breast support, a low-fat, high-carbohydrate diet and topical non-steroidal anti-inflammatory agents are reasonable first-line treatments. Hormonal agents, such as bromocriptine, tamoxifen and

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danazol, have demonstrated efficacy in the treatment of mastalgia. Sixty percent of cyclic mastalgia recurs after treatment [1,3].

This variation in the prevalence of cyclical mastalgia not only depends on personal and social characteristics, but also is dependant to various determinant factors such as smoking, age, social and physical activities, and even psychological disturbances that should be identified to proper management of this phenomenon in each population [4]. Besides, because of its probable association with breast cancer, identifying risk factors of cyclical mastalgia is necessary.

This study aimed to assess prevalence of cyclical mastalgia and its main determinants in women who attended in health centers of Hamadan City, Iran in 2013.

2. Materials and methods

2.1. Study sample

This case–control study was carried out on 400 women aged 15–60 years who attended family planning clinic for routine follow-up in health centers of Hamadan City, Iran in 2013. The study included case subjects ($n = 240$) who had cyclical mastalgia. The control subjects ($n = 160$) were women who did not have cyclical mastalgia. The cluster sampling was used. Firstly, the Hamadan City was divided into 4 regions and then from each region, four health centers were selected. Ten women of each center who did not have cyclical mastalgia were selected as a control group and 15 women who had cyclical mastalgia were selected as a case group. The subjects were chosen randomly according to their cyclical mastalgia. Inclusion criteria were: age ranging from 15 to 45 years with a diagnosis of benign breast disorder (It is generally described as a heaviness or soreness that radiates to the armpit and arm), not pregnant, not breast feeding; and the exclusion criteria were: women with age below 15 and above 45 years, pregnancy, lactation, allergy to drugs, use of drugs (hormonal, danazol, aspirin and bromocriptine), no previous history of breast malignancies.

All relevant information was collected by interviewing and using a standardized validated questionnaire including demographic characteristics, marital state, occupational condition, anthropometric parameters, educational level, characteristics related to mastalgia such as its time and duration, characteristics related to menstrual cycles, results of diagnostic interventions (breast sonography and mammography), and also previous history of psychological disorders including depression or anxiety. Self-reported height and weight were assessed and body mass index was calculated as weight (kg)/m^2 . In this study, the diagnosis of depression and anxiety was made by using the Diagnostic and Statistical Manual of Mental Disorders IV.

Cyclical mastalgia was defined as a bilateral painful breast swelling, lasting for more than 4 days and up to 3 weeks, always preceding menses, and subsiding progressively during menstruation [9]. Furthermore, severity of mastalgia was assessed by using visual analog scaling that scored between 0 and 10 and higher scores indicated higher pain severity.

2.2. Ethical considerations

The study was performed according to the Helsinki declaration protocol. The objectives of the study were explained to the women, and informed consent was obtained from all

participants. Women could leave the study at any time. The study was approved by the Ethical Committee of Hamadan University of Medical Sciences.

2.3. Statistical analysis

Results were reported as mean \pm SD for the quantitative variables and percentages for the categorical variables. The groups were compared by using the student's *t*-test for the continuous variables and the *Chi*-square test (or Fisher's exact test if required) for the categorical variables. Multivariate logistic regression analysis was taken to investigate their independence predictors. *P*-values less than 0.05 were considered statistically significant. Data processing and statistical analysis were performed by using SPSS version 19.0.

3. Results

The presence of cyclical mastalgia was reported in 60.0% of studied women. Out of these, 22.5% women had mild and 37.5% moderate-to-severe mastalgia, respectively. In mastalgia group, average duration of mastalgia was (5.52 ± 3.39) years and 95.8% of them, mastalgia was appeared before menstrual period. The mean score of mastalgia was 3.22 ± 2.97 . Majority of women (14%) had mastalgia “5” according visual analog scaling (Figure 1). A summary of women characteristics with or without mastalgia is shown in Table 1. No significant differences were found as far as marital status, educational level, number of parity, breast feeding, regularity of menstrual cycles, prevalence of chronic pelvic pain, family history of breast cancer, body mass index, age at menarche, as well as duration and interval of menstrual cycles. With regard to other characteristics, those who suffered from mastalgia were older, had higher mean marital age, experienced higher number of abortions, and suffered more from PMS in comparison with another group. Also, women with mastalgia expressed to have more regular exercise activity and have higher experience of breast sonography and mammography. Regarding psychological states, no discrepant was revealed in experience of depression; however anxiety was slightly more prevalent in mastalgia group. There was also significant difference in method of contraception in which the use of withdrawal method was more observed in mastalgia group, while using oral contraceptive (OCP) was more found in control group (Figure 2).

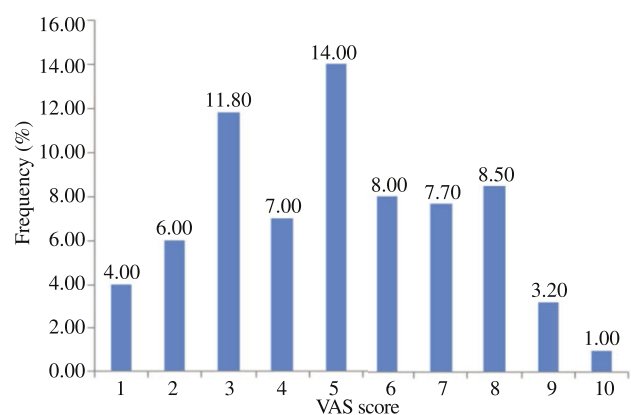


Figure 1. Distribution of pain severity in mastalgia group. VAS: Visual analog scaling.

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