

## FAMILIAL PREDISPOSITION OF DYSMENORRHEA AMONG THE MEDICAL STUDENTS

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### ABSTRACT

**Objective:** To evaluate familial predisposition of dysmenorrhea among the medical students of Isra University Hyderabad.

**Methodology:** An observational study was carried out at Isra University Hyderabad, from June to November 2007 in which a total number of 197 students participated. A pre designed questionnaire was administered to the female medical students in which their age, menarcheal age about menstrual cycle, presence or absence of dysmenorrhea, severity of symptoms and positive family history of dysmenorrhea in mothers and in sisters were asked. Exclusion criteria of the study were amenorrhea, irregular menstrual cycle and whose mothers and sisters had secondary dysmenorrhea as this study basically was concerned with primary dysmenorrhea and to observe familial risk.

**Results:** In this study dysmenorrhea was observed in 76%, the mean age of students was 20.9 SD±1.7, mean age at menarche with dysmenorrhea was 13.2 SD±1.1 and without dysmenorrhea was 12.7 SD±0.9. Positive family history of dysmenorrhea was seen in 33% of mothers and 43% in sisters and there was a group of students who had positive history in both mothers as well as in sisters.

**Conclusion:** We found significant correlation of positive family history with dysmenorrhea in the present study. This suggests that genetic factor is involved in the pathogenesis of primary dysmenorrhea and increases the familial tendency. Therefore positive family history could be the strong predictor for occurrence of dysmenorrhea in offspring and in siblings.

**KEY WORDS:** Dysmenorrhea, positive family history, Medical students.

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### INTRODUCTION

Onset of menstruation, menarche is a part of many adolescence changes, is a very important emotional land mark for every girl. It may be associated with some menstrual problems like dysmenorrhea.<sup>1,2</sup> This condition is commonly observed between the ages of 15 and 25 years.<sup>1</sup> Dysmenorrhea is classified in to two types, Primary, which usually begins shortly after the onset of menstruation and secondary dysmenorrhea, which develops later in life and mostly is associated with pelvic abnormalities.<sup>3,4</sup> Its prevalence varies from 40% to 90% according to different studies. The exact etiology of

dysmenorrhea is unknown but it is thought to be caused by release of prostaglandins, which causes uterine contractions and pain. In some studies it is mentioned that it results from hypoxia and ischemia even though vasopressin may also play a role in increasing uterine contractility, causing ischemic pain and elevated levels of vasopressin evaluated in women with primary dysmenorrhea.<sup>5,6</sup>

Where most of the females experience some degree of pain and discomfort in their menstruation but approximately 10-15% of the women have severe dysmenorrhea which significantly affects the quality of life and could have impacts on daily activities, social and academic performances at their workplace or at home.<sup>4,7,8</sup> Dysmenorrhea is found to be the leading cause of short term school absenteeism from 38 to 45.6% mentioned in different studies, 58.9% reported decreased daily activity & socialization 46%.<sup>4,7,8</sup>

Risk factors for dysmenorrhea include nulliparity, heavy menstrual flow, smoking and depression.<sup>6</sup> There are certain risk factors which are seemed to be associated with more severe dysmenorrhea like earlier age at menarche, long menstrual periods, heavy menstrual flow, smoking and positive family history.<sup>9</sup> Some how women differ considerably in their individual risks of dysmenorrhea for reasons that are largely unknown.<sup>8</sup> Still limited data is available in this regard which can avert the relationship of positive family history in occurrence of dysmenorrhea and severity of condition. Therefore present study was carried out to evaluate familial predisposition of primary dysmenor-

rhea among the medical students with positive family history.

## METHODOLOGY

This observational study was carried out at Isra University Medical College Hyderabad Pakistan from June to November 2007. A total 197 students participated. A pre designed questioner was administered to the female medical students from all classes, in which their age that was between 18 - 25 years, menarchel age about the menstrual cycle (duration, flow), presence or absence of dysmenorrhea and if it was present whether primary or secondary and positive family history of dysmenorrhea were asked. Regarding the family history, presence of dysmenorrhea in mothers and in sisters was inquired and also severities of dysmenorrhea were assessed and grading was done by multi-dimensional scoring system as G0 means no pain, G1 mild, G2 moderate and G3 severe pain. Exclusion criteria were amenorrhea or students with irregular menstrual cycles and whose mothers or sisters had secondary dysmenorrhea as this study was basically concerned with primary dysmenorrhea to observe the familial risk.

Before starting the study, an informed consent was obtained and then the girls were briefed about the rational of study. The descriptive statistic was used to determine mean age of participants and mean age at menarche, the categorical data was analyzed by chi square where as the whole data was analyzed by using the SPSS version 11.

Table-I: Dysmenorrhea its correlation with menstruation

<i>Factors</i>	<i>Dysmenorrhea Yes n = 149</i>	<i>Dysmenorrhea No n = 48</i>	<i>P- value</i>
Mean age (year)	20.9 + 1.7	21.1 + 1.9	0.037
Mean age at menarche (year)	13.2 + 1.1	12.7 + 0.9	0.07
Cycle			
* 21 - 28	134 (81.7%)	30 (18.03%)	< 0.001
* 29 - 35	15 (45.5%)	18 (54.5%)	
Duration:			
* 1 - 6	145 (82.9%)	30 (17.1%)	< 0.001
* > 7	4 (18.2%)	18 (81.8%)	
Flow:			
* Normal	127 (73.8%)	45 (26.2%)	0.12
* Heavy	22 (88.0%)	3 (12.0%)	

Table-II: Positive Family History in mothers and in sisters of students with and without Dysmenorrhea.

Variables	No. of cases and %	With Dysmenorrhea	Without Dysmenorrhea	P value
Mother				
Yes	65(33.0%)	59(90.8%)	6(9.2%)	<0.001
No	132(67.0%)	90(68.2%)	42(31.8%)	
Sister				
Yes	84(42.6%)	79(94.0%)	5(6.0%)	<0.001
No	113(57.4%)	70(61.9%)	43(38.1%)	

**RESULTS**

One hundred and ninety seven students participated in the study. Their ages were between 18 – 25 years and mean age was calculated, with dysmenorrhea 20.9 SD±1.7 and without dysmenorrhea with little variation (p<0.37) was found insignificant in relation to age. Dysmenorrhea was seen in 149(75.6%) where majority of them 123 (82.55%) had primary dysmenorrhea and 26 (17.44 %) had secondary dysmenorrhea. This was classified according to the onset of pain, as primary when it was present since menarche or 1-3 years after menarche and as secondary dysmenorrhea if it was 3-5 years after menarche. Mean age at menarche was 13.2 SD±1.1 with dysmenorrhea (p<0.07) was not found significant. Other factors of menstrual cycle like duration was normal from 1- 6 days in 145(82.9%) of girls (p<0.001) and the interval of menstruation was also seen normal from 21-28 days in most 134(81.77%) of students (p<0.001) and these results were significantly high in showing the normal duration, interval and flow of menstrual cycle in girls with dysmenorrhea Table-I.

The data regarding positive family history of dysmenorrhea was collected by asking the presence of primary dysmenorrhea in mothers and in sisters in which 65 (33.0%) of mothers of these girls had positive history and 84(42.6%) of

sisters were observed with dysmenorrhea Table-II. There was a group of participants 37 (24.83%) who had combined positive history in mothers as well as in sisters Table III. Severity of dysmenorrhea was assessed by grading and scoring of pain as G0 no pain, G1 mild 89(45.2%), G2 moderate 48(24.4 %) and G3 severe 12(6.1%). Majority of girls who experienced some degree of pain were in grade one to moderate grade two of dysmenorrhea.

**DISCUSSION**

Dysmenorrhea or menstrual cramping is one of the most common gynaecological problem seen in women’s health care, which can give rise to school absenteeism, lost working time and reduce quality of life.<sup>8</sup> Dysmenorrhea was observed in 75.6% of students in this study where as similar percentages were also reported by Nudrat Elahi 76% and by Hillen et al 80%.<sup>2,10</sup> Menstrual cycle factors, suggested to be significantly associated with dysmenorrhea in literature given is early age at menarche.<sup>2</sup> but mean age at menarche in our study participants with dysmenorrhea was 13.2+SD (p=0.07) So we did not find significant association in this regard. Another study supports our results , which explains that neither the age of menarche nor the establishment of ovulatory cycles determines the presence of adolescent dysmenorrhea.<sup>11</sup> We did not find correlation of menstrual bleeding,

Table-III: Grading of Dysmenorrhea by multi dimensional scoring system.

Grading	Working ability	Systemic symptoms	Analgesics
G0: No pain			
G1: Mild	Rarely affected	None	Rarely required
G2: Moderate	Moderately affected	Few	Required
G3: Severe	Clearly inhibited	Apparent	Poor effect

interval and duration of cycle with dysmenorrhea. A study among Thai adolescents too did not find any association of amount, interval and duration of menstrual cycle with dysmenorrhea.<sup>12</sup>

We found 59 participants with dysmenorrhea who had positive family history in their mothers, only 6 girls without dysmenorrhea had positive history in mothers and 84 sisters of the students with dysmenorrhea had positive history. This shows the strong familial correlation and determinant factor for dysmenorrhea. Similarly it was observed in another study from Pakistan that girls whose mothers have dysmenorrhea are more likely to suffer.<sup>2</sup> Thirty seven girls with dysmenorrhea had positive history in both their mothers as well as in sisters. Limb AY and colleagues have also reported the significant correlation of maternal dysmenorrhea and sisters with dysmenorrhea.<sup>13</sup> In the present study the girls who had positive family history suffered more, which suggest that there must be some genetic factor. A study from rural China evaluated the metabolic gene polymorphism and risk of dysmenorrhea and they provided the evidence of genetic susceptibility to recurrent dysmenorrhea.<sup>8</sup>

Silberg L. et al also observed the genetic factor in pairs of female monozygotic and dizygotic twins for menstruation, dysmenorrhea and severity of pain. They have reported that menstrual symptoms are entirely genetic in origin.<sup>14</sup>

### CONCLUSION

Positive family history of dysmenorrhea is an important risk factor. We found significant correlation in the present study, which suggests that genetic factor is involved in the pathogenesis of primary dysmenorrhea and increases the familial tendency. Therefore positive family history could be the strong predictor for occurrence of dysmenorrhea in offspring and siblings.

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