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Attention-Deficit Hyperactivity disorder in adult primary dysmenorrhea patients

Nevin SAGSOZ[1], Omer OGUZTURK[2,*], Fatma AKTULUM[3]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Kirikkale University, Kirikkale, Turkey
[2]Department of Psychiatry, Faculty of Medicine, Karabuk University, Karabuk, Turkey
[3]Department of Obstetrics and Gynecology, Faculty of Medicine, Gazi University, Ankara, Turkey

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Abstract

The aim of this study is to evaluate attention-deficit hyperactivity disorder in adult primary dysmenorrhea patients. 62 primary dysmenorrhea patients and 52 control group members are included in the study. Demographic characteristics such as education level and age were noted. Attention-deficit hyperactivity disorder symptoms were identified by the Adult Attention-Deficit/Hyperactivity Disorder Self-Report Scale, Short Form-36 and also Hospital Anxiety and Depression Scale were conducted. According to the Adult Attention-Deficit/Hyperactivity Disorder Self-Report Scale scores primary dysmenorrhea patients had a significantly higher rate compared to the control group. In bivariate analysis, Adult Attention-Deficit/Hyperactivity Disorder Self-Report Scale scores were found to have an association with Short Form-36 physical and mental component scores, anxiety and depression scores. Symptoms of attention-deficit hyperactivity disorder may be confronted in primary dysmenorrhea patients.

Keywords: attention-deficit hyperactivity disorder in adults self-report scale, primary dysmenorrhea, quality of life, anxiety, depression

1. Introduction

Dysmenorrhea is a gynecological problem which is quite common and its characteristics are abdominal and lumbar region pain in the first few days of the menstrual cycle, it may cause limitation of the daily activities. It is categorized as primary and secondary dysmenorrhea, in two groups. Primary dysmenorrhea (PD) is, in the absence of any underlying pelvic pathology, cramps occurring in the uterus during menstruation, whereas secondary dysmenorrhea is menstrual pain that is a result of an underlying pelvic pathologies, for example endometriosis (Sahin et al., 2018; Harel, 2012).

Headache, nausea, vomiting, and fatigue may also be experienced together with dysmenorrhea. 25-50% of the women in reproductive age could be affected by dysmenorrhea (Ju et al., 2014; Zuckerman et al., 2018). Dysmenorrhea can be counted as one of the main factors which disrupt the social activities and quality of life in young women (Nazarpour, 2010; Iacovides et al., 2015). Even if dysmenorrhea is not considered as a morbid situation, it may cause inefficiency and disability (Bajalan et al., 2018). Attention-deficit hyperactivity disorder (ADHD) is a disorder with neurodevelopmental origin, its onset is in childhood and basic characteristics are impaired and inappropriate attention, impulsivity and motor hyperactivity these difficulties often continue to adult ages (Dopheide and Pliszka, 2009), Average prevalence rate of ADHD is about 2.5% 4.9% in general adult population (Simon, 2009).

Adult Attention-Deficit/Hyperactivity Disorder Self-Report Scale is established on the base of criteria for ADHD from the DSM-IV (Kessler et al., 2007). No study investigating the relationship between ADHD and PD has been published yet. This study aims to inspect attention-deficit hyperactivity in adult PD patients.

2. Materials and methods

The study sample was constituted by random patients who registered to Gynecology and Obstetrics Clinics. Current principles of Helsinki Declaration were adopted; institutional ethical committee approval was obtained and patients were informed about the course of study. All patients signed an informed consent form after detailed explanation. Sixty- two adults clinically diagnosed with PD and control group of 52 healthy people were included in this study. The sample size was chosen according to our patients. Studies with common features which published before were also evaluated. Age and education levels were tried to be approximate between volunteer family members, volunteer healthy workers who doesn't have a psychiatric and /or neurodegenerative diseases in their medical history were chosen in control group. Demographic characteristics like age and education level were noted. Exclusion criteria were; history of bipolar disorder, neurodegenerative diseases like Parkinson's disease, psychosis, anxiety disorder, seizure disorder dementia, mental retardation or substance abuse.

* Correspondence: omer-oguzturk@hotmail.com

2.1. Attention-Deficit / Hyperactivity Disorder in Adults Self-Report Scale (ASRS)

The ASRS has two subscales, hyperactivity-impulsivity and inattention, each one of them consists of nine items. The criteria of ADHD taken from the DSM-IV constitutes the base of ASRS. The ASRS has a rating scale which expands from 0 to 4: 0 = never, 1 = sometimes, 2 = rarely 3=often, 4 = very often. All items seek answers for the frequency of symptoms in the past 6 months by using a Likert scale with 4 points: 4 for very often, 3 for often, 2 for rarely, 1 for sometimes and 0 for never (Kessler et al., 2007). Dogan et al. performed tests for validation and reliability of the ASRS' s Turkish version (Doğan et al., 2009). Total score of 36 or greater on the ADHD scale was considered as determiner of high ADHD possibility for an individual.

2.2. Quality of life

Short Form (36) Health Survey (SF-36), Version 1.0 (The Health Institute, New England Medical Center) was the tool that used to score Quality of life related with general health (HRQL) in this study. Measurements of the SF-36e are health domains of general health, physical functions, body pain, physical health problems related role limitations, function, vitality, emotional problems related role limitations, and mental health. We can aggregate these domains further into two main groups: physical and mental health summary scores (Ware and Sherbourne, 1992).

2.3. Hospital anxiety and depression (HAD) scale

We used HAD scale to evaluate patients' depression and anxiety levels. There were 14 items which addresses depression (seven items) and anxiety (seven items). Every item had scores from 0 to 3, and total score could change from 0 to 21. The cut-off point for depression and anxiety was 8/21 (Bjelland et al., 2012).

2.4. Statistical analysis

We analyzed the results by a computer software (SPSS version 17.0). In all tests, a $p<0.05$ was regarded as statistical significance. In titer of mean and ±SD, continuous variables were presented. For all variables, normality of distribution was evaluated by using the Kolmogorov–Smirnov test. While Mann–Whitney U test was used for abnormally distributed variables, student's t- test was used for variables with normal distribution and for categorical parameters, Fisher's exact test and Chi-square test was used. Pearson's correlation was used to perform bivariate analyses.

3. Results

PD patients and control group's characteristics are shown in Table 1. Education level and age distribution were approximate in two groups. PD patients showed ASRS scores, depressive scores and anxiety scores with higher significance, in comparison with control group (Table 1).

Mean SF-36 health and physical summary scores of patients with PD were found to be significantly lower than control group members (Table 1). ASRS scores showed negative correlation with SF-36 health and physical summary scores in patients with PD (Table 2). ASRS scores and depression and anxiety scores were positively correlated in patients with PD (Table 2).

Table 1. The characteristics of patients with Primary dysmenorrhea and control group

	Patients with PD (n:62)	Control group (n:52)	P
Age, years	21.24±2.59	21.57±2.32	0.43
Education levels			
Primary school	1	2	
High school	16	20	0.23
University	45	30	
ASRS Inattention	15.54±8.15	8.15±3.50	<0.01
ASRS Hyperactivity-Impulsivity	32.12±6.48	17.13±5.86	<0.01
ASRS total	47.67±9.02	25.28±8.18	<0.01
SF-36 physical component	66.96±20.05	79.13±17.21	0.001
SF-36 mental component	50.98±19.18	71.47±16.06	<0.001
Anxiety score	16.40±3.16	14.23±2.46	<0.001
Depression score	16.67±2.03	15.51±2.10	0.04

PD; Primary dysmenorrhea, ASRS; Adult Attention Deficit/Hyperactivity Disorder Self-Report Scale, SF; Short Form

Table 2. Correlates of ASRS scores in patients with Primary dysmenorrhea

	SF-36 –FC		SF-36 –MC		Anxiety score		Depression score	
	r	p	r	p	r	p	r	P
ASRS Total score	-0.3	*0.001*	-0.50	*<0.001*	0.35	*0.001*	0.27	*0.004*

ASRS; Adult Attention Deficit/Hyperactivity Disorder Self-Report Scale, SF-36 –FC; Short Form- 36- physical component, SF-36 –MC; Short Form- 36- mental component

4. Discussion

This is the first study which has investigated the association of PD with ADHD. The results of study demonstrated remarkably higher mean of ADHD scores than control group. Negative correlations between SF-36 scores and ADHD scores were detected in this study. These results indicated the existence of deterioration of quality of life in PD patients who had increased ADHD scores. Impairment of quality of life in women with PD was also suggested by test results of previous studies (Iacovides et al., 2014; Al-Jefout et al., 2015). Positive correlations between depression and anxiety scores and ADHD scores were found in this study. Association of dysmenorrhea with anxiety and depression was shown in many other studies (Sahin et al., 2018; Nazarpour, 2010; Bahrami et al., 2017).

Gagua et al. showed that women with dysmenorrhea were found to have higher depression and anxiety scores (Gagua et al., 2013). Even though the underlying mechanism of the relationship between quality of life and dysmenorrhea and depression and anxiety has not been fully understood yet, we can explain this relationship as the adverse effect of chronic pain which is experienced in dysmenorrhea. Liang et al. also indicated the possible association of chemicals such as vasopressin, phospholipids and prostaglandins released during menstrual pain with anxiety and depression (Liang et al., 2012). We don't know the reason of higher ADHD scores in patients with P. Co-existing psychiatric comorbidities to this mechanism may be possible in both disease

Some limitations were encountered during this study. First one is the small scale of our study group. Second one is limitations of scales, and diagnoses that shouldn't have been made based on these data alone. Interviews with patients is the key factor the clinical evaluation ADHD. Therefore, in order to confirm these results, studies with larger scales are needed.

As a conclusion, adult PD patients may experience ADHD symptoms. According to findings we had, diminished quality of life, depression, anxiety and ADHD symptoms could be seen among PD patients. It is suggested for all clinicians to evaluate the patients with PD for ADHD symptoms' possibility and when it seems appropriate to make more detailed assessments. We may gain some hopeful outcomes about recovery of PD comorbidities from future studies which will be conducted to seek treatment of ADHD

Conflict of interest

None to declare.

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None to declare.

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