

The Evaluation of Headache in Patients with Schizophrenia: A Case- Control Study

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ABSTRACT

The evaluation of headache in patients with schizophrenia: a case-control study

Objective: The aim of this study is to explore the frequency and the types of headache in patients with schizophrenia and to compare it with the healthy control group.

Method: A hundred and one patients and eighty nine healthy subjects were included in this case-control study. Socio-demographic data form, structured clinical interview for DSM disorders type 1 (SCID-1), Scale for the Assessment of the Negative Symptoms (SANS) and of the Positive Symptoms (SAPS) were applied. The subjects with headache were consulted to the neurology clinic.

Results: The prevalence of headache in the patient group was 38.6% whereas the prevalence of headache in the control group was 37.1%. Tension type headache (TTH) was the most prominent type in both group (31.7% of patients, 18.0% of controls) and the presence of TTH in patients with schizophrenia was found statistically significant. Migraine type headache was detected in 2.0% of patients and 11.2% of controls. The ratio of headache was lesser in patients than in the controls.

Conclusion: Schizophrenic patients have headache as much as the healthy subjects but they complain less about their headache than the controls do. Further studies with larger samples in patients with schizophrenia would present the importance of the issue and improve the quality of life in patients with schizophrenia contributing the analgesia.

Key words: Headache, migraine, pain, psychiatric disorders, schizophrenia



ÖZET

Şizofrenli hastalarda baş ağrısının değerlendirilmesi: Vaka-kontrol çalışması

Amaç: Bu çalışmada şizofrenli hastalarda sağlıklı kontrol grubu ile karşılaştırarak baş ağrısı sıklığı ve hangi tip baş ağrılarının olduğunu araştırılması amaçlandı.

Yöntem: Çalışmaya 101 hasta ve 89 sağlıklı kontrol grubu alındı. Hastalara araştırmacılar tarafından hazırlanan, hastanın sosyo-demografik özelliklerinin, hastalığı ile ilgili bilgilerin ve baş ağrısı ile ilgili soruların yer aldığı sosyo-demografik veri formu, DSM-IV eksen 1 tanı ölçütlerine göre hazırlanmış yapılandırılmış bir klinik görüşme formu olan SCID-1 ve Pozitif ve Negatif Belirtileri Değerlendirme Ölçeği uygulandı. Şu anda ya da geçmişte baş ağrısı olduğunu ifade eden hastalar baş ağrısının değerlendirilmesi amacıyla nöroloji polikliniğine yönlendirildi.

Bulgular: Şizofrenli hasta grubunun %38.6'sı baş ağrısı tanımlarken, kontrol grubunda bu oran %37.1 olarak bulundu. Her iki grupta da en fazla gerilim tipi baş ağrısı (GTBA) görülmesine rağmen (hasta grubu=%31.7, kontrol grubu=%18) şizofreni grubunda GTBA kontrol grubundan anlamlı olarak daha fazla bulundu. Migren tipi baş ağrısı ise kontrol grubunun %11.2sinde görülürken, hasta grubunun %2sinde görülmekteydi. Şizofrenli hasta grubu kontrol grubuna göre baş ağrısı yakınmasını daha az dile getirmekteydi.

Sonuç: Bu çalışmada şizofrenli hastaların normal popülasyon kadar baş ağrısına maruz kaldığı, baş ağrısı yakınmasını normal topluma göre daha az dile getirdikleri sonucu elde edilmiştir. Bu konuda yapılacak geniş örneklemli çalışmalar ve oluşturulacak tedavi protokolleri şizofrenli hastaların yaşam kalitesinin artmasına da katkı sağlayabilir.

Anahtar kelimeler: Baş ağrısı, migren, ağrı, psikiyatrik hastalık, şizofreni

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INTRODUCTION

Headache is a disturbance affecting 90% of the population (1). The International Headache Society (IHS) has classified headaches as 14 main group and hundreds of sub-groups (2). Headaches emerging directly just as headache and has no relation with any disease are named as “primary headaches”. This class involves migraine, tension type headache (TTH) and cluster type headache. Migraine and TTH are most seen headache types (3). Secondary headaches’ prevalence is 10% and it secondarily seen during the any illness’ progress whose etiology is known such as brain vessel diseases, nervous system diseases, brain tumors, eye diseases, sinusitis, meningitis (4). Migraine has a nature that generally recurrent, frequently located on one-side, characterized with throbbing, and intolerance to the light and voice, and concomitant the presence of the nausea, worsening with the movement. Whereas TTH is a headache located bilaterally, characterized as repressive and astringent, not worsening with daily actions, not accompanied by nausea or vomiting, and there is no intolerance to the light or voice. The severity of headache in migraine is much more than TTH (1).

Community-based studies investigated the relation between psychiatric disease and headache (5) and the most relevant relation was reported to be between anxiety disorder and depressive disorder (6).

Studies have shown that the prevalence of the headache in patients with chronic schizophrenia is lesser than the normal population (7). The tendency of reduction in headache frequency in this group of patients might be explained by the less sensitivity to pain (8). Previous studies reported that the loss of pain sensation and the reduction of pain sensitivity were present (9-11). Although results of studies investigating the reduction of the pain sensation in schizophrenia are not convincing, four different kind of study types have provided data to support this argument; a) Clinical case reports that determine the reduced or no pain sensation in patients with schizophrenia during different kinds of painful medical situations (ruptured appendix, perforated bowel, peritonitis, etc.), b) Population-based

studies that have shown the increased prevalence of reduction or loss of the pain sensation in schizophrenic patients who suffer from a painful medical condition, c) Population-based studies that defined the reduced prevalence of schizophrenia in patients who suffer from pain and d) Experimental studies have shown that the pain threshold is high in patients with schizophrenia (11).

There is not enough research in the literature regarding the presence of headache in patients with schizophrenia. In this study it was aimed to evaluate the prevalence and types of headache in schizophrenic patients and to compare the results with healthy controls and thus, to contribute to the literature.

METHOD

Patients between 18 and 65 years old and who were diagnosed as schizophrenia according to DSM-IV-TR criteria in Recep Tayyip Erdogan University Training and Research Hospital outpatient clinic in 2011 and were being followed for at least two years, who signed the consent form and whose education and functioning levels were well-enough to fulfill the questionnaires were selected for the study. Control group was similar with the patient group in terms of age and gender. They were selected from workers in our hospital or from patients’ companion who had no psychiatric treatment or medical treatment history and gave informed consent to involve in the study. The members of the healthy volunteers had no neurological disease or treatment history. Furthermore, hospital file records of the control group were examined by us. All volunteers completed the study.

A hundred and one patients and 89 of healthy persons were included. Socio-demographic data form which was prepared by authors to evaluate the patient’s sociodemographic features and question the headache, structured clinical interview for DSM disorders type 1 (SCID-1), Scale for the Assessment of Negative Symptoms (SANS) and Scale for the Assessment of the Positive Symptoms (SAPS) were applied to the patients. Patients declaring headache at that time or in the past were consulted to the neurology clinic. Types and

characteristics of the headache were evaluated by a neurologist. International Classification Headache Disorders-2004 version (ICH-2004) was used for evaluating the headache. Similarly, healthy controls who complained the headache were consulted to the neurology. All participants gave written informed consent. The study protocol was approved by the Ethics Committee of the Faculty of Medicine, University of Recep Tayyip Erdogan, Rize, Turkey.

Measures

Sociodemographic data form was prepared by authors to evaluate the patient's socio-demographic features and question the headache.

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-1): SCID-1 is a structured clinical interview for Axis I type of psychiatric disorders. It has been developed by First et al. (12) Turkish version's validity and reliability of SCID-I was validated by Corapcioglu et al. (13) and agreement percentage was 98.1% and its reliability coefficient (Cronbach alpha) was found as 0.86.

Scale for the Assessment of Negative Symptoms (SANS): SANS developed by Andreasen (14) and its Turkish version was validated and studied by Erkoc et al. (15). SANS consists of the five subscales; the flattening of the affect, impoverishment of thought, involuntariness (apathy, anhedonia), social withdrawal, and attention deficit.

Scale for the Assessment of Positive Symptoms (SAPS): SAPS developed by Andreasen (16) and validated and studied by Erkoc et al. (17). SAPS consist of five subscale containing hallucinations, delusions, bizarre behavior, positive formal thought disorder and inappropriate affect.

International Classification of Headache (ICH-2004): The first classification was done in 1988, the second version was reviewed and republished in 2004 (2).

Statistical Analysis

The SPSS for Windows 18.0 program was used for analyses. Descriptive data was shown as mean±standard deviation for numerical variables, and as frequency and per cent for categorical variables. To compare groups Student's t test and its non-parametrical equivalent, Mann Whitney U test were used. Chi-square and Fisher's exact test were applied for categorical variables. $P < 0.05$ were accepted as significant.

RESULTS

In this study, 101 schizophrenic patients and 89 healthy persons were included, and both groups were same in terms of age, education levels, and sex. Demographic features of groups were shown in Table 1.

The duration of illness of patients was changeable as from 2 years to 37 years, mean duration of illness was 15.68 ± 9.52 years. Eighty six point one percent of patients have been taking their medicine regularly since at the beginning of the illness. The rest of the patients (13.1%) were not using their drugs regularly. While the percentage of the usage of single antipsychotic drug was 36.6%, the rest of the patients (63.4%), were using multiple antipsychotic drugs. The mean of the SAPS score 38.80 ± 24.56 , of the SANS score was 49.49 ± 26.32 .

Complaint of headache was reported by 38.6% of patients with schizophrenia, and by 37.1% of the controls. There were no difference in terms of the frequency of headache in two groups ($p=0.828$). When two groups were compared according to type of headaches, the difference was found as statistically significance ($p=0.014$). Whereas in both groups, the most prominent type of headache was TTH (31.7% of patients, 18% of controls), TTH was found significantly higher in patients than the controls ($p=0.045$). Migraine was detected in 11.2% of controls and in 2% of patients ($p=0.02$). Headache and its features related to the groups and their comparisons were shown in Table 2.

Twenty three point one percent ($n=9$) of 39 patients and 3% of controls ($n=33$) who complained from the headache had never complained from the

Table 1: Socio-demographic features of groups

	Patient		Control		p- value
	n=101	%	n = 89	%	
Gender					
Female	38	37.6	41	46.1	0.239
Male	63	62.4	48	53.9	
Age					
18-25	6	5.9	11	12.4	
26-35	32	31.7	22	24.7	
36-45	34	33.7	28	31.5	0.122
46-55	22	21.8	14	15.7	
55 and over	7	6.9	14	15.7	
Educational status					
No schooling	1	1.0	4	4.5	
Primary School	53	52.5	39	43.8	
Secondary School	13	12.9	15	16.9	0.442
College	24	23.8	20	22.5	
University	10	9.9	11	12.4	
Marital status					
Single	62	61.4	16	18	
Married	27	26.7	71	79.8	<0.001
Divorced	12	11.9	2	2.2	
Employment status					
Not working	62	61.4	12	13.5	
Working	18	17.8	37	41.6	<0.001
Pension	11	10.9	11	12.4	
House wife	10	9.9	29	32.6	
Place of residence					
Rural	73	72.3	42	47.2	<0.001
Urban	28	27.7	47	52.8	
Smoking	55	54.5	28	31.5	0.001
Alcohol	7	6.9	4	4.5	0.685
Psychiatric family history	53	52.5	48	53.9	0.841
Family history of headache symptoms	53	52.5	36	40.4	0.097
Family history of migraine	18	17.8	18	20.2	0.813

Table 2: Both type and presence of headache groups

	Patient		Control		P
	n	%	n	%	
Headache					
No	62	61.4	56	62.9	0.828
Yes	39	38.6	33	37.1	
Type					
Migraine	2	2.0	10	11.2	
Tension Type	32	31.7	16	18.0	0.014
Others	5	5.0	7	7.9	

headache before. Schizophrenic patients were less complaining than controls and this difference was statistically significant ($p=0.014$).

Half of the females ($n=19$) and 31.7% of the males ($n=20$) who suffer from schizophrenia have complained from headache, but there were no statistically significant

difference between males and females ($p=0.106$). In controls, headache was found in 46.3% of the females ($n=19$) and 29.2% of the males ($n=14$). Similarly there were no difference in terms of the frequency of headache between the males and the females ($p=0.147$).

Twenty one point one percent of schizophrenic

women and 25% of men with schizophrenia and headache had never complained from the headache before. The difference in terms of the frequency between two sex was not significant ($p=0.535$).

No difference was noticed with antipsychotic treatment in terms of the severity and duration of the headache in 53.8% of patients with schizophrenia. Among the patients 33.3% ($n=13$) reported a reduction in the severity of the headache after the antipsychotic treatment, whereas 12.8% ($n=5$) expressed an increase in the severity of the headache.

In patient group, the mean of the SAPS score of patients who had headache was 46.43 ± 21.81 , whereas it was 34.00 ± 25.14 for patients who did not have headache. Likewise, the mean of the SANS score of the patients who had headache was 58.84 ± 23.40 , while it was 43.61 ± 26.52 for patients who did not have headache. Patients' SAPS and SANS scores who had experienced headache was found significantly higher than patients who did not report a headache ($p=0.01$ and $p=0.03$ respectively).

DISCUSSION

Headache can be seen with the course of many psychiatric disorders. Especially this situation has been reported in a great deal of studies with mood disorders, anxiety disorders, somatoform disorders (5). There are a few studies regarding the frequency of the headache in patients with schizophrenia (8). In our study, we compared that the frequency of headache and related factors in patients with schizophrenia and healthy controls and we found that there was no difference in terms of the frequency of headache between two groups while the frequency of headache was higher in patients than controls. Related and limited studies have been reported that the frequency of headache is less in chronic schizophrenic patients than normal population (7). But in a recent study conducted by Krutzky et al. (8), the frequency of headache in patients with schizophrenia was reported as higher than normal population.

Schizophrenic patients have much more complained from the headache at the beginning of the illness (18).

In contrary, chronic period of the illness is characterized by general apathy. Authors have explained this situation as decreased awareness or decreased sensitivity to pain (1,7). In this study we included the patients who had been following at least for 2 years because, the schizophrenic process can begin with somatic or hypochondriac symptoms in some cases. But, in our study, results did not support the hypothesis about the presence of decreased sensitivity to pain in chronic period of schizophrenia. For all that our results are compatible with Krutzky et al.'s report (8).

There are exacerbation and remission periods of progress in schizophrenia. Clinical researches have been reported that patients have complained different somatic complaints in different periods of the illness. These are varied from mild somatic complaints to somatic delusions (19,20). In the present study, we detected that the SAPS scores were higher in patients who complained from the headache. So, this high level may be related to the period of the illness or somatic symptoms related to the illness. Although the majority of patients have been taking their drugs regularly, the illness symptoms of those who have taken their medicine irregularly might contribute to this higher value.

There are some differences in the prevalence of the headache because of the diversity of the studies stem from different countries, societies, or ages. The lifetime prevalence of migraine in developed countries is about 13-16% (for men 7-9%, for women 13.5-25%) (21-28). The prevalence of the TTH type headache throughout the world is more than 46%. In a study, conducted in Turkey, the lifetime prevalence of the TTH in young population was found as 20.35 percent (29). In another study, in a psychiatry outpatient clinic, the prevalence of the headache was found 32.3% and 13.7% of them was found migraine, and 12.6% of them have TTH type as the most common headaches (30).

In our study, TTH type was the most common type in both groups (31.7% for patients, 18% for controls) whereas in patient group, TTH was found significantly higher than controls. Migraine type of headache was detected in 11.2% of controls while it was present in 2% of patients.

Krutzky et al. (8) reported that TTH was most prominent type of headache in schizophrenic patients and higher than controls, whereas migraine was higher in controls than patients. But their report for migraine ratio in patients was higher than in our report and it may be explained with social features.

In our study, the prevalence of TTH in controls was less than reported in literature. Considering that the control group was formed by persons who have never appealed to the psychiatry and thinking that the common togetherness of the headache and psychiatric disorders, there is a need to evaluate for this healthy group in terms of sub-threshold psychiatric disorders.

Twenty three point one percent (n=9) of 39 patients who had complained from the headache had never headache before. Three percent (n=1) of 33 controls who reported headache, had never complained. Schizophrenic patients were complaining less from headache than controls. These results were compatible with the results, conducted by Krutzky et al. (8).

Migraine and TTH, which are the most common types of headache, are much more seen in women than men. The prevalence of the migraine for women is about 15-18%, for men is 8-10%. Although TTH is not prominent like migraine, it is frequently seen in women (31). In the present study, even though statistically insignificant, the incidence of headache was found to be much more common in women than men in both the control and the patient groups, consistent with previous studies.

Fifty three point eight percent (n=21) of patients did declare that there was no difference in the severity and the duration of the headache with antipsychotic treatment, a reduction of the severity of the headache

after usage of the antipsychotics was present in 33.3% of patients (n=13), and an increase in the severity of the headache with antipsychotic treatment was reported in 12.8% of patients (n=5). Some researches have been argued that antipsychotics have analgesic features and the differences in pain process in some schizophrenic patients may be related to this (32-35). In our study, 33.3% of patients who had headache reported that their severity and duration of pain decreased after using the antipsychotic medication can be explained with the analgesic effect of the antipsychotics. An increase in the severity of pain after antipsychotic medication might be related to the neurological adverse effect of the antipsychotics.

Recent study has several limitations. First, patient group was constituted from patients who were in the chronic phase and taking antipsychotic medication. Because of the confusing effect of these antipsychotics, further larger studies which will eliminate these confounding effects of the antipsychotics or compare the different periods of illness will provide us more comprehensive information. Second, because this study was carried out in one center and executed as cross-sectional, results of this study cannot be generalized. Nevertheless, results comparing the patients with the control group might be important for the other further studies.

In conclusion, this study showed that schizophrenic patients have headache as normal population has and patients less declare their headache than normal population. Further studies with larger samples of schizophrenic patients would present the importance of the issue and improve the quality of life in patients with schizophrenia contributing the analgesia.

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