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Münife Neyal Muftuoğlu · Hasan Herken · Hakan Demirci ·
Osman Virit · Abdurrahman Neyal

Alexithymic features in migraine patients

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Abstract The aims of the present study were 1) to investigate the alexithymic features in migraine patients and, 2) if alexithymia has any relation with the results of other psychological scales that are widely used in clinical practice to describe the psychopathologies, such as depression and anxiety. Demographic and clinical data of 50 cases with migraine without aura and 50 normal volunteers were supplied. All cases completed the Beck Depression Inventory, Hamilton Depression Rating Scale, State and Trait Anxiety Inventory and Toronto Alexithymia Scale. Migraine patients were significantly more depressive, anxious and alexithymic than the control group; there was no correlation between TAS scores and demographic variables; not depression but anxiety was significantly correlated with alexithymia in the migraine group, whereas none of the scores were found to be related to alexithymia in controls. According to our results, alexithymia is a frequent finding in migraine patients and is associated with anxiety to a considerable extent but not with depression.

Key words migraine · alexithymia · anxiety

Dr. M. Neyal (✉)
Degirmicem Mah. 6 no.lu sok. Seckin Apt. 67-6
27090 Gaziantep, Turkey
Tel.: +90-342-3350770
Fax: +90-342-3391538
E-Mail: neyal@superonline.com

Dr. M. Neyal Muftuoğlu · H. Demirci
Gaziantep University School of Medicine
Department of Neurology
Gaziantep, Turkey

Dr. H. Herken · Dr. O. Virit
Gaziantep University School of Medicine
Department of Psychiatry
Gaziantep, Turkey

A. Neyal
Gaziantep State Hospital
Neurology Clinic
Gaziantep, Turkey

Introduction

Alexithymia, a term first proposed by Sifneos [23], is used to describe a disorder where patients have difficulty in expressing their own feelings in words. It was initially used to denote an adaptive style creating a tendency to develop psychosomatic symptoms [6, 10, 13]. However, a specific correlation between alexithymia and somatization could not be satisfactorily established. It was also reported in patients with headache not due to structural disease [4, 11, 22].

Alexithymia has been stated as both a primary and stable personality construct and a secondary state that is created as a reaction to medical illnesses [27, 28]. A relatively high correlation of depression with alexithymia in the previous reports creates the controversy if alexithymia is a feature that is related to depression or is a distinct concept. Parker et al. studied this controversy using the statistical method of factor analysis and they reported that alexithymia is a construct that is distinct and separate from depression [19].

Affective disorders, particularly depression, are frequently reported in migraine patients [3, 8, 15]. However, alexithymia is still be an understudied topic in migraine cases.

A Patient's own capability of expressing his feelings in words has a substantial effect on the physician's competence on making a decision about the patient's psychological profile. Brief outpatient clinic interventions may easily result in missing the masked psychological disturbances, particularly in alexithymics. Moreover, depression or anxiety may have a uni- or bidirectional relation with alexithymia, which may alter each other's clinical presentation and overall clinical assessment.

The aims of the present study were 1) to investigate the association of alexithymia with migraine, a relatively less studied psychological feature and, 2) if alexithymia has any relation with the results of psychological test batteries that are widely used in clinical practice to describe the psychopathologies, such as depression and anxiety.

Method

A total of 61 subsequent adult cases of migraine without aura who were identified following the classification of the International Headache Society [5] fulfilled the following inclusion criterion; 11 cases did not accept the psychiatric evaluation. The remaining 50 migraine cases and 50 age-, sex- and educational level-matched normal volunteers were enrolled into the study. The control group was gathered from healthy hospital staff, who did not have any migraine, overt psychiatric disorder or chronic illness history and accepted to take part in the present study. The cases in the control group came from various socioeconomic groups and had various positions in the hospital.

Inclusion criterion

All cases had at least primary school education, were over 15 years of age, and did not have any overt psychiatric or chronic systemic illnesses. All cases were informed about the study and all accepted to complete the psychiatric evaluation and the psychological test battery.

Collection of the demographic and clinical data

Patient group

A previously prepared questionnaire including demographic and social parameters (age, sex, occupation, education, income and marital status), present complaints, past medical history, frequency of attacks during the last 6 months, symptomatology and associated features of the attacks, provoking factors, medication taken and detailed family and psychiatric history, had been completed for all patients.

Frequency of the migraine attacks in the last six months were obtained as an average number per month and number of the days that the patient could not continue her/his daily or professional life. Migraine patients were divided into two groups according to the attack frequency; i) less than three times a month and ii) three or more times a month.

The associated features were defined as the symptoms that are present along with the headache during the migraine attack but not as an aura symptom. Febrile convulsions, epilepsy and migraine equivalents during childhood were checked in the past medical history.

Control group

Demographic data (age, sex, occupation, education, income and marital status) and detailed past medical, family and psychiatric history of controls were completed.

Psychiatric evaluation

Following the neurological examination and identification of the migraine without aura, the cases were evaluated by a psychiatrist (HH) on the basis of structured clinical interviews and review of the records including the psychological test battery. The psychiatrist was aware that the cohort consisted of migraine patients but was unaware of the detailed clinical or neurological findings. A similar procedure on behalf of psychiatric evaluation was performed in the control group.

The psychological test battery included the Beck Depression Inventory (BDI) [2, 12], Hamilton Depression Rating Scale (HDRS) [1, 9], State and Trait Anxiety Inventories [17, 24] and Toronto Alexithymia Scale-26 items (TAS) [7, 25]. Reliability and validity of all were completed previously [1, 7, 12, 17].

When a cut-off point of 11 is adopted in the Turkish TAS-26 item version, the efficiency in differentiating alexithymics from nonalexithymics is 87% [7]. TAS-26 has been chosen in this study because it was the version that had been found to have criterion validity and reliability in Turkish [7] at the moment of the present study.

Statistical evaluation

Statistical analyses were made for comparisons of

- TAS, State and Trait Inventory Scale, BDI and HDRS scores of patients and controls;
- TAS scores according to the other psychological test scores (State and Trait Inventory Scale, BDI and HDRS scores) and,
- TAS scores according to the frequency of the attacks during the previous six months.

The sociodemographic characteristics of the patient and control groups were compared by chi-square test. We used student t-test for the comparison of the test scores of patient and control group. Subgroup comparison of the patient group was achieved by Mann Whitney U test when the sample included fewer than 30 cases.

Results

Included in the patient group were 32 females and 18 males, while 31 female and 19 male cases were included in the control group. The ages of the patients and the control cases were between 15–54 years (means 32.1 years and 29.8 years, respectively) and all had, at least, a primary school education.

The demographic parameters and clinical findings are given in Tables 1 and 2. The age, sex, education, income and marital status were compatible in the patient and control groups ($p = 0.13$, $p = 1.00$, $p = 0.80$, $p = 0.88$, $p = 0.82$, respectively). There was no correlation between TAS, BDI, HDRS, State and Trait Anxiety Inventory scores and demographic parameters ($p > 0.05$, for each parameter).

Photophobia/phonophobia was noted in 38, nausea/vomiting in 43, autonomic dysfunction in 28 and mood disturbances in 18 cases. Mood disturbances were predominantly negative, such as feeling depressed, anxious and angry.

Febrile convulsions were noted in one case and none of the cases had a history of epilepsy. Migraine equivalents during childhood were reported in 12 cases.

Frequency of the migraine attacks in the previous 6 months was not correlated with any of the scale scores, including TAS ($p = 0.19$ for BDI, $p = 0.21$ for HDRS, $p = 0.14$ for trait anxiety scores, $p = 0.89$ for state anxiety score and $p = 0.08$ for TAS).

Table 1 Demographic data of migraine and control cases

Demographic parameters		Patients	Controls
Age (mean)		32.1	29.8
Sex	Female	32	31
	Male	18	19
Marital status	Single	18	19
	Married	25	26
	Divorced	7	5
Education	Primary school	13	16
	High school	25	23
	University	12	11
Income	Low	11	13
	Moderate	27	25
	High	12	12

Table 2 Clinical data of migraine cases

Clinical data	
Beginning age	
Before age 25 years	29
After age 25 years	21
Migraine frequency	
< three times a month	31
≥ three times a month	19
Associating symptom	
Photophobia/phonophobia	38
Nausea/vomiting	43
Mood disturbances	18
Autonomic disturbances	
GIS motility disturbances	15
Flushing attacks	11
Attacks of feeling hot and cold	9
Sweating	7
Orthostatic hypotension	2
Total number of cases reporting autonomic findings	28
Number of cases two or more autonomic findings	9

Gastrointestinal motility disturbance was the most frequently reported autonomic disturbance: 15 cases reported gastrointestinal motility disturbances, 11 cases flushing attacks, 9 cases attacks of feeling hot or cold, 7 cases sweating and 2 cases orthostatic hypotension. None of the cases reported pupillary changes during the attacks. Nine cases reported two or more associated autonomic findings during the migraine attacks.

Provoking factors were diverse; however, the most frequently reported ones were sleep disturbances and intake of various foods.

BDI, HDRS, TAS and trait anxiety scores of migraine patients were significantly higher than those of the control group's ($p = 0.001$, $p = 0.001$, $p = 0.001$, $p = 0.003$, respectively). State anxiety scores did not show a significant difference between the patients and control cases ($p = 0.19$) (Table 3).

TAS scores were higher than the normal cut of point in 36 migraine cases (70%) and in 17 controls (36%). Depression scales (HDRS and BDI) did not show a correlation with alexithymia ($p = 0.12$ $z = 1.56$ and $p = 0.29$

Table 3 Comparison of control and patient groups' BDI, HDRS, TAS, State and Trait Anxiety Inventory scores

	Patients (n:50) Mean ± SD	Controls (n:50) Mean	t*	p	df
BDI	18.5 ± 11.3	10.0 ± 8.2	3.91	0.001	98
HDRS	18.7 ± 7.5	9.2 ± 1.3	5.99	0.001	98
TAS	12.2 ± 3.2	9.4 ± 0.5	3.84	0.001	98
STAI-I	46.8 ± 8.3	43.9 ± 1.6	1.31	0.19	98
STAI-II	48.8 ± 10.0	42.6 ± 1.1	3.08	0.003	99

BDI Beck Depression Inventory; HDRS Hamilton Depression Rating Scale; TAS Toronto Alexithymia Scale; STAI-I State Anxiety Inventory; STAI-II Trait Anxiety Inventory

*student t-test has been performed

$z = 1.06$, respectively) but the trait anxiety scores of alexithymic migraineurs were significantly higher than nonalexithymic cases ($p = 0.02$ $z = 2.30$). There was no similar correlation between TAS scores and any of the other tests in controls ($p = 0.51$ $z = 0.66$ for HDRS, $p = 0.51$ $z = 0.66$ for BDI, $p = 0.48$ $z = 0.71$ for state anxiety scores and $p = 0.33$ $z = 0.97$ for trait anxiety scores).

In summary,

- There was no correlation between TAS scores and any of the following parameters; age, sex, occupation, education, income and marital status and attack frequency in the last 6 months.
- Migraine patients were significantly more depressive, anxious and alexithymic than the control group.
- Neither of the depression scales (HDRS and BDI) showed a correlation with alexithymia. However, trait anxiety scores of alexithymic migraine cases were significantly higher than nonalexithymic cases. A similar correlation was not found in the control group. In other words, not depression but anxiety was significantly correlated with alexithymia in migraine patients.

Discussion

Our results indicate that migraine patients are considerably more depressive, anxious and alexithymic than controls. However, higher scores of anxiety but not depression in alexithymic migraineurs, which impress that the alexithymic migraineurs were not more depressive but more anxious than the nonalexithymic migraineurs, should also be pointed out.

In a heterogeneous sample, Kirmayer and Robbins found alexithymia to be related to depressive symptoms, in addition to age and education [14]. They proposed that depressive symptoms may make patients more reluctant to express their feelings because of the fear for potential rejection by others which may result in limiting the patient's capability of recognizing and describing their own emotional state, and patients with significant medical history are more susceptible to learn to suppress their feelings [14]. Persistent and frequent headache attacks may similarly precipitate the patient's illness worry and lead the patient to feel guilty. This, in turn, makes him more apprehensive to potential negative feedbacks from others and then may be accepted as a learned pattern in daily life. From that point of view, more frequent headache attacks may have a relation with alexithymia. However, Wise et al. reported alexithymia as being best predicted by both depressed mood and lowered quality of life, rather than by the categorical ranking of the severity of the medical illness [27]. Furthermore, Brandt et al. reported that migraine patients had significantly more frequent psychological symptoms than the control subjects but it was not related with frequency of migraine attacks [3]. We were also not able to show a relation between the psychological characteristics and frequency of the migraine at-

tacks in the present study. Additionally, as is found in the present study, Parker et al. reported alexithymia as a distinct and separate construct from depression in a factor analysis study [19].

The manner of collecting the data about the frequency of the attacks in the present study was anamnestic, which may depend on the patients' memory and cause a bias in the results. Present study was a cross-sectional study and none of the patients had a diary for the last 6 months. Although, to stress the consistency, the questions about the frequency have been asked in two different ways in two distinct parts of the semistructured scale, it certainly would be more enlightening to obtain the data from the patients' headache diary. Also, we believe that it would be worthwhile to test if alexithymic characteristics alter following the treatment of migraine and/or anxiety and depression. Such further follow-up studies may give us more detailed information about this aspect of the psychological profile of migraine patients.

Many authors have studied the relation of alexithymia with sociodemographic characteristics, as well with depression and with anxiety [13, 16, 19, 20, 26]. In the present study, we could not find any relation between the sociodemographic parameters and TAS scores, neither in migraine nor in the control group, as was reported previously by Parker et al. [18].

It may be argued that treatment-seeking behavior may be more commonly associated with psychopathologic conditions, and a hospital-based study group may influence the results. Although it may be correct from one point of view, we believe that it is irrelevant with regard to clinical routine, because in daily medical practice, clinicians, almost always, deal with cases, who seek treatment for their headache problem. Furthermore, Rokicki and Holroyd showed that irrespective of whether they had sought treatment or not for their headache problems, recurrent headache sufferers reported higher levels of depression and physical symptoms than the subjects who did not experience headache [21].

Different aspects of alexithymia may be prominently linked to high TAS scores in various cases [14]. Overall, it is difficult to describe how alexithymics would carry out the psychological test batteries, which mainly depends on verbal expression of feelings. We believe that, in addition to verbal communication, the physician's impression about the alexithymic patient, which would probably be influenced also by the nonverbal interaction between the physician and the patient should be assessed carefully in clinical interventions.

Multiple factors figure the clinical and psychological characteristics in migraine, and it is not easy to assess all factors that take a part in its entirety. Further studies are needed for reserving sufficient data for expanding our knowledge and understanding about the psychological dynamics and their involvement in clinical aspects in migraine patients.

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