Eur Arch Psychiatry Clin Neurosci (1994) 243:328–339

European Archives of Psychiatry and Clinical Neuroscience

Typus melancholicus as a personality characteristic of migraine patients*

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Received 1 March 1993

Summary. The present study tests the hypothesis that persons suffering from migraine show personality traits of the "typus melancholicus" (melancholy type, Tellenbach). Ninety-six migraineurs were compared to 115 normal subjects, 36 neurotics, 38 psychosomatic patients, 52 patients suffering from other pain disorders and 38 unipolar depressives, matched for sex, age and social status. Several already standardized personality inventories were used (MP-T, D-S, FAPK, IAF, GT-S), as well as a questionnaire constructed especially to record typus-melancholicus traits in migraineurs. The results of univariate and multivariate methods of comparison clearly confirmed the hypothesis. In contrast to normal subjects, neurotic, psychosomatic and pain patients, migraineurs showed significantly higher levels of typus-melancholicus traits, whereas they did not differ from the unipolar depressives in this respect.

Key words: Typus melancholicus – Typus migraenicus-Fixation on tidiness and orderliness – Premorbid personality – Unipolar depression – Migraine – Personality inventories – Comparative class type

Introduction

More than 10 years of research and treatment of migraine patients by the author have shown repeatedly that persons suffering from migraine assembled of personality traits which, referring to views of U.H.Peters, can be labelled "typus migraenicus" [2–7]. This personality structure corresponds to Tellenbach's "typus melancholicus" which can often be found in unipolar depressives. A "fixation on tidiness and orderliness" is the typus-melancholicus' main feature which, in the form of an exaggerated sense of duty, governs all central areas of life. In situations that are marked by "includency" and "remanency" [8], it leads to acute clinical manifestations of depression. The particular way of being "fixed" is not in itself a sign of abnormality, however, it penetrates and dominates the type to a disproportionate extent. Additionally, in the core of its nature it amounts to an oversensitive conscientiousness that is aimed to avoiding even the least feeling of guilt. This orderliness especially pervades the professional area but also personal relationships. Consequently, the type, noticeable for a plain and clean outer apperance, reveals in everyday life a "premediated way of tidying up and keeping things in order". At work he demonstrates an above-average quantity and quality of performance which rests on reliability, loyality, assiduity and a sense of duty towards superiors and on helpfulness towards colleagues. At the same time he is always careful to avoid guilt, i.e. disruptions, frictions, conflicts and quarrels, if necessary be renouncing personal demands. The typus-melancholicus' more personal relationships are also characterized by avoidance of guilt and thus by an althogether marked friendliness that avoids all argument, by correctness and by keeping to conventions and norms. The firm and symbiotic ties to the family are expressed in an untiring and devoted care [8].

Although the specified qualities of the typus-melancholicus make him appear to be of a valuable nature, his fixation on orderliness carries the danger of provoking situations that may lead to a manifest depressive psychosis. Thus, his apparently positive properties eventually reveal a "pathological normality". The situations mentioned begin when the type is prevented from performing in his usual ordered ways. This leads on the one hand to the situation of "includency", i.e. being confined (= included) within the limits of possible orderliness which the type is trying to overcome, on the other hand to the situation of "remanency", i.e. remaining behind one's demands on oneself, which cannot be accepted, since the type feels compelled to overcome the situation his own efforts. The premelancholy situations of includency and remanency therefore prove to be a contradiction in the type's self, which he himself evokes on account of his predisposition. This self-contradiction creates the depressive-psychotic "priming situation" which is characterized by being caught in indecision and stagnation. This situation soon develops into a full-blown depressive psychosis, includ-

* The project, which was supported by funds from the DFG (Deutsche Forschungsgemeinschaft; German Research Association), was run between 1982 and 1990, using a total of 511 subjects, and the results were published in monograph form [1] in 1991

ing inhibition of performance to the point of stupor and being overwhelmed by guilt and inner distance to one's neighbour. This amounts to an irreparable debit, so that the psychosis proves to be the opposite of the way of life which typus-melancholicus usually attempts to realize and which his set-up forces him to put into effect. Therefore, the depressive psychosis is not to be seen as an intensification of the typus-melancholicus' traits but rather as a consequence of the type's and his defense mechanisms' breakdown. Thus, the psychosis does not occur because of but in spite of the existence of such a type. Peters consequently calls the typus-melancholicus a compensating nature, the psychodynamic function of which consists in defending and counterbalancing certain more or less unconscious mental powers, e.g. aggressions of thanatophobic fears [3, 6, 7].

For more than 20 years D. v. Zerssen and other authors have conducted empirical character analyses with specially constructed and validated scales for evaluation by self and others. They were able to psychometrically objectively Tellenbach's typus-melancholicus as the premorbid personality structure of unipolar depressives and to contrast it as a "comparative class type" [9] to normal subjects and to various groups of other mental disorders (particularly bipolar affective psychosis [9–22].

During the past 15 years of clinical experience, psychiatric personality research has now yielded a further personality type. This is the personality structure of migraine patients as found by U. H. Peters, which he called "typus migraenicus" due to a large correspondence to typus melancholicus [2–7]. Typus migraenicus does not so much concern the mental properties connected with an attack of migraine, but rather the migraine patients' complete life and personality history that should be assessed comprehensively and in detail. It is expressed in a fixation on orderliness, which manifests itself in the following areas of life:

1. in the outer appearance as marked accuracy of clothes and hair-style;
2. in the approach to everyday things as a continuous attempt to create and maintain order;
3. in professional life as an above-average quantity and quality of performance, which is supported not by ambition in the sense of aiming at social recognition and professional promotion, but by the endeavor to be blameless, conscientious, assiduous and reliable;
4. in interpersonal relations as conspicuous politeness, self-consciousness and helpfulness, which are governed by the attempt to avoid conflicts, especially loud quarrels;
5. in family relations as symbiotic attachment and devotion, expressed in an excess of active care.
6. Additionally, when attending to his daily duties, typus migraenicus in contrast to typus melancholicus shows a virtually inexhaustable activity and a marked lack of fatigue or exhaustion. These are usually accompanied by constant strain, felt physically in certain groups of muscles, as well as mentally, and connected to the experience of running out of time and of not being able to allow onself to pause and relax.

All these properties are socially desirable to a high degree, thus typus migraenicus seems virtually "hypernormal". Therefore, in analogy to typus melancholicus, the possible pathogenicity of typus migraenicus can be derived not from a phenomenological but from a psychodynamic point of view. The latter position shows that the traits of typus migraenicus have the task of preventing deeper mental processes that are perceived as threatening from rising into the migraine patient's consciousness. Peters calls the type "compensating character", due to the fact that its psychodynamic meaning is in this defense function. Now, certain situations may cause a breakdown of the defense, or compensating function and thus evoke an acute attack of migraine. These are situations, in which the typus migraenicus' own performance demands exceed his abilities or in which he is prevented from employing his excess of activity to achieve orderliness (e.g. at times of forced inactivity like the weekend, holidays or a stay at hospital). Such situations are comparable to includency and remanency in the case of typus melancholicus.

The threatening mental processes which typus migraenicus defends against are deep existential fears. Ultimately, they spring from the knowledge of the finiteness and imperfection of all being and usually take the form of thanatophobic fears which are, for example, expressed in the fear that a close person will die. The separation anxiety developing from these will then be blocked off, by means of the characteristic aversion to any kind of open discussions of differences, as well as the resulting overly large willingness to give in and make concessions in quarrels, and altogether put one's own opinions, wishes and needs behind others. For the same reason, the type experiences other persons' quarrels, in which he is not involved himself, as upsetting and therefore often acts as mediator in the circle of this family or friends. In order to successfully defend against his separation anxiety, typus migraenicus even has to block off his own aggressions, a task that, due to his psychodynamics, he can only manage incompletely. This is evidenced by an aggressive tone of the type's outward formally polite and correct behavior, so that he can be called peaceable but not gentle. This more or less sublime and usually verbal aggressiveness is directed outward's and thus, beneath the excess of activity, constitutes another difference to typus melancholicus, whose aggressiveness is directed inwards, i.e. at himself, and even that only during the depressive phase.

As long as typus migraenicus can fulfill his compensating function, he saves his carrier from the outbreak of migraine. It is imaginable that the compensating function may work a lifetime, however, this will probably be rare. Due to his psychodynamic structure, the type shows a tendency to end up in situtations where his defense mechanisms will break down, thus, this event will be the rule. The breakdown of the defense mechanisms will, however, not necessarily lead to a migraine attack. Possible consequences can also be biliary or renal colic, panic attacks or a depressive episode. On the other hand, migraine can occur without the type being present. Thus, the typus migraenicus is nosologically unspecific. It neither always nor exclusively afflicts migraine patients. Therefore, the concept has nothing to do with the typologically mistaken

notion of a migraine personality, that is, the assumption of a personality structure found always and only in migraineurs. Rather, the concept of typus migraenicus is completely in accordance with a typological approach and therefore represents a legitimate part of empirical personality research.

Similar to typus melancholicus, the following hypothesis is to be tested:

Typus migraenicus is a possibly premorbid typus-melancholicus structure predominantly found in migraineurs. It can also be objectified psychometrically and identified as a comparative class type in contrast to various other groups.

Hypotheses

In order to test the general hypothesis whether and to what extent migraine patients shows traits of typus migraenicus in their personality, the following specific hypothesis was put forward.

Concerning the extent of typus-migraenicus traits, the personality of migraine patients differs from that of

1. normal subjects,
2. neurotics,
3. psychosomatics,
4. other pain patients, but not from
5. unipolar depressives

Materials and methods

Samples

All subjects participated in the project voluntarily. After completion of all questionnaires the subjects were fully debriefed.

The following samples were chosen:

1. One hundred and twenty-one migraine patients, 94 of these from the Pain Center in Mainz, 27 from the Clinic of migraine, headache and circulation disturbance in Königstein/Ts. The subjects had to meet the criteria of a specially constructed migraine questionnaire (see below), had to be largely free from pain at the time of examination and were not to be visibly influenced by migraine and pain analgesics, respectively, or show symptoms of withdrawal.

2. Forty-two neurotics, 18 of these from the Clinic of Psychotherapy, 8 from the Clinic of Psychiatry both Marburg University and 16 from the General Hospital Ochsenzoll in Hamburg. In order to allow a group comparison with the psychosomatic and the pain patients, the subjects were chosen on the grounds that neither physical nor pain symptoms signified in their disorder. Thus, the disorders of the neurotic group consisted of 16 depressive neuroses (ICD: 300.4), 9 anxiety neuroses (ICD: 300.0), 8 hysterical neuroses without conversion symptoms (ICD: 300.1, 301.5), 5 obsessional neuroses (ICD: 300.3). Three schizoid personality disorders (ICD: 301.2), and 1 hypochondriac neurosis (ICD: 300.7). Zerssen could not find significant differences between the main forms of neuroses concerning the extent to which typus-melancholicus traits are represented [15, 19, 21].

3. Fifty psychosomatic patients, 26 of these from the Medical Center for Skin Diseases, 14 from the psychosomatic department both Marburg University, and 10 from a psychosomatically oriented general practioner's office. For differentiation from the group of pain patients, only those subjects were included who did not show notable pain symptoms. Of the patients 18 suffered from neurodermitis (ICD: 316.3, 691), 8 from bronchial asthma (ICD: 316, 493.9), 7 from acne vulgaris (ICD: 316.3, 706), 4 from a psychogenic eczema (ICD: 316.3, 692), 4 from heart phobia (ICD: 306.2), 1 from irritable colon (ICD: 316, 564) and 1 from Crohn's syndrome (ICD: 315, 555).

4. Sixty pain patients from the Mainz Pain Center excluding those with headaches in order to allow comparison to migraine patients. Forty-eight of the patients suffered from back pain, 6 from pain in their legs, 2 from pain in their shoulders and arms and 1 from breast amputation, abdominal and phantom-limb pain.

5. Forty unipolar depressives, 28 of these from the Clinic of Psychiatry, Marburg University and 12 from the Clinic of Psychiatry, Mainz University. They had to meet DIS criteria (see below) and were examined in an undisturbed interval.

6. The control ground comprised 198 normal persons. This part of the investigation was supported financially by the DFG (Deutsche Forschungsgemeinschaft, German research association) and included suitable subjects from Frankfurt/M. and Tübingen. Persons with considerable acute or chronic physical or mental disorders and resulting conditions, as well as deformities and handicaps were excluded.

General criteria of exclusion

Apart from criteria concerning the special disorder of a group of patients and their comparability to other groups, several criteria of exclusion were applied to the sample as a whole. These concerned the following subjects:

1. All non-German speakers.

2. All persons with an IQ lower than 80 (according to MWT-B, see below).

3. All persons (apart from the migraine patients) who more than twice a year suffered from headache which could not be explained by an infection or a light injury of the skull.

4. All persons (apart from the unipolar depressives) who had presently or in the past shown a "typical depressive episode" (according to DIS, see below).

5. All persons who, according to the way they answered the motivation items of the MP-T (see below), were obviously not ready to make correct responses. This was the case with 2 of the normal subjects, who had to be excluded from the sample. Thus, the group of normal subjects was reduced from 200 to 198.

In order to enable the registration of a possible influence of chronicity on personality, additionally:

6. all persons whose illness had not exceeded a duration of 5 years at the time of examination

were excluded from the groups of migraine, neurotic, psychosomatic and pain patients.

Materials

The hypotheses were examined by means of the following tests:

1. Demographic Questionnaire, developed in cooperation with Prof. Dr. H. U. Wittchen, Max-Planck-Institute for Psychiatry, München and Dr. I. Weber, Institute of Medical Sociology, Marburg University, designed to register personal data from central areas of life. In this study the collected data were age, sex, marital status, residential situation, education, occupation, job situation, future occupational perspectives and non-domestic social activities. The occupation was recorded by means of the "International Standard Classification of Occupations" (ISCO) which is also used in a Germany version by the Center of Surveys, Methods and Analyses (ZUMA, Mannheim) for standard demographical purposes. It is a classification system of occupations, developed 30 years ago by the International Labour Exchange in Geneva. Apart from the possibilities for international comparison, its advantage over other classification systems lies particularly in the fact that it constitutes the basis for a standardized international scale of occupational

prestige. Consequently, every occupation coded according to ISCO can be matched to a certain prestige score as an indicator of the degree of social status [23].

The prestige score, indicating the social status of every subject was thus determined. For all separated and divorced women their own occupation, for all (re-)married and widowed women their husband's occupation and for all men not yet employed and single women their father's occupation was taken as a basis of classification.

2. Munich Test of Personality (MP-T, Münchner Persönlichkeits-Test) by Zerssen [22, 24], a multidimensional inventory for assessment of the premorbid personality by self and others. Statements concerning habitual ways of behaving and experiencing are recorded on six scales and two control scales with 51 items altogether. These are:

1. Extraversion	E
2. Neuroticism	N
3. Frustration tolerance	F
4. Rigidity	R
5. Isolation tendencies	Is
6. Esoteric tendencies	Es
7. Schizoidism (5+6)	Sc
8. Orientation to norms	No
9. Motivation	Mo

The scales "isolation tendencies" and "esoteric tendencies" can be combined into a scale "schizoidism". Test takers are asked specifically to assess themselves and others retrospectively by judging a symptom-free phase or the time before the illness, so that premorbid personality traits can be registered.

This is the final form of the PPI (premoribd personality inventory), which was developed stepwise from preliminary forms. On several levels of its development, the test was used by its author and his co-workers in numerous investigations on the personality structure of the mentally ill, especially for objectification of typus melancholicus [11, 13, 14, 16, 17, 19, 20–22, 24].

Description of the MP-T scales

The scale "extraversion" is based on the main personality dimension constructed by Eysenck which he derived form C.G.Jung's typology. It comprises properties such as liveliness, gregariousness, assertiveness and the will to leadership.

The scale "neuroticism", also based on Eysenck's personality dimensions, records neurotic traits like lability, insecurity and dependency on emotional attention and social recognition.

Traits like emotional stability and insensitivity are registered by the scale "frustration tolerance".

The scale "rigidity" comprises traits such as obsessiveness, orientation to achievement, dependency on norms and perfectionism. It is derived from the scale "orderliness" in previous test forms. The factorial inhomogeneity of this scale had to be removed so that it now reflects only a partial but essential aspect of the complex structure of typus melancholicus.

The two scales "isolation tendency" and "esoteric tendencies" are two factorially homogenous subscales of the earlier "schizoid inclinations" scale. They record schizoid traits like solitariness, unsociability and unworldliness.

The control scale "orientation to norms" is a kind of "lie scale". The more neutral name was chosen since, in concrete cases, it is not always possible to decide whether the scale registers desired or real behavior.

The control scale "motivation" records the willingness to answer the actual test items honestly. It is a scale of exclusion, i.e. all subjects below a designated score will be excluded from further investigation.

The self-rated (sr) version of the MP-T (MP-T(sr)) and a relative-rated (rr) version (MP-T(rr)) were used. The latter contains the same items reformulated with one set for male and one for female subjects. This part of the investigation was carried out only with the groups of patients. For this purpose the test was presented to a relative (the spouse as a rule) or to a close acquaintance of the subject.

3. Typus migraenicus questonnaire (Fragebogen zur Erfassung des typus migraenicus, FETM), a self-report test developed by the author, meant to register the existence of typus-migraenicus traits as expected in migraine patients. The test consists of 54 items which are classed in the following scales:

1. Peaceableness	F
2. Shyness	S
3. Orientation to achievement	L
4. Helpfulness	H
5. Level of activity	A

The construction of FETM-items was based on the ways of experiencing and behaving which are characteristically expressed by migraine patients. These were derived from descriptions of typus migraencius in literature [2–7] and from personal clinical experience with patients suffering from migraine. The test originally contained 112 items and was reduced to 54 after tests of reliability (determination of item reliability with successive eliminiation of unsuitable items).

Description of the FETM scales

The FETM scales are meant to register to ways of experiencing and behaving which are characteristic of typus migraenicus in various spheres of life:

The scale "peaceableness" is concerned with the inhibition of expressing aggression and annoyance, i.e. the inability to translate experienced aggression into aggressive behavior. The score, therefore, is an indicator of the aversion to open quarrels.

The scale "shyness" records the inhibition of self-assertion, especially the inability to demand something from others or to accept attention or appreciation shown by others.

The scale "orientation to achievement" registers self-directed performance demands. These are characterized by a striving for high quality and quantity of the work to be done which is experienced as a duty to be executed personally, whereby a certain scheme of order is set up and maintained.

The scale "helpfulness" is concerned with the inability to refuse inappropriate demands from others while there is a concurrent fear of being left alone.

The scale "level of activity" records the attitudes towards inactivity vs activity. It is a measure of the desire for action and the connected state of tension with the experience of being pressed for time.

4. Diagnostic Interview Schedule (DIS, Version II), a fully standardized interview based on DSM-III for diagnosing or ruling out the existence of a past or present "major depressive episode" [25, 26]. Symptoms are coded on six levels:

Level 1: symptom does not exist.
Level 2: symptom exists but is too weak to be of psychiatric relevance.
Level 3: symptom exists but is always clearly connected to the intake of drugs, medication or alcohol.
Level 4: symptom exists but always as a result of physical illness.
Level 5: symptom exists and is relevant to psychiatric diagnosis.
Level 6: an existing, psychiatrically relevant symptom has already been the cause of seeing a doctor or another expert.

A "major depressive episode" is diagnosed when a minimum of symptoms combined in a certain group of questions is coded with levels 5 or 6. The coded symptoms have to appear concurrently at least in one episode and independently of a case of death.

In order to select only the unipolar depressives, subjects who also met the critiera of a "manic episode" were excluded. Subjects who had ever experienced mood-incongruent delusions or hallucinations and subjects whose symptoms could be taken as conse-

quences of an organically caused mental disorder were also excluded.

5. Depressiveness-Scale (D-S) by v. Zerssen [27, 28], a clinical questoinnaire for self-assessment of the present psychological impairment by depressive, anxious or irritable moods. The scale is an independent part of the Paranoid-Depressiveness Scale (PD-S/PSS'), developed to register subjective psychopathological conditions. It contains three motivation items and 16 actual depressiveness items. There are two parallel forms (D-S and D-S'), of which only D-S was used in the present study. However, the eight-item control scale "denial or illness" (Kv) was included, measuring the extent of experience of illness, insight into illness and dissimulation tendency.

6. Multiple-Choice Test of Intelligence (MWT-B) by Lehrl [29], a quick test of the general niveau of intelligence, largely independent of mental disorders. It consists of 37 lines of words with increasing difficulty. In each line the correct word amongst several nonsense words has to be identified. By means of a table the amount of correctly chosen words can be directly transferred into an IQ score. All subjects whose IQ score in this test was below 80 were excluded from the investigation.

7. Psychosomatic Condition Assessment Questionnaire (FAPK) by Koch [30], a self-report test for registering psychological factors contributing to the origin and maintenance of psychosomatic illnesses. The test contains altogether 202 items, classed into scales, which refer mainly to relation to reality, imagination, emotional emptiness of relationships, social functioning, aggressive ability, hypochondria and defense of sexual feelings.

8. Interaction-Anxiety-Questionnaire (IAF) by Becker [31], a test that records the individual level of anxiety in specific situations, i.e. relatively stable tendencies to experience anxiety in certain types of situations. There are 55 items in six scales, referring to anxiety-provoking situations, which on the one hand concern the area of physical intactness and the area of social recognition on the other.

9. Gießen-Test (GT-S) by Beckmann, Brähler and Richter [32], a personality test construed on a psychoanalytic basis, which records the self-description of one's mental structure an of relationships to the environment. It aims at revealing essential issues about the subjects' libidinous and aggressive impulses and their processing under the influence of Ego and Super-Ego, and about the resulting defense mechanisms. It is predominantly used with various types of neurotics. The test consists of 40 items classed in standard scales, referring to social resonance, dominance, control, basic mood, permeability and social power. Apart from the standard scales, the attitude scales M (registering the amount of zero answers) and E (registering the amount of extreme answers) were formed in order to record sterotyped answering patterns.

10. Gießen Inventory of Complaints (GBB) by Brähler and Scheer [33], a test for the registration of subjectively experienced physical complaints, consisting of 57 items classed in standard scales. The items refer to inclination to fatigue, stomach complaints, pain in the limbs, heart complaints, as well as intensity of complaints. For the interpretation of the test, it must be kept in mind that the scales do not mirror clinical symptoms of defined illnesses, but represent the self-description of average constellations of experienced physical complaints.

FAPK, IAF, GT-S and GBB were not used with the control group of normal subjects since these tests are sufficiently standardized and their norm scores are known. For organizational reasons the test version for evaluation by others of the MP-T was also not used with the normal controls.

11. Migraine Questionnaire (MEF), a questionnaire designed by the author for the registration of migraine. It contains altogether nine groups of symptoms that constitute the basis for diagnosing the presence of migraine. Additionally, the test records specific data on characteristics of the symptoms, criteria of exclusion, an operational definition of migraine and a scale for self-assessing the pain intensity of a migraine attack.

The classification and definition of migraine are based on critieria which Heyck and especially presently Soyka have set up after critical reconstruction of the guidelines for the classification of various forms of headache proposed by the American Ad hoc Committee on Classification of Headache in 1962 and reformulated by the Migraine and Headache Research Group of the International Federation of Neurology in 1969. Accordingly, migraine is an inclination to attacks of headaches, which occurs predominantly in women and appears to be familial. A substantial variability of locus, intensity, duration, frequency and accompanying symptoms can be observed. The attacks of pain mainly occur unilaterally and can coincide with vegetative symptoms such as sickness, vomiting and changes of mood. In the prodromal stage and during the actual attack, passing eye symptoms or focal cerebral symptoms may occur. They correlate with reversible vascular and biochemial processes and there are no pathological organic conditions [34]. Currently, according to the International Headache Society [34], the various types of migraine are classified as:

1. Common migraine

The most common course, marked by attacks of headache without episodic course and without neurological dysfunctions. Medium and strong attacks coincide with nausea and vomiting.

2. Classical migraine

Characterized by attacks of headache with short neurological dysfunctions, e.g. visual, sensory, motor or speech impairments, which either precede the actual attacks like a phasic prodromal stage or accompany its course. In addition, nausea and vomiting can occur. This group comprises the ophthalmic migraine, during which visual disturbances are developed, – typically a scintillating scotoma, – and the migraine accompagnee with transitory sensory or motor impairment or with speech disturbances.

3. Complicated migraine

Where the neurological dysfunction can outlast the actual pain episode by hours or days. This group comprises the basilaric and the ophthalmoplegic migraine.

In the diagnosis of migraine, two factors contribute to the decisive importance of the anamnestic assessment of locus, quality, intensity, frequency and chronological course of the headache as well as its concomitants, releasing factors and familial occurrence. First it is not possible to assess specific organic conditions outside the pain attack and second the neurological symptoms and all signs of vasomotoric dysregulation, visible during an attack, are passing and nosologically unspecific. Thus, a migraine may only be diagnosed in the presence of recurring attacks of pain, usually persisting for several hours, and without ascertainable pathological changes of the organs. The diagnosis is supported by a number of additional symptoms, some of them considered "hard" like hemicrania, episodic course of attack, vomiting, scintillating scotoma, focal cerebral symptoms, throbbing, pulsating or hammering pain and familial occurrence; some relatively mild, like nausea, vertigo, sensitivity to light and noise, onset of attack when waking after a night rest and subsidence after sleeping.

Besides being subjected to general criteria of exclusion, the migraine patients were not admitted into the sample when they showed one of the following: a relevant neurological illness, an epileptic EEG-pattern, other significant physical illnesses, e.g. of the skull, the cervical spine or the paranasal sinus, as well as an internal system disease or a carcinoma. Also excluded were migraine patients whose pain attacks occurred less than once a month, who additionally suffered from other pain syndromes, and who already received psychotherapeutical treatment.

Statistical procedures

Statistical data processing was carried out with the statistical package SPSS 9 in the Institute of Medico-Biological Statistics and Documentation, Marburg University. The following statstical procedures were applied:

1. Matching of the different groups of age, sex, and social status.

2. Kruskal and Wallis H-test for the comparison of more than two groups (comparison of three groups) [35].

3. Wilcoxon, Mann and Whitney U-test for comparison of two groups [35].

4. Wilcoxon-test for the comparison of two dependent groups [35].

5. Chi-square test for the comparison of more than two groups by a nominal variable [35].

6. Analysis of discriminance for determining those features that differentiate between migraine patients and other groups, i.e. for determining the comparative class type of migraineurs in contrast to the groups of comparison [36].

An error probability of $a = 5\%$ for a two-sided problem is used with all statistical tests. When a test is used n times on the same data, the level of significance is adjusted with the formula $a^* = a/n$ [5].

Differences between groups are rated as significant when the results to not exceed the adjusted limit of significance. Thus, a result below the

0.1% level is highly significant	(***)
1% level is very significant	(**)
5% level is significant	(*)

A result is considered nearly significant ((*)) when its non-adjusted level of significance is at least 5%.

To test these hypotheses, the migraineurs were first compared with the normal subjects and then both groups together were compared with one of each of the other groups. Afterwards the resulting tripartite groups were additionally compared with one another in pairs, in order to search more specifically for possible significant differences. Unfortunately, a primary comparison study embracing all the study groups were not possible because the considerable differences within the groups as regards age, sex and social status would have reduced their size to a statistically unacceptable magnitude.

For this reason, the following groups of comparison were formed, each matched for age, sex and social status.

1. Normal subjects ($N = 115$)
   – migraineurs ($N = 96$)
2. Normal subjects ($N = 52$)
   – migraineurs ($N = 40$) – neurotics ($N = 36$)
3. Normal subjects ($N = 56$)
   – migraineurs ($N = 43$) – psychosomatics ($N = 38$)
4. Normal subjects ($N = 78$)
   – migraineurs ($N = 61$) – pain patients ($N = 52$)
5. Normal subjects ($N = 48$)
   – migraineurs ($N = 45$) – unipolar depressives ($N = 38$)

These groups of comparison were then characterized with respect to the individual test results, always comparing the personality of migraineurs to that of the other groups, as stated in the hypotheses. First of all, the results from the univariate methods (H-test, U-test, Wilcoxon-test) were taken as a basis of comparison; then the factors differentiating between groups were determined via a discriminant analysis, in order to reduce the amount of varying discriminant properties to a minimum of variables, comprised in the discriminant function, with as little loss of information as possible.

This was achieved by means of the stepwise method. Variables are introduced into the discriminant function one after the other, in the order of their discriminating power which was defined as the minimization of Wilks' lambda (= maximizing the multivariate F-value). Also, an F-value of at least 3.0 was determined as critical value for a variable to be entered into the discriminant function (F-to-enter) and an F-value of up to 2.9 for removal of a variable (F-to-remove) [36].

This procedure aims at showing which test scales most clearly independently discriminate between groups; therefore, it is particulary suitable to determine the comparative class type of each group of patients vs. normal controls and of migraine patients vs. each other group of patients. The first discriminant analysis was carried out on the basis of MP-T(sr) and FETM scales, since both tests had been administered to all groups, i.e. patients and normal controls. Further discriminant analyses were based on tests that were only used with groups of patients and thus only allow to analyse differences between these. Therefore, the second discriminant analysis included the MP-T(sr) and MP-T(rr) scales, in order to determine the discriminating power of self-assessment vs. evaluating by others. The third discriminant analysis additionally included the scales of FETM, D-S(Kv), FAPK, IAF and GT-S in order to identify, on the basis of all personality tests, those scales with a relevant contribution to the distinction of groups.

Relevant results and their interpretation

For the sake of clarity, the following only shows the significant results from the two-group comparisons (U-test).

Normal subjects – migraineurs

The scores (mean ranks) of migraine patients and those of normal subjects show the contrasts in Table 1.

The results indicate that migraine patients, in contrast to normal subjects, show highly significantly increased scores on all scales objectifying typus-melancholicus or typus-migraenicus traits (MP-T rigidity and all FETM scales). They also show neurotic character traits (nearly significant lower MP-T extraversion, highly significant lower MP-T frustration tolerance, highly significant higher MP-T neuroticism). Whereas the latter trends had already been found in numerous earlier studies on migraine patients by means of various testing procedures, the structures of typus melancholicus have so far not been psychometrically objectified. The reasons for this lie in the fact that previous personality research with migraine patient has not considered Tellenbach's typus-melancholicus concept, and thus tests allowing to objectify this concept were not administered and constructed, respectively.

Table 1. Results from the two-group comparison (U-test): normal subjects – migraineurs

	Normals	Migraineurs	
In MP-T (sr):			
Frustration tolerance	127.43	80.33	$P = 0.00\%$**
Extraversion	115.07	95.13	$P = 1.80\%$ (*)
Neuroticism	87.45	128.22	$P = 0.00\%$***
Rigidity	85.07	131.07	$P = 0.00\%$***
In FETM:			
Peaceableness	81.01	135.93	$P = 0.00\%$***
Shyness	91.15	123.79	$P = 0.01\%$***
Orientation to achievement	86.14	129.79	$P = 0.00\%$***
Helpfulness	88.23	127.29	$P = 0.00\%$***
Level of activity	78.67	138.73	$P = 0.00\%$***
In D-S:			
Depressiveness	80.17	136.95	$P = 0.00\%$***
Dissimulation	115.37	94.77	$P = 1.42\%$ (*)

Abbreviations: MP-T: Munich Personality Test; FETM: Fragebogen zur Erfassung des Typus Migraenicus, Typus Migraencus Questionnaire; D-S: Depressiveness Scale. The exact definitions and scales are given under *Materials*.

Table 2. Results from stepwise discriminant analysis: normal subjects – migraineurs

Scale[a]	F-to-remove	Normal subjects	Migraineurs	*P*
FETM-A	19.4	–	+	0.00%
FETM-F	13.2	–	+	0.00%
FETM-L	8.9	–	+	0.00%

[a] Abbreviations explained in Table 1 and under *Materials*

Individuals traits, e.g. perfectionism, ambition, obsessiveness or inability to handle aggression, more or less pointing in that direction had already been described and verified through various tests by H.G.Wolff and numerous succeeding authors in the late 1930s. However, these were generally interpreted as neurotic structures or psychosomatic conditions but not as the differing phenomenology and psychodynamics of typus melancholicus.

The increased extent of typus-melancholicus traits in migraineurs is quite in agreement with their demographically determined inclination to live in a steady relationship. In this they score higher than all other groups.

The migraineurs' increased subjective impairment by depressive symptoms can be viewed as a sign of the presence of residual symptoms which extent into the pain-free interval. The relatively high dissimulation could be interpreted as a consequence of the typus melancholicus' characteristic urge towards activity and good performance, connected with the inclination to put his own wants and feelings last.

Table 2 shows the results from the stepwise discriminant analysis on the basis of MP-T(sr) and FETM scales.

The FETM scales "level of activity", "peaceableness" and "orientation to achievement" together can demonstrate the main aspects of the differences between normal subjects and migraine patients. The normal subjects are characterized by low and the migraineurs by high scores. The scale "level of activity" possesses the largest individual discriminant power, followed by "peaceableness" and then "orientation to achievement". The high levels of significance indicate a high differentiating power. In contrast, the other FETM scales and all MP-T scales do not relevantly add to the differentiation between normal subjects and migraine patients.

This means that the difference between normal subjects and migraineurs is mainly represented by scales objectifying typus-migraenicus traits. In contrast, the neurotic characteristics, evident in the univariate procedures, apparently do not contribute to the differentiation. The most obvious difference is the migraineurs' increased level of activity, i.e. their restless desire for action, connected with permanent tension, inability to relax and the experience of running out of time. This condition confirms the clinical description of typus migraenicus, according to which his inexhaustable activity represents a particularly marked characteristic, even in comparison to typus melancholicus. Additionally, the migraine patients differ from normal subjects in increased peaceableness, i.e. the inability to translate impulses of aggression and annoyance into appropriate behaviors, e.g. open and loud quarrels. This condition also confirms the clinical concept of typus migraenicus, insofar as the inhibition of aggression represents a basic process in the typus migraenicus' psychodynamics. This inhibition is a consequence of deep-seated existential fears and of their circular self-reinforcement resulting from inefficient defense mechanisms. Lastly, the migraineurs differ from normal subjects with respect to an increased orientation to achievement. This is expressed by an excessive striving for as comprehensive and as excellent a performance as possible, which springs not from an aspiration for social recognition but from experiencing a debt of duty towards their fellow men. It is oriented according to societal norms and embedded in a certain pattern of order. This finding confirms central clinical aspects of the "fixation to orderliness" which typus migraenicus in his core has in common with typus melancholicus.

As the discriminant analysis aids to determine variables which essentially differentiate between the compared groups, these variables can be used to constitute the comparative class type. Accordingly, the comparative class type of migraineurs in contrast to normal subjects is determined by an increased extent of the typus-migraenicus traits objectified in the FETM scales "level of activity", "peaceableness" and "orientation to achievement".

Table 3. Results from the two-group comparison (*U*-test): migraineurs – neurotics

	Migraineurs	Neurotics	
In MP-T (sr)[a]:			
Neuroticism	31.54	46.24	$P = 0.37\%$*
Isolation tendencies	30.65	47.27	$P = 0.10\%$**
Esoteric tendencies	31.64	46.13	$P = 0.39\%$ (*)
Schizoidism (5+6)	29.35	48.67	$P = 0.01\%$***
In MP-T (rr)[a]:			
Neuroticism	30.64	42.53	$P = 1.55\%$ (*)
Frustration tolerance	40.83	30.11	$P = 2.80\%$ (*)
Rigidity	45.00	25.03	$P = 0.00\%$***
Isolation tendencies	28.32	45.36	$P = 0.05\%$**
Schizoidism (5+6)	27.71	46.11	$P = 0.02\%$***
Orientation to norms	41.09	29.80	$P = 2.06\%$ (*)
In FETM[a]:			
Orientation to achievement	44.32	32.03	$P = 1.50\%$ (*)
In D-S[a]:			
Depressiveness	30.59	47.29	$P = 0.10\%$**

[a] Abbreviations explained in Table 1 and under *Materials*

Migraineurs – neurotics

Contrasted to neurotics, the migraineurs score as follows in Table 3 (mean ranks are presented).

Even though the migraine patients show strong neurotic character traits when compared to normal subjects,

Table 4. Results from stepwise discriminant analysis: migraineurs – neurotics

Scale[a]	F-to-remove	Migraineurs	Neurotics	*P*
MP-T-Is	8.3	–	+	0.08%
FETM-L	7.6	+	–	0.01%
FETM-N	5.0	–	+	0.00%

[a] Abbreviations explained in Table 1 and under *Materials*

these traits are weaker in comparison to neurotics. This is consistent with the migraineurs' likewise lowered inclination to schizoidism, which is increased especially in neurotics as other investigations also have shown [10, 11, 15, 17, 19–21]. Additionally, the migraineurs are characterized by a stronger fixation on a self-imposed performance demand which they experience as a duty in the sense of typus melancholicus and typus migraenicus, respectively. When objectified by MP-T(rr)-R, they are attributed this trait by others rather than themselves. A closer analysis of this finding reveals that, when evaluated by others, neurotics score significantly lower on the rigidity scale than when evaluating themselves, whereas migraineurs show no difference in this respect.

Thus, the neurotics score high when self-evaluating but not when others judge their rigidity; in contrast, migraineurs score high both on self-evaluation and evaluation of their rigidity by others (compare [24]). This may indicate that the neurotics' self-evaluation is distorted in the direction of social desirability, while this does not apply to migraineurs. Accordingly, the latter's higher values on the MP-T(rr) scale "orientation to norms" should be interpreted as signs of real rather than socially desired behaviours. Apparently, neurotics feel that much impaired by the symptoms of their disorder that they show a higher level of depressiveness.

The discriminant analysis on the basis of MP-T(sr) and FETM scales shows the results in Table 4.

The table reveals that migraine patients differ from neurotics mainly with respect to a decreased level of solitariness, unsociability, insecurity and dependency on emotional attention on the one hand and an increased level of self-imposed performance demand in the sense of typus-migraenicus on the other hand. This personality profile also constitutes their comparative class type in contrast to the neurotics. The discriminant analysis on the basis of MP-T(sr) and MP-T(rr) fully confirms this result. It is noticeable that, on the whole, the differentiation between the groups is achieved by those versions of the scales in which patients are evaluated by others. Thus, other persons' assessment yields a better differentiation between neurotics and migraineurs that their own, a finding that indicates the usefulness of evaluation by others as a check of self-evaluation. Regarding evaluation by others it is noticeable that first of all the increase in typus-melancholicus traits as objectified by MP-T(rr) differentiates between migraine patients and neurotics, and only then the decrease in neurotic traits and inclination to schizoidism. In the discriminant analysis on the basis of all tests, the MP-T(rr)-rigidity scale also demonstrates a first-rate power of differentiation. Thus, out of all personality traits objectified in the test scales used, the typus-melancholicus traits discriminate most between the two groups of patients.

Table 5. Results from the two-group comparison (*U*-test): migraineurs – psychosomatics

	Migraineurs	Psychosomatics	
In MP-T (sr)[a]:			
Neuroticism	47.29	33.88	$P = 1.03\%$ (*)
Rigidity	46.73	34.51	$P = 1.94\%$ (*)
Frustration tolerance	33.98	48.95	$P = 0.41\%$*
In MP-T (rr)[a]:			
Rigidity	45.65	34.80	$P = 3.46\%$ (*)
Frustration tolerance	33.46	48.28	$P = 0.43\%$*
In FETM[a]:			
Level of activity	51.03	29.64	$P = 0.00\%$***
Peaceableness	48.51	32.50	$P = 0.22\%$*
Shyness	48.40	32.63	$P = 0.26\%$*
Helpfulness	46.72	34.53	$P = 1.95\%$ (*)
In D-S[a]:			
Depressiveness	46.06	35.28	$P = 3.91\%$*

[a] Abbreviations explained in Table 1 and under *Materials*

Table 6. Results from stepwise discriminant analysis: migraineurs – psychosomatics

Scale[a]	F-to-remove	Migraineurs	Psychosomatics	*P*
FETM-A	15.3	+	–	0.01%
FETM-L	3.7	+	–	0.01%

[a] Abbreviations explained in Table 1 and under *Materials*

Migraineurs – psychosomatics

Compared to psychosomatics migraineurs show the scores (mean rank) in Table 5.

The group comparison with univariate methods show that migraine patients in contrast to psychosomatics are characterized by stronger neurotics traits, as well as by traits in the sense of typus melancholicus and migraenicus, respectively. Thus, they exhibit a similar personality profile as when contrasted to normal subjects, a result that could be expected due to the fact that, with respect to their personality, psychosomatics hardly differ from normal subjects.

The descriminant analysis on the basis of MP-T(sr) and FETM scales yields Table 6.

The result from the univariate methods is emphasized in that now migraineurs differ from psychosomatics only in an increased extent of "level of activity" and "orientation to achievement", two typus-migraenicus traits objectified in the FETM, which consequently constitute the

Table 7. Results from the two-group comparison (*U*-test): migraineurs – pain patients

	Migraineurs	Pain patients	
In MP-T (sr)[a]:			
Neuroticism	70.15	41.58	$P = 0.00\%$***
Rigidity	63.07	49.88	$P = 3.26\%$ (*)
Frustration tolerance	44.43	71.74	$P = 0.00\%$***
In MP-T (rr)[a]:			
Neuroticism	57.49	38.95	$P = 0.16\%$**
Extraversion	42.42	61.17	$P = 0.14\%$**
Frustration tolerance	40.77	63.61	$P = 0.01\%$***
In FETM[a]:			
Peaceableness	70.35	41.34	$P = 0.00\%$***
Helpfulness	66.16	46.20	$P = 0.13\%$**
Level of activity	67.62	44.54	$P = 0.02\%$**
Shyness	63.75	49.09	$P = 1.75\%$ (*)
Orientation of achievement	64.30	48.43	$P = 1.00\%$ (*)
In D-S[a]:			
Depressiveness	63.89	48.91	$P = 1.51\%$ (*)
Dissimulation	49.65	65.63	$P = 0.94\%$ (*)

[a] Abbreviations explained in Table 1 and under *Materials*

comparative class type. In contrast, the neurotic traits, similar to when compared to normal subjects, do not add to the differentiation.

The discriminant analysis on the basis of MP-T(sr) and MP-T(rr) again shows the superior discriminant power of evaluation by others in comparison to self-evalution. The discriminant analysis using all applied tests also demonstrates that migraineurs differ from psychosomatics mainly in an increased level of typus-melancholicus and -migraenicus traits, respectively.

Migraineurs – pain patients

The differences of mean rank for the comparison of pain patients and migraineurs are shown in Table 7.

Altogether, the univariate methods of comparison show that migraineurs also differ from pain patients with respect to an increased level of neurotic traits. This condition can be derived from the fact that pain patients in contrast to normal subjects not only do not yield marked neurotic properties, but rather demonstrate a positive self-evaluation and the ability to enter into and maintain heterosexual relationships. This result, being in accordance with other recent investigations, indicates that the phenomenon of pain as such apparently does not coincide with a specific personality structure. Additionally, the migraineurs show strong typus-melancholicus and -migraenicus traits, although the pain patients already demonstrate a higher level of these traits when compared to normal subjects.

The discriminant analysis on the basis of MP-T(sr) and FETM scales largely confirms the results from the univariate methods (see Table 8).

Table 8. Results from stepwise discriminant analysis: migraineurs – pain patients

Scale[a]	F-to-remove	Migraineurs	Pain patients	*P*
MP-T-N	10.1	+	–	0.00%
FETM-F	8.9	+	–	0.00%
FETM-Es	3.4	–	+	0.00%

[a] Abbreviations explained in Table 1 and under *Materials*

Table 9. Differences in the two-group comparison (*U*-test) between unipolar depressives and migraineurs

In MP-T (sr):	None
In MP-T (rr):	None
In FETM:	None
In D-S:	None

Accordingly, migraineurs differ from pain patients mainly in an increased level of neurotic and typus-migraenicus traits as objectified in the MP-T neuroticism scale and the FETM "peaceableness" scale, respectively. Another contribution to discrimination between the two groups is made by an increased unworldliness as objectified in the MP-T scale "esoteric tendencies". This personality profile also constitutes the comparative class type of migraine as opposed to pain patients. The discriminant analysis on the basis of MP-T(sr) and MPT(rr) demonstrates that self-evaluation contributes more to differentiation between the two groups than evaluation by others. The discriminant analysis on the basis of all tests shows a difference between migraineurs and pain patients that rests mainly on increased neurotic traits rather than on typus-melancholicus and -migraenicus traits, respectively.

Migraineurs – unipolar depressives

Contrasted to unipolar depressives, migraineurs show differences (see Table 9).

As demonstrated in the univariate methods of comparison, no relevant difference could be found between migraineurs and depressives concerning their personality, especially with respect to typus-melancholicus and -migraenicus traits. Neither did the discriminant analysis on the basis of MP-T(sr) and FETM scales yield a clear differentiation between migraineurs and unipolar depressives. Consequently, the constitution of a comparative class type is not possible. Only the discriminant analysis based on all tests shows that migraineurs differ from unipolar depressives at the most in a stronger inhibition of impulses of aggression and annoyance, which go along with the strong need to outwardly work off such drives. Likewise, migraineurs show a higher desire for action, connected with a state of permanent tension and the experience of being pressed for time. This finding is in accordance with clinical differentiation between typus migraenicus and typus melancolicus.

Concerning the connection between migraine and unipolar depression, these results indicate that in both

cases the patients possess nearly the same typus-melancholicus and -migraenicus traits, respectively without the two disorders coinciding to an adequate extent. The common properties of the personality structure of migraineurs and unipolar depressives thus do not necessarily show on the level of clinical symptoms. The manifestation of these apparently also depends on other factors which differ for migraine and unipolar depression. Therefore, the common personality structures of migraineurs and unipolar depressives is at the most one link in the chain of conditions leading to the manifestation of the disorder. In this context one must also assume premorbidity, which, however, may be taken as adequately ensured in the case of unipolar depression and as at least possible in the case of migraine.

Conclusions

Starting from the typological characterization of the groups of comparison the above hypothesis can now be commented as follows:

Migraine patients differ from normal subjects, neurotics, psychosomatics and patients with other pain syndromes but not from unipolar depressives in an increased extent of typus-migraenicus traits in their personality.

Thus, the hypotheses are largely confirmed.

However, the size and extent of the difference varies as the univariate methods demonstrate on the respective scales in MP-T and FETM. According to these, migraineurs contrasted to normal subjects show highly significantly increased typus-migraenicus traits on all scales. Contrasted to neurotics, psychosomatics and other pain patients they show nearly to highly significant increases on varying numbers of scales. Contrasted to unipolar depressives they show no differences in typus-migraenicus traits. The multivariate methods also yield an increased level of typus-migraenicus traits of migraine patients in contrast to all other groups of comparison apart from the unipolar depressives. This is indicated by the fact that the comparative class type, sometimes in addition to other personality traits, always contains typus-migraenicus traits which are, however, objectified by a varying number of scales.

Due to a largely absent correlation between duration of migraine and the corresponding MP-T rigidity scores as well as the FETM scales L, H and A, a premorbid formation of this structure seems feasible. Typus migraenicus, as derived from clinical observation, can now be considered psychometrically largely confirmed through the present investigation.

This typological characteristic of migraineurs means that they resemble neurotics, psychosomatics and other pain patients far less in their personality than previous studies have implicated. The impressively high correspondence to the personality profile of unipolar depressives, however, can be viewed as a proof of nosological unspecificity of typus melancholicus. Apparently, this type cannot only be found in depressives but also in migraine patients and probably in other groups of patients as well. It seems that the term "typus melancholicus" is applied to a personality structure which was first comprehensively verified in unipolar depressives but can, however, seemingly not be restricted to this group of patients. This fact should be taken into account and – according to a suggestion by Blankenburg [37] – the term "typus melancholicus" should be replaced by the nosologically neutral term "typus Tellenbach".

Therapeutical implications

In the face of the results from this study it appears appropriate to complement the traditional predominant use of drugs in migraine therapy, administered in order to interrupt and prevent an attack, by a psychodynamic concept. It is possible to develop procedures from this concept which can lower the frequency and intensity of migraine attacks in the long run to such an extent that the permanent intake of migraine, and other analgesics will not be necessary any more and their considerable side-effects will disappear. If this kind of psychodynamic therapy proceeds from the assumption of a typus-melancholicus structure in migraineurs, its primary goal has to consist in reducing and correcting the inner fixation and rigidity of the type by a slow stepwise change of psychodynamic conditions, so much that the outbreak of migraine symptoms loses its psychodynamic ground. This goal requires an adaptation of the migraineurs' deeply rooted coping strategies. Accordingly, the therapy will altogether take several months. Ideally, such an adaptation can only be started with inpatient treatment in an appropriate clinic. This is the only way the distance, necessary for tackling the psychodynamic problems, can be set up and maintained, since otherwise typus migraenicus is typically entangled in manifold stresses. Previous experience has shown that to achieve this a hospitalization of about 6 weeks is sufficient.

The actual course of an inpatient psychosomatic migraine therapy as it has been practised our clinic for years, consists of three more or less successive phases:

1. Withdrawal of migraine analgesics
2. Reconstruction of the biographical history with detailed extraction of the psychodynamic constellations, characteristic of typus migraenicus and their evidence in the individual situations of life.
3. Relaxation treatment with supporting psychotherapeutical and physical procedures.

Phase 1. First requirement is the withdrawal from migraine analgesics which have often been taken in considerable amount for years. Only after their effects have been stopped is it possible to gain access to the migraine patient's personality. Further, in the course of time, the chronic intake of migraine analgesics leads to an increase of pain, so that in many cases their removal alone can achieve a significant relief of complaints. Due to the unpleasant mental and physical side-effects of withdrawal and the connected initial provocation of attacks of pain, this beginning phase of therapy can sometimes prove to be rather difficult. Especially as withdrawal and staying in

a ward, force the patient to considerable inactivity. Therefore, in the initial phase of withdrawal the patients often show more or less explicit verbal aggression towards the therapist and his treatment methods. In accordance with typus migraenicus' desire for action, he mostly complains of not enough being done. The therapist's correct response consists of accepting the subjective legitimacy of the complaints, but also of trying to make the necessity of his treatment methods clear to the patient. The therapist himself has to remain completely free from aggression and sometimes, in order to avoid mobilizing separation anxiety and feelings of guilt, he even has to assure the patient that in spite of his (the patient's) aggressions, the therapist will not deny him therapeutical help. The danger of the patient discontinuing treatment is particularly large in this stage of therapy. In some cases it can be attempted to alleviate withdrawal symptoms by donation of weakly potent neuroleptics. Sometimes, however, it will not be avoidable to consent to the patient's desire for migraine analgesics, arranging the continued intake of a constantly decreasing dose. This has to be accompanied by a reference to the prolongation of the withdrawal phase and consequently the inpatient treatment. Normally, the phase of withdrawal is overcome after 12–14 days. Often, for the first time, the patients experience a distinct alleviation of pain and a pleasant relaxation which they have not known for a long time.

Phase 2. The reconstruction of the biographical history can be started in this emotionally positive atmosphere. It is carried out in daily sessions lasting about 40 min and aims at investigating the individual pathogenic situations characteristic of typus migraenicus, as they have constituted themselves from earliest childhood up to the present. Usually, these are situations or repetitions of situations in which the migraine patients experienced overpowering separation anxiety and feelings of guilt, rendering them unable to behave in such a way as would have been necessary for the development of healthy inner autonomy and emotional freedom. The resulting positive experience of one's own value is basic to the development of adequate coping strategies. Psychodynamically, this reaction, characteristic to typus migraenicus, often roots in undigested early childhood experiences of the death of relations or other close persons. It is, therefore, the task of the therapist to enable the migraine patient to experience aggressions without guilt and anxiety. The application of an assertiveness training as a special form of behaviour therapy can be very helpful. The therapist, however, and other ward personnel must repeatedly show a constant psychotherapeutic attitude towards the migraine patient, in order to provide him with the opportunity to express aggressive impulses verbally and mimically without sanctioning consequences. This gradually enables the patient to establish emotional relationship to his environment in which, if necessary, he can react aggressively without having to fear that other's will break off the relationship. This enables him to achieve a stepwise decrease of his separation and guilt anxieties and thus a gradual regression of his rigid fixation on the avoidance of guilt and quarrel. It is obvious that these structural changes, constituting the core of the psychodynamic therapy of migraine, take months or years. During the inpatient treatment only the beginnings can be visualized.

Phase 3. When the therapy has initiated these processes, the relaxation treatment can be started. This comprises psycho- and physiotherapeutic measures. The psychotherapeutic methods of relaxation focus on autogenic training. In daily exercises the migraine patient has to learn the basic steps, consisting of the generalized experience of heaviness and warmth. Once these are mastered, they can form the basis of an additional behavior therapy aiming specifically at the situational anxieties often afflicting migraineurs. For example, systematic desensitization can be applied to reduce these anxieties. The physical relaxation techniques are mainly body exercise, foulage and red light radiotherapy, all of them aiming at a relaxation of the migraine patient's musculature which has a tendency to tension in typical locations. Thus, at the beginning of an attack of migraine often spindle-shaped muscle tensions or myogeloses sensitive to pressure can be found in the sternocleido-mastoid on the painful side, just below its attachment to the mastoid process. Myogeloses can especially be found in the course of the longissimus muscles down to their attachment to the iliac crest. Previous experience has shown that foulage of these sets of muscles for about 20 min is often able to intercept a beginning attack of migraine, whereas foulage at a later point of the attack or in the interval is practically useless. These observations indicate that tensions of these groups of muscles may play a role in the genesis of the migraine pain. The effectiveness of foulage can be increased by a daily 10- to 15-min red light radiotherapy and by daily body exercises aimed especially at relaxing the musculature of shoulders and back of the neck.

The inpatient treatment can be terminated when a distinct and constant decrease of migraine symptoms can be observed. The patient should be informed in advance that this usually takes about 6 weeks, in order to allow him to take this period of time into account.

The consolidation and expansion of what has been achieved by the inpatient treatment requires a follow-up outpatient psychotherapy of several months. At first the sessions will take place once a week, later once every 3–5 weeks. It is the task of the outpatient therapy to promote the initiated psychodynamic regression of typus-migraenicus traits by helping the patient to learn and practise coping strategies which enable him to live migraine free as far as possible. At least the pain has to be reduced to an extent that renders the intake of drugs unnecessary.

The psychosomatic migraine therapy we conduct has not yet been evaluated. However, catamnestic investigations [38] in the early phase of the therapy concept have shown that even after an average 3 years the treated migraineurs admitted to a 50% reduction of symptoms and an 87% reduction of migraine and other analgesics. Thus, the described psychosomatic therapy appears to constitute a useful addition to traditional concepts of migraine therapy.

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