

ORIGINAL ARTICLE

Psychological status of patients with chronic urticaria

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ABSTRACT

Although chronic urticaria is the most common cutaneous disorder seen in our outpatient allergy clinics, to our knowledge, no study of psychiatric morbidity in allergy departments has been carried out in our country. For the present study, we used the Minnesota Multiphasic Personality Inventory (MMPI) to evaluate the personality traits and psychological status of patients with chronic idiopathic urticaria (CIU). Fifty-nine outpatients with CIU and 59 healthy control subjects were enrolled in the study. Patients were included if no specific cause for their urticaria could be identified by detailed history and appropriate investigations. Psychiatric evaluation for all patients and controls was conducted at the Department of Psychiatry by using MMPI. Analysis of the MMPI profile showed that the scores for hypochondriasis, depression, hysteria, psychopathic deviance, paranoia, psychasthenia, schizophrenia, and social introversion were higher in patients with CIU compared to the control group ($P < 0.05$). The mean score of hysteria was significantly higher in women. There were no significant correlations between the scores of MMPI and duration of the disease. These data indicate that our patients with CIU seem to have more depressive, hysteric, touchy and suspicious personality traits with hypochondriac tendencies and in more conflict with their social environment. Attitudes such as perfectionism, need for approval, external control and need to be loved were also characteristics of the patient group. We believe that psychological status should be considered for effective management of patients with CIU.

Key words: chronic urticaria, Minnesota Multiphasic Personality Inventory (MMPI)

INTRODUCTION

Chronic urticaria (CU) can be defined as the daily or almost daily occurrence of transitory and itchy wheals for at least 6 weeks. It is a common and extremely distressing disorder causing severe occupational, social, personal and domestic disability.¹ It remains a major health problem in terms of etiology, investigation and management.² The etiological reason cannot be found in many cases and the disease is defined as chronic idiopathic urticaria (CIU). As a chronic and distressing disease, it would not be a surprise to find some psychological disorders in these patients. In keeping with that, the associations between CIU and psychological status of the patients have been shown in previous studies,

which were done mostly in industrialized countries.^{3–7} These studies suggested that the incidence of clinically significant depression and anxiety in patients with CU is high.⁵ Although patients with CIU are among the most commonly seen patients in our daily practice, to our knowledge, no study on the psychological functioning of patients with CIU in allergy outpatient settings have been carried out in Turkey. It is well known that cultural factors play a major role in psychiatric epidemiology and studies from different geographical parts of the world reveal the influence of cultural variables on psychiatric syndromes.^{8,9} We, therefore, aimed to evaluate the psychological status of our patients, mostly living in a traditional manner, by using the Minnesota Multiphasic Personality Inventory (MMPI) and to

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Received 26 October 2006; accepted 8 June 2006

determine which variables were associated with the presence of psychiatric disorders in these patients.

MATERIALS AND METHODS

Patients

A cross-sectional study was carried out in the Department of Allergy, at a large tertiary care clinic for adult patients in Ankara, Turkey. The study group consisted of 59 patients (44 women, 15 men) ranging in age 18–74 years with a diagnosis of CIU. CU was based on the presence of itchy wheals almost daily or at least 3 days per week for at least 6 consecutive weeks. A total of 59 healthy subjects (44 women, 15 men) ranging in age 18–70 years served as control group. Patients and controls completed a general questionnaire related to marital status, educational level and socioeconomic condition. Patients with physical urticaria, pharmacological urticaria, or urticaria induced by any other known cause and patients with a history of atopic diseases were excluded from the study. The rating of the severity of skin condition was available for all patients; scores of 1 (mild), 2 (moderate) and 3 (severe) were coded as mild to severe.¹⁰ The duration of disease and the numbers of those using drugs to control the disease were also recorded.

Psychological evaluation

After completing the physical examination and general questionnaire, all patients were sent to the Department of Psychiatry for psychiatric evaluation. Psychiatric evaluation was conducted by using the Turkish version of MMPI, which has been translated and validated for our population.^{11,12} The test, as a self-administered and well-standardized questionnaire, is the most used measure of personality in clinical psychology.^{13,14} The MMPI contains 566 true–false statements and yields standardized scores on three validity scales – L (lie: rational judgments), F (frequency: low frequency of endorsement), K (correction: response distortion and normal profiles) – and 10 clinical scales – hypochondriasis (Hs), depression (D), hysteria (Hy), psychopathic deviance (Pd), masculinity–femininity (Mf), paranoia (Pa), psychasthenia (Pt), schizophrenia (Sc), hypomania (Ma) and social introversion (Si). F has been developed to detect faking bad and reflects the degree to which

thoughts, attitudes and experiences reported by a person are different from those of the general population. L has been developed to detect faking good and reflects naive or even obvious attempts by a person to look unusually virtuous, culturally conservative, overly conscientious or even self-righteous. K has been derived as a more subtle measure of faking and contains very substantial information about ego strength, reality contact and coping abilities, as well as about defensiveness, guardedness and test-taking posture.¹⁵ Following customary interpretation of MMPI standardized scores, *T* scores = 70 were considered to be ‘elevated’, that is, clinically important. Norm for the MMPI was developed from both normal and clinical populations.^{11,16}

Statistical analysis

SPSS 8.0 PC software (SPSS, Chicago, IL, USA) was used to analyze the data. Analysis of differences between the patients with CIU and control subjects was based on a Student’s *t*-test. Spearman’s correlation test was used to establish the significance of correlation between all the results of psychological evaluation, duration and severity of the disease, and numbers of those using drugs to control the disease. A two-tailed *P*-value ≤ 0.05 was considered statistically significant.

RESULTS

Results of questionnaires were expressed as mean $\pm$ SD. Baseline demographic data, including patients’ age and sex, duration and severity of the disease, and numbers of those using drugs to control the disease are shown in Table 1. Mean ages of patients and control subjects were 38.56 ± 12.24 and 31.36 ± 11.87 , respectively. There were no gender or age differences between the two groups. The duration of illnesses ranged from 2 months to 30 years (mean: 5.45 ± 7.08) in patients with CIU. A mild form of urticaria was prominent (63.8%) in the study group. In keeping with that, more than half of the patients were on rescue antihistamine. None of the control subjects had suffered a chronic medical condition such as malignancy, hepatic insufficiency or diabetes mellitus.

Twenty of the 59 patients were primary school graduates, 16 were high school graduates and 23

Table 1. Demographic and clinical characteristics of the study groups

Variable	Patients <i>n</i> : 59	Controls <i>n</i> : 59
Sex (%)		
Female	44 (74.5)	44 (74.5)
Male	15 (23.5)	15 (23.5)
Age (mean $\pm$ SD; year)	38.56 $\pm$ 12.24	31.36 $\pm$ 11.87
Education <i>n</i> (%)		
Primary school	20 (33.9)	21 (35.6)
High school	16 (27.1)	14 (23.7)
University	23 (39)	24 (40.7)
Occupation (%)		
Housewife	21 (34.1)	19 (32.1)
Student	20 (33.8)	19 (32.1)
Government employee	19 (32.1)	21 (35.8)
Duration of CIU (mean $\pm$ SD; year)	5.45 $\pm$ 7.08	
Severity of CIU (%)		
Mild	37 (63.8%)	
Moderate	9 (15.5%)	
Severe	12 (20.7%)	
Drugs		
Rescue antihistamine	34 (58.6%)	
Once-daily drug	15 (25.9)	
Multi drugs	9 (15.5%)	

had university degrees. In the control group, 21 subjects were primary school graduates, 14 were high school graduates and 24 had university degrees. There was no difference in educational level between the two groups. Twenty-one (34.1%) patients and 19 (32.1%) controls were housewives, 20 patients (33.8%) and 19 (32.1%) controls were students and 19 (32.1%) patients and 21 (35.8%) control subjects were government employees.

The data obtained from the MMPI are summarized in Table 2. The scores were: Hs, 12.24 $\pm$ 5.93 versus 8.17 $\pm$ 5.45 (P = 0.000); D, 27.11 $\pm$ 5.42 versus 22.13 $\pm$ 4.39 (P = 0.000); Hy, 25.47 $\pm$ 5.66 versus 19.47 $\pm$ 5.20 (P = 0.000); Pd, 18.93 $\pm$ 6.36 versus 15.55 $\pm$ 5.60 (P = 0.003); Pa, 12.64 $\pm$ 4.80 versus 9.17 $\pm$ 3.77 (P = 0.003); Pt, 21.01 $\pm$ 10.03 versus 14.22 $\pm$ 7.47 (P = 0.000); Sc, 20.03 $\pm$ 12.23 versus 13.74 $\pm$ 8.04 (P = 0.001); and Si, 31.60 $\pm$ 7.35 versus 27.05 $\pm$ 7.58 (P = 0.001) were higher in patients compared to the control group. The scores of the remaining subscales of MMPI, Mf and Ma, did not reach statistical significance between patients and controls. Scores of any clinical scales for patients and controls did not produce T scores over 70.

Table 2. Results of psychological evaluation of study groups

Variable	Patients (Mean $\pm$ SD)	Controls (Mean $\pm$ SD)	<i>P</i> -value
Lie	5.28 $\pm$ 2.12	4.98 $\pm$ 2.41	
Frequency	10.03 $\pm$ 5.77	6.89 $\pm$ 3.56	
Correction	10.96 $\pm$ 4.53	12.08 $\pm$ 4.30	
Hypochondriasis	12.24 $\pm$ 5.93	8.17 $\pm$ 5.45	0.000
Depression	27.11 $\pm$ 5.42	22.13 $\pm$ 4.39	0.000
Hysteria	25.47 $\pm$ 5.66	19.47 $\pm$ 5.20	0.000
Psychopathic deviance	18.93 $\pm$ 6.36	15.55 $\pm$ 5.60	0.003
Masculinity-femininity	29.78 $\pm$ 5.19	30.05 $\pm$ 5.66	NS
Paranoia	12.64 $\pm$ 4.80	9.17 $\pm$ 3.77	0.003
Psychasthenia	21.01 $\pm$ 10.03	14.22 $\pm$ 7.47	0.000
Schizophrenia	20.03 $\pm$ 12.23	13.74 $\pm$ 8.04	0.001
Hypo mania	16.23 $\pm$ 5.05	15.30 $\pm$ 3.29	NS
Social introversion	31.60 $\pm$ 7.35	27.05 $\pm$ 7.58	0.001

The Student's t -test showed that the score of Hy was significantly higher in women with CU (and P = 0.00, respectively), although the remaining scales were not affected by gender (P = 0.031 vs P > 0.05). MMPI profiles of female and male subjects are summarized in Figures 1 and 2. Validity scale configuration showed a valid profile in both the female and male study population. This indicates that the patients and controls have made an attempt to follow instructions and read items carefully and their responses appeared to be realistically truthful and are likely to reflect patients' current status.¹⁷

Analysis of MMPI profile showed that patients and controls showed a profile which is essentially within normal limits. There are, however, certain elevations which suggest personality characteristics which may be of clinical importance. In keeping with that, female patients with high point on scales of D and Hy are often described as somewhat depressive, sad, tense, immature, weak and self-doubting. They may have pessimistic worries, show a lack of interest, involvement and initiative, and have feelings of helplessness, inadequacy and inefficiency. Indirect expression of emotions is likely. They may be manipulative and demanding in interpersonal relationships. Need to be loved and approval may be characteristics. Similarly, male patients scored significantly higher on Hs, D, Hy, Pt and Si. That may indicate depressive trends, somatization and anxiety with tension and worry. Complaints may include discomfort in social situations, poor concentration

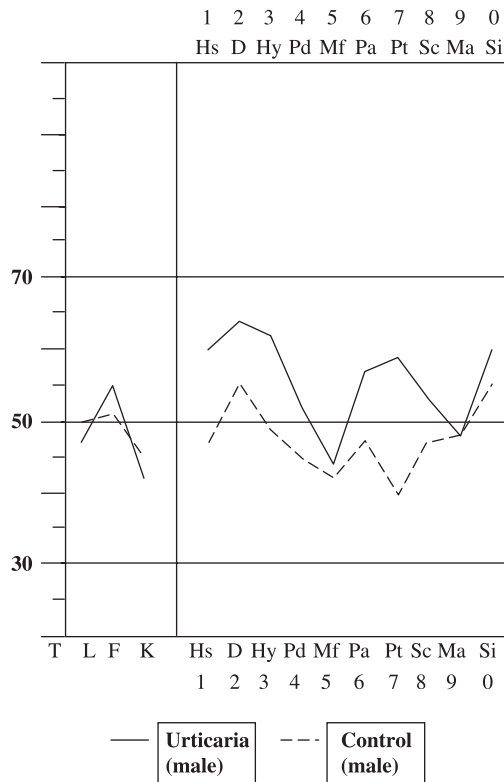


Figure 1. Minnesota Multiphasic Personality Inventory (MMPI) profile of the male group. *L*, lie; *F*, frequency; *Hs*, hypochondriasis; *D*, depression; *Hy*, hysteria; *Pd*, psychopathic deviate; *Mf*, masculinity-femininity; *Pa*, paranoia; *Pt*, psychasthenia; *Sc*, schizophrenia; *Ma*, hypomania; *Si*, social introversion; *K*, correction, is included in the figure.

and insomnia. They are often self-defeating and feel hopelessness, inferiority, and perplexity, and pressure by their life spaces. Perfectionist attitudes and motivation for personal achievements are likely.¹⁷

Spearman's correlation test was used to establish the significance of correlation between all the results of psychological evaluation, duration and severity of the disease, and numbers of those using drugs to control the disease. There were no significant correlations between the results of the psychological evaluation, duration and severity of the disease, and numbers of those using drugs to control the disease ($P > 0.05$).

DISCUSSION

In the present study, by using the MMPI, we showed that the scores on the scales of *Hs*, *D*, *Hy*, *Pd*, *Pa*,

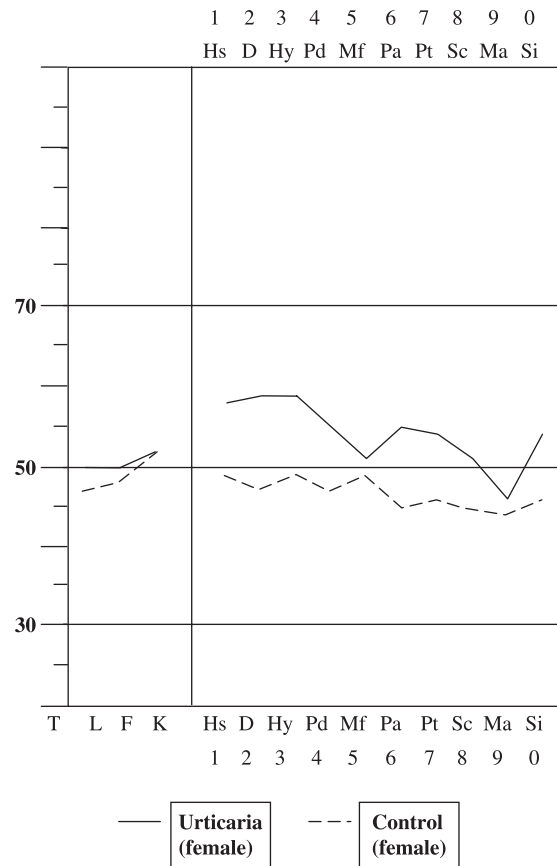


Figure 2. MMPI profile of the female group. *K* scale is included in the figure.

Pt, *Sc*, *Ma*, and *Si* were higher in our patients with CIU compared with the matched control group. However, duration and severity of the disease, and numbers of those using drugs to control the disease did not affect the scores of the MMPI.

A body of evidence indicates that psychological factors have been associated with the onset and course of many cutaneous disorders such as urticaria, acne, vitiligo, genital herpes, alopecia areata and hirsutism. Among them, urticaria is one of the skin diseases with the highest prevalence rates of psychiatric disorders.^{6,18-22} Twenty patients with CU were investigated using the Kellner-Sheffield Symptom Rating Test, which is designed to measure the presence of immediate distress and were found more anxious and depressed than those patients with fungal infections.²³ Lyketsos *et al.* found that patients with urticaria had significantly lower

dominance, but significantly higher extrapunitive-ness, intrapunitive-ness, anxiety and depression. More than two-thirds of urticaria patients have been classified as having anxiety states, and less than one-fifth have been classified as neurotic depression.⁶ However, it is difficult to evaluate the data since psychometric devices used in this study, Foulds Personality Deviance Scale and Foulds Scale of Anxiety, are not commonly used tests with little information about their reliability and validity. By using the Symptom Checklist-90, Sperber *et al.* demonstrated that patients with CU were significantly depressed, quite anxious, experienced significant discomfort in interpersonal relationship, were somatically preoccupied, and obsessive-compulsive compared to the control group.⁷ All these studies indicate that patients with urticaria have disturbed personalities as well as immediate distress.

Contrary to these data, in a study of patients with a variety of skin diseases, Sheehan-Dare *et al.* found a lower incidence of depression and anxiety in patients with CU than generalized pruritus by using the Beck Depression Inventory and Spielberger's State-Trait Anxiety Inventory as psychological assessment tools. Depression was more common in their patients with urticaria than their controls, but the difference was not statistically significant. The incidence of significant state and trait anxiety was similar to that of general dermatology out-patients.⁵ Their controls were not matched for other factors such as socioeconomic or marital status and this might have been a source of error in their results.

In the present study, we investigated psychological symptoms in adult patients with CIU by using the MMPI. MMPI was first used in the psychological assessment of urticaria at the end of 1950s. In this study, the larger part of urticaria patients appeared to have a very passive dependent orientation in interpersonal relationships, denying the presence of hostility or representing any feeling of anger.²⁴ Similarly, our trials with MMPI indicated that our patients were significantly depressed, anxious, interpersonally sensitive, somatically preoccupied, complaining of weakness and fatigue, and having paranoid ideas. Self-depreciation, feelings of uneasiness and marked discomfort during interpersonal interactions were other characteristics. Additionally, patients had more conflict with their social environment. Attitudes such

as perfectionism, need for approval and external control, depressed hostility, and the need to be loved were also other characteristics.

Whether psychological problems are the causes or results of dermatological problems remains to be resolved. Current hypotheses indicate that many organic diseases are multifactorial, with psychological and social factors contributing to both disease onset and outcome.^{7,25,26} Several studies suggested mental excitement, nervous debility and anxiety as causes of urticaria.¹⁸⁻²⁰ Teshima *et al.* cited that emotional factors are most likely to produce urticarial lesions by causing an increase in vasodilatation.²⁷ In our study, the presence of psychological poor functioning in patients with CIU may be related with selection criteria. The chronicity of the disease and the lack of contributing factors associated with the exacerbation of urticarial lesions may lead to anxiety and depression which result in frequent visits to allergy or dermatology clinics. However, we should keep in mind that the cross-sectional design of the study prevents us from drawing conclusions regarding causal links between high scores on these parameters and patients with CIU.

The severity of the underlying disease may play a role in psychological morbidity. Gupta *et al.* observed a direct correlation between the severity of pruritus and depression scores in patients with a wide range of pruritic skin disorders including CIU.²⁸ We could not find any correlation between severity and duration of the disease and the MMPI scores. Not surprisingly, as a non psychiatric population, none of the patients reached *T* scores over 70. The study group mostly consisted of patients with mild urticaria because they were from the allergy out-patient department. Therefore, the mildness of the disease may be related to the lack of correlation between severity, scores and the flat pattern of MMPI. Studies including severe urticaria patients should clarify these issues.

A well-known methodological problem in the evaluation of psychiatric morbidity is the symptoms of somatic illness such as reduced appetite, lack of energy or insomnia. These symptoms may be confounders in the evaluation of psychiatric morbidity. However, this problem does not seem to be of much importance with urticaria, as the symptoms of the disease usually do not overlap with the somatic

problems that may be observed in psychiatric disorders. Nevertheless, our study would have increased its power if a structured psychiatric interview had been done in order to identify the presence and nature of any psychiatric disorder. However, studies could not find an important difference between psychiatric interview and self-administered questionnaires such as General Health Questionnaire, Beck Depression Inventory, and Spielberger's State-Trait Anxiety in terms of estimation of the prevalence of psychiatric disorders.^{5,22,29} Therefore, self-assessment questionnaires seem to be a useful and easy method in the screening of psychological problems.

Although different psychometric instruments have been used in studies mainly conducted in industrialized parts of the world, depression, somatization and anxiety appeared to be the most common psychological disorders among patients with CU. Our data largely agree with the previous studies although it comes from patients living in a developing community with a rather traditional lifestyle. That may indicate that culture may not be the only factor in international epidemiology of psychological disorders. Other factor such as age, gender, educational level and annual income may play roles in this issue.

In keeping with the high morbidity of psychological disorders, several studies suggested that CU patients should be treated both dermatologically and psychologically.^{5,18,20,30–33} Based on the findings of our study and other similar data in the published work, we believe that psychological status and intervention strategies for these disorders should be considered for effective management of patients with CIU.

REFERENCES

- Greaves MW. Chronic idiopathic urinary (CIU) and helicobacter pylori not directly causative, but could there be a link? *ACI International* 2001; **13**(1): 23–26.
- Greaves M. Chronic urticaria. *J Allergy Clin Immunol* 2000; **105**: 664–72.
- Michel F-B. Psychology of the allergic disease. *Allergy* 1994; **49**: 28–30.
- Badoux A, Levy AD. Psychologic symptoms in asthma and chronic urticaria. *Ann Allergy* 1994; **72**: 229–234.
- Sheehan-D RA, Henderson MJ, Cotterill JA. Anxiety and depression in patients with chronic urticaria and generalized pruritus. *Br J Dermatol.* 1990; **123**(6): 769–74.
- Lyketsos GC, Stratigos J, Tawil G, Psaras M, Lyketsos CG. Hostile personality characteristics, dysthymic states and neurotic symptoms in urticaria, psoriasis and alopecia. *Psychother Psychosom* 1985; **44**: 122–131.
- Sperber J, Shaw J, Bruce S. Psychological components and the role of adjunct interventions in chronic idiopathic urticaria. *Psychother Psychosom* 1989; **51**: 135–141.
- Andrade L. Surveys of morbidity and psychiatric morbidity. *Curr Opin Psychiatry* 2000; **13**(2): 201–207.
- Patel V. Cultural factors and international epidemiology. *Br Med Bull* 2001; **57**: 33–45.
- Erbagci Z. The leukotrien receptor antagonist montelukast in the treatment of chronic idiopathic urticaria: A single-blind, placebo-controlled, crossover clinical study. *J Allergy Clin Immunol* 2002; **110**: 484–8.
- Savasir I. Translation and standardization of Minnesota Multiphasic Personality Inventory. *Psychology* 1978; **1**: 18–25 (in Turkish).
- Erol N. A validity study of Minnesota Multiphasic Personality Inventory. *Psychology* 1982; **4**: 14–15 (in Turkish).
- Belding, MA., Iguchi MY., Morral AR, Husband SD. MMPI profiles of opiate addicts: Predicting response to treatment. *J Personality Assessment*, 1998; **70**(2): 324–339.
- Hathaway SR, McKinley JC. *Minnesota Multiphasic Personality Inventory Manual*. New York: Psychological Corporation, 1967.
- Friedman AF, Webb JT, Lewak R. XXX. In: *Psychological Assessment with MMP, Interpreting the basic validity scale*. New Jersey: Lawrence Erlbaum Associated, 1989; 129–150.
- Hunt, Janet R., Penland, James G. Iron status, and depression in pre-menopausal women: An MMPI study. *Behavioural Medicine* 1999; **25**(2): 62–67.
- Lachar D. *MMPI: Clinical assessment and automated interpretation*. 4th edn. Michigan: Western Psychological Services, Detroit, 1971, 1–145.
- Papadopoulos L, Bor R, Legg C. Psychological factors in cutaneous disease. *Psychology Health Medicine* 1999; **4**: 107–126.
- Kimyai-Asadi A, Usman A. The role of psychological stress in skin disease. *J Cutan Med Surg*. 2001; **5**: 140–5.
- Gupta MA, Gupta AK. The use of antidepressant drugs in dermatology. *JEADV* 2001; **15**: 512–518.
- Kodama A, Horikawa MD, Suzuki T, Ajiki W *et al.* Effect of stress on atopic dermatitis: Investigation in patients after the Great Hanshin Earthquake. *J Allergy Clin Immunol* 1999; **104**: 173–6.
- Picardi A, Abeni D, Melchi CF, Puddu P, Pasquini P. Psychiatric morbidity in dermatological outpatients:

- an issue to be recognized. *British J of Dermatology* 2000; **143**: 983–991.
- 23 Fava GA, Perini GI, Santonastaso P, Fornasa CV. Life effects of psychological distress in dermatologic disorders: Psoriasis, chronic urticaria and fungal infection. *Br J Med Psychol* 1980; **53**: 277–82.
 - 24 Kraft B, Blumental DL. Psychological components in chronic urticaria. *Acta Allergol* 1959; **13**: 469–75.
 - 25 Badura B: Life-style and health: some remarks on different viewpoints. *Soc Sci Med* 1984; **19**: 341–7.
 - 26 Chesney A, Pand Gentry WD. Psychological factors mediating health risk: A balanced perspective. *Prev Med* 1982; **12**: 612–7.
 - 27 Teshima H, Nagata S, Kinara H, Sogawa H, Ago Y. Psychobiological studies on the onset of allergic disease. A Japanese approach. *Advances* 1986; **3**: 143–149
 - 28 Gupta MA, Gupta AK. Depression modulates pruritus perception. A study of pruritus in psoriasis, atopic dermatitis, and chronic idiopathic urticaria. *Ann NY Acad Sci.* 1999; **885**: 394–395.
 - 29 Aktan S, Ozmen E, Sanli B. Psychiatric disorders in patients attending a dermatology outpatient clinic. *Dermatology* 1998; **197**: 230–4 (Abstract).
 - 30 Hashiro M, Yamatodani Y. A combination therapy of psychotropic drugs and antihistaminics or antiallergics in patients with chronic urticaria. *J Dermatol Sci* 1996; **11**: 209–213.
 - 31 Chrousos GP. Stress, chronic inflammation, and emotional and psychical well-being: Concurrent effects and chronic sequels. *J Allergy Clin Immunol* 2000; **106**: S275–291.
 - 32 Millard L. Dermatological practice and psychiatry. *Br J Dermatol* 2000; **143**: 919–922.
 - 33 Agarwal SK, Marshall GD. Stress effect on immunity and its application to clinical immunology. 31: 25–31.