

THERAPY

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CLINICAL FEATURES OF PSORIASIS WITH COMORBID ARTERIAL HYPERTENSION

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Abstract: The study involved an assessment of medical history data and clinical features of psoriasis in 230 patients, of whom 182 suffered from isolated dermatosis and 48 from psoriasis with comorbid hypertension. The psoriasis group with concomitant arterial hypertension was found to have a significantly higher frequency of stressful situations (81% of cases as compared to 62%) and infectious diseases were registered less frequently (6% vs. 28%). Relapses of psoriasis in this group occurred more often, out-of-season type was observed more than 1.5 times more frequently and seasonal type of dermatosis was registered 2 times less often. Moreover, rapid dissemination of rash during exacerbations in patients with psoriasis with concomitant hypertension was observed two times as frequently (28% of cases vs. 16%), and cases of slow and gradual spread were more rare.

KeyWords: psoriasis, arterial hypertension, history taking, clinical characteristics



INTRODUCTION

The study of the association of psoriasis and cardiovascular diseases is now at the center of scientific interest of professionals around the world. Importance of clinical, social and economic aspects of this issue results in worldwide trials and objective multicenter researches of comorbidity of psoriasis and cardiovascular pathology. Their results allow to consider psoriasis as a risk factor for a wide range of cardiovascular diseases (hypertension, coronary heart disease, myocarditis, damage of the heart valves, atherosclerosis), which often develop at young age and, with prolonged course, lead to congestive heart failure and even death [1-5]. Some recent studies have shown clinical and metabolic disorders with violation of laboratory indications, specific for comorbid psoriasis, which may have a pathogenic significance [6-13]. Our prior studies revealed a high degree of comorbidity of psoriasis and arterial hypertension (more than 50%), among psoriatic inpatients. Although we identified a definite comorbidity between psoriasis and different metabolic syndrome components, the degree of association of psoriasis and hypertension was the highest [14-15].

A particular problem is the treatment of psoriasis associated with hypertension, since some antihypertensive drugs reportedly exacerbate the course of dermatosis and may even trigger psoriasis [16-18].

However, the data published on that subject are not sufficient to get a full understanding of the clinical and prognostic significance of this nosology syntropy. The pathogenic and clinical relationship of this impairment is indisputable, which proves the need for better understanding of clinical implications of this comorbidity.

2 PURPOSES, SUBJECTS and METHODS:

2.1 Purpose of the research was to study the clinical features of psoriasis with comorbid arterial hypertension.

2.2 Subjects & Methods

The study involved two groups of patients with confirmed psoriasis, who were under examination and treatment in the inpatient department of Kharkiv Hospital of Skin and Venereal Diseases No. 5. Etiology and disease duration were established on the basis of patient presentation, history taking and clinical examination. Particular attention was drawn to medical history data on comorbid diseases. The main ones included arterial hypertension (AH), atherosclerosis and coronary heart disease. The

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severity of dermatosis was calculated using the PASI [19-20] and the study of dynamic clinical status of patients implied evaluation of vital functions, severity of focal neurological and somatic symptoms of cardiovascular, peripheral and central nervous systems, vasculature, muscle system and the musculoskeletal system. AH was diagnosed in cases of diagnosis "Hypertension" established by a physician, or intended antihypertensive therapy or diagnosed high blood pressure (BP) when measuring blood pressure during the examination. High blood pressure was considered SBP > 130 mmHg or DBP > 85 mmHg (the criteria for metabolic syndrome, National Cholesterol Education Program USA (NCEP ATP III, 2001; metabolic syndrome criteria International Diabetes Federation (IDF, 2005)). For at least one week before study, the patients stopped using inhibitors of angiotensin-converting enzyme and / or angiotensin receptor blockers AT 2 and other antihypertensive drugs. Registration ECGs were performed in 12 standard leads with additional leads on the electrocardiograph 6 NEK-4 (Germany). Contractile properties of the myocardium were investigated using ultrasound cardiograph in M and B modes on TI-628 device (Ukraine). All the patients were consulted by clinicians of different specialties. Clinical blood tests and urinalysis were performed by standardized methods.

Conflict of interests

There is no conflict of interests.

3 RESULTS AND DISCUSSION

The total number of the patients with psoriasis included 230 patients, of them mild severity was diagnosed in 115 (50 %), moderately severe condition in 88 (38 %) and severe in 27 patients (12%). The age of the patients ranged from 40 to 65 years, an average of 52.7 ± 1.3 . The study included 122 male (53 %) and 108 female (47 %) patients. The largest group consisted of patients aged 40-50 years (54 %), that was the most efficient period. The duration of the disease before this study in Kharkiv Hospital of Skin and Venereal Diseases No. 5 ranged from 5 to 30 years. The patients with disease duration of 5 years were distributed

as follows: 2 to 6 months - 4 patients, 7 to 11 months - 17, from one year to five - 20. The vast majority of patients suffered from dermatosis from 6 to 20 years. 129 (56 %) patients indicated that they had developed psoriasis before 25 years, 101 patients (44 %) after 25 years.

Assessment of history data determined that 152 patients (66 %) had exacerbation of the pathological process in winter, 41 patients (18 %) in summer; 37 patients (16 %) did not notice any seasonal exacerbation. Most patients (202 (88 %) reported annual exacerbations. Frequent exacerbations of dermatosis, requiring hospitalization, were typical for 87 patients (38 %). The study of family history showed that 127 patients had relatives of the 1st and 2nd degree of relationship with psoriasis, family history was revealed in 21 patients (9 %).

The study of clinical features of dermatosis revealed psoriatic erythroderma in 34 patients, pustular psoriasis in 46, palmoplantar in 39 and exudative form in 55. The majority of patients received different treatments according to their presentation. Thus, 191 patients (83 %) were repeatedly treated in an outpatient department, 175 (76 %) in an inpatient department, 46 (20 %) received spa treatment. Short time effectiveness of previous treatment was marked in 179 patients (78 %), no positive effect of treatment in 21 (9 %). Exacerbations occurred once in several years in 12 patients (5%); 1 per year in 39 (17 %); 2-3 times a year in 69 (30 %). Continuously relapsing course with refractoriness to therapy was observed in 110 patients (48 %).

According to survey data of 182 patients with isolated psoriasis 113 (62 %) patients associated the onset of dermatosis with psychoemotional stress, 51 (28 %) with previous infectious viral disease, 18 (10 %) with injuries and surgical manipulations. According to survey data, 48 patients with psoriasis associated the onset of dermatosis with AH, in 39 (81 %) patients the condition was caused by emotional stress in 3 (6 %) by infectious and viral diseases, trigger factor in other patients remained unknown.

A close study of disease history as well as additional tests (biochemical and instrumental) showed that patients with isolated psoriasis suffered from pancreatitis, calcu-

lous cholecystitis, biliary dyskinesia 1.3 times more frequently than patients with psoriasis, associated with AH (29 % and 22 % respectively). Endocrine diseases were not significantly predominant in patients suffering from psoriasis, associated with AH (12 % and 17 %, respectively). Gastrointestinal diseases (gastritis, colitis, malabsorption syndrome) were often recorded in patients with psoriasis without AH. According to abdominal cavity ultrasound examination report hepatobiliary pathology was diagnosed in 45 (20 %) patients. In particular, 25 (11 %) patients had chronic cholecystopancreatitis, 14 (6 %) patients had fatty hepatosis and 5 (4 %) patients had cholelithiasis.

Average PASI in group of psoriasis without concomitant hypertension was 33.8 ± 3.9 and 37.5 ± 4.0 in group with hypertension. In most patients the disseminated psoriatic process was diagnosed (224 - 97,5 %), and 6 (2.5 %) patients had localized condition. Clinical examination of patients at the time of clinical trial showed that 6 patients had limited cutaneous process as single plaques with different localization on the skin of the trunk and extremities with PASI not more than 10. Disseminated skin process with PASI 10 to 50, with a tendency to erythroderma was observed almost equally in all groups of the patients under investigation. Impairment of nail plates was found in 25 (14%) of psoriatic patients without AH and 8 (17%) of patients suffering from psoriasis, associated with AH had "oil spot" symptom, "thimble" symptom, onychogryphosis and onycholysis.

AH was observed in 48 (20.8 %) patients with psoriasis out of 230. Depending of the level of blood pressure the patients were distributed as follows: mild hypertension (I degree) was diagnosed in 18 patients (37.5 %), with average systolic blood pressure accounting for 158.4 mmHg, diastolic blood pressure 97.3 mmHg. Moderate AH (II degree) was observed in 30 patients (62.5 %) of the following indices: systolic blood pressure of 178.5 mmHg, diastolic 108.2 mmHg. Electrocardiographic studies also showed signs of early ventricle repolarization syndrome in 32 patients (67 %), including 14 (29 %) men and 18 (37.5 %) women.

Depending on the degree of the target organ damage,

the patients were divided according to stages of hypertension. However, only 9 patients (19 %) had the first stage of the disease. Other patients were found to have signs of the target organs damage of varying degrees of severity and second stage of the disease was established in 39 (81 %) patients. Family history from both parents was detected in 7 patients (14.5 %), from one parent in 12 (25 %), from the second-degree relative in 4 (8 %). Thus, 19 patients (40 %) were found to have family history from the first-degree relatives.

Obesity of varying degrees of severity was noted in 67% of men and 60 % women. Type 2 diabetes was observed in 4 patients. Regular stress was noted in 23 (48 %) patients. However, stress in the family, which worsened the progress of hypertension, was noted in 17 (35 %) of women and only 5 (10 %) men, but stress at work in 15 (31 %) men and 11 (30 %) women. Low physical activity was observed in 7 (15 %) patients according to their own estimation and in 26 (54 %) patients according to the doctor's estimation. Overuse of salt was reported by 7 (15 %) patients.

4 CONCLUSIONS

Assessment of the features of clinical manifestations and course of psoriasis in patients with AH as compared to patients without AH showed significantly higher incidence of stress (81 % of cases versus 62 %) and lesser incidence of infections (6 % vs. 28 %), medication intake, allergies and alcohol abuse as trigger factors of psoriasis. Moreover, patients with AH comorbid psoriasis were found to have relapses more frequently. These patients more than 1.5 times more frequently had off-seasonal type and 2 times less seasonal type of dermatosis. Attention is drawn to the fact that rapid dissemination of skin lesions during exacerbation in patients with psoriasis, associated with AH, was observed 2 times more often (28 % of cases versus 16 %) and cases of slow and gradual dissemination of rash were rarer.

Thus, medical history data and clinical presentations of 230 psoriasis patients, including cases of comorbid arterial hypertension, are heterogeneous, aggravating by each other in various combinations that requires further study and systematization of key parameters.

REFERENCES

1. Yeung, H. et al. (2013). Psoriasis Severity and the Prevalence of Major Medical Comorbidity A Population-Based Study. *JAMA Dermatol.*, 149 (10), 1173-1179
2. Mahe, E. et al. (2013). Childhood-onset psoriasis: association with future cardiovascular and metabolic comorbidities. *British Journal of Dermatology*, 169, 889-895.
3. Choi, H.K. et al. (2007). Risk of myocardial infarction in patients with psoriatic arthritis. *Arthr.Reum.*, 56 (9), 799.
4. Ahlehoff, O. et al. (2012). Psoriasis and risk of atrial fibrillation and ischaemic stroke: a Danish Nationwide Cohort Study. *Eur Heart J.*, 33(16), 2054-2064.
5. Wang, Y. et al. (2012). Chronic skin-specific inflammation promotes vascular inflammation and thrombosis. *J Invest Dermatol.* 132(8). 2067-2075.
6. Dowlatshahi, E.A. et al. (2013). Markers of Systemic Inflammation in Psoriasis. A Systematic Review and Meta-analysis. *The British Journal of Dermatology.* 169 (2). 266-282.
7. Kungurov, N.V., Philimonkova, N.N., Topiychnanova, E.P. (2013). Systemnaya vospalytel'naya reaktivnaya i yavleniya dyslipidemii pri psoriase [Systemic inflammatory reaction and phenomena of dyslipidemia in psoriasis]. *Fundamental research.* 9 (1). 188-194.
8. Shtoda, U.M., Slyesarenko, N.A., Rodionova, T. I. et al. (2014). Nekotoryye aspekty obshchnosti patogeneza sakharnogo diabeta 2 tipa i psoriaza [Some aspects of the common pathogenesis of type 2 diabetes and psoriasis]. *Fundamental research.* 4(3). 647-654.
9. Perlamutrov, Yu. N., Mikryukov, A.V. (2013). Kliniko-laboratornyye kharakteristiki psoriaza, assotsirovannogo s gormonal'no-metabolicheskimi narusheniyami [Clinico-laboratory characteristics of psoriasis associated with hormonal-metabolic disorders] *Russian Journal of Skin and Sexually Transmitted Diseases*, 5, 46-50.
10. Slesarenko, N.A., Utts, S.R., Shtoda, Yu. M., Platonova, A.N. (2013). Endotelial'naya disfunktsiya pri psoriase i sakharnom diabete 2-go tipa v usloviyakh komorbidnosti [Endothelial dysfunction in psoriasis and type 2 diabetes mellitus in conditions of comorbidity]. *Saratov Journal of Medical Scientific Research.* 9(3), 590-595.
11. Barile, S. et al. (2006). Vascular endothelial growth factor gene polymorphisms increase the risk to develop psoriasis. *Exp. Dermatol.*, 15(5), 368-376.
12. Sosnovskaya, O.A. (2012). Narusheniya endotelial'noy funktsii sosudov u bol'nykh psoriazom [Violations of endothelial function of blood vessels in patients with psoriasis]. *University clinic*, 8 (1), 17-20.
13. Berehova, A.A. (2015). Stan sympato-adrenalovoyi systemy u khvorykh na psoriaz z ruznym stupenem tyazhkosti klinichnoho perebihu [State of the sympathoadrenal system in patients with psoriasis with varying degrees of severity of clinical course]. *Dermatology and venereology*, 1(67), 20-26.
14. Belovol, A.N., Tkachenko, S.G. Izuchenyye komorbidnosti psoriasis s kardiometabolicheskimi narusheniyami [Study of comorbidity of psoriasis and cardiometabolic disorders] (2014). / *Modern problems of dermatovenereology, cosmetology and management of public health.* V. 11.-Kharkiv, 35-42.
15. Belovol, A.N., Tkachenko, S.G., Kondrashova, V.B. (2011). The study of comorbidity of psoriasis and metabolic syndrome. 20 Congress of the EADV, Lisbon (Portugal), 219.
16. Kimball, A.B. et al (2008). National Psoriasis Foundation clinical consensus on psoriasis comorbidities and recommendations for screening. *J. Am. Acad. Dermatol.* 58(6), 1031-1042.
17. Cohen, A.D. et al. (2005). Drug exposure and psoriasis vulgaris: case-control and case-crossover studies. *Acta Derm Venereol.*, 85, 299-303.
18. Antonov, D., Grozdev, I., Pehlivanov, G., Tsankov N. (2006). Psoriatic erythroderma associated with enalapril. *Skinmed.*, 5, 90-92.
19. Andrashko, U.V., Litvinenko, B.V. (2009). Sovremennyye podhody k etapnoy naruzhnoy terapii pry psoriase [Modern approaches to step-wise topical therapy for psoriasis]. *Ukrainian journal of dermatology, venereology, cosmetology*, 1, 29-32.
20. Vocel, G. (2010). Strategiya lecheniya vulgarnogo psoriaza i psoriacheskogo artrita [The strategy of treating vulgar psoriasis and psoriatic arthritis]. *Dermatologist*, 1 (01), 47-56

Received: 07-Jun. - 2017

Accepted: 03-Sep. - 2017