Introduction

More than 200 years have passed since the first detailed description of psoriasis by Robert Willan, the “father” and founder of modern dermatovenereology, but humanity still has no effective treatment for this disease, which causes a deterioration in the quality of life of patients [6].

The prevalence of psoriasis is heterogeneous in different parts of the world and within the same country and different age groups. Thus, in northern India, psoriasis affects between 0.44 and 2.8% of the adult population. The peak of the disease occurs at the age of 6-10 years in boys and 11-15 years in girls [6].

Scientists estimate that psoriasis affects approximately 125 million people worldwide. Taiwan and the United States are considered to be the countries with the low prevalence of psoriasis, where the prevalence of this disease among the adult population is 0% and 0.91%, respectively; examples of countries with a high prevalence of psoriasis are Italy and Norway, where the figure is about 2.1% and 8.5%, respectively [10, 18]. The prevalence of psoriasis among children in the United States is 40.8 per 100 thousand people/year, among adults - 78.9 per 100 thousand people/year, while in Italy the figure is 230 per 100 thousand people/year [18].

Given these facts, in the last decade there has been an increase in the number of works on the search for markers that would help determine the risk and severity of psoriasis, and in this aspect, special attention should be paid to the

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relationship between these phenomena and such markers as body size of human [2, 4, 11, 26, 27].

Ferguson L. D. and co-authors [8] conducted an anthropometric survey of more than 500 thousand people aged 40-70 years, of which 5074 people suffered from psoriasis. In order to identify the relationship between certain anthropometric indicators and the chance of psoriasis, a statistical analysis of the data was performed. The adjusted odds ratios (OR) for psoriasis were according to the standard deviation (13.5 cm): the highest waist circumference was 1.20 (95% CI 1.16, 1.23) (p<0.001). This OR remained significant after further adjustment according to body mass index in patients with psoriasis (OR 1.19 (95% CI 1.12, 1.27)) (p<0.001).

An anthropometric study was performed on 135 children with psoriasis of varying severity and 73 healthy children (control group). Significantly higher prevalence of weight-to-height ratio (WHR) of 0.5 and more in children with psoriasis compared with the control group (p=0.002). OR with WHR more than 0.5 in children with psoriasis compared with the control group was 3.30 (95% CI 1.45-7.52). However, researchers have not found a significant difference in the rate of WHR in different forms of psoriasis. Only in children with moderate and severe forms of psoriasis, the average rate of WHR was higher than in children with mild psoriasis (0.48 vs. 0.46, p=0.04) [13]. Plasma adiponectin levels, insulin resistance, waist circumference, and psoriasis have been found to be related [14].

The authors’ analysis of 1259 literature sources, 17 of which were selected for meta-analysis, revealed that there is a statistically significant relationship between the occurrence of psoriasis and WHR, if it is more than 0.5 [19].

A group of Norwegian scientists conducted two examinations of 34,996 people, without psoriasis in 1995-1997 and 2006-2008, in order to identify the risks of this disease. Between examinations, in 374 people developed psoriasis. Statistical analysis of the data revealed that there is a relationship between body mass index (BMI) and waist circumference and the risk of psoriasis [21]. One standard deviation, such as higher body mass index, waist circumference, and waist-to-hip ratio, gave a relative risk of 1.22 (95% confidence interval (CI = 1.11-1.34), 1.26 (95% CI = 1.15-1.39), and 1.18 (95% CI = 1.07-1.31) respectively [22].

Similar results were obtained in another study. The examined children with psoriasis had higher BMI (785th percentile; OR 4.4; 95% CI 1.2-15.6), waist circumference (>75th percentile; OR 7.4; 95% CI 2.0-27.7) and waist-to-height ratio (>l.490; OR 4.6; 95% CI 1.3-17.0) [24].

The aim of the study was to find the differences in girth body sizes between healthy and/or psoriatic men depending on the severity of the disease.

Materials and methods

Men aged 22 to 35 years, patients with psoriasis (n = 100, including 32 with mild and 68 with severe course) at the Department of Skin and Venereal Diseases with a course of postgraduate education at National Pirogov Memorial Medical University, Vinnytsya and the Military Medical Clinical Center of the Central region, an anthropometric examination was conducted according to V.V. Bunak [3].

The PASI (Psoriasis Area and Severity Index) was used to clinically assess the severity and area of psoriatic lesions [9]. According to the scoring system, the intensity of erythema, infiltration and peeling was determined: 0 points - no symptom, 1 - mild, 2 - moderate, 3 - severe, 4 - very severe. The following formula was used to calculate the PASI index for each body area: the anatomical area of the body (for the head - 0.1, the upper extremities - 0.2, the torso - 0.3, the lower extremities - 0.4) x (severity of erythema + severity of infiltration + severity of peeling) x area of skin lesions of the corresponding anatomical region of the body. Assessment of the severity of psoriasis was performed on the total PASI index (the sum of the obtained indices for each body area): mild - PASI<10; medium degree - PASI values from 10 to 20; severe - PASI>20 [1].

The control group consisted of anthropometric data of 82 practically healthy men of the same age group from the data bank of the research center of National Pirogov Memorial Medical University, Vinnytsya.

In this study, an assessment of the circumferential size of the body (cm) done. Statistical processing was performed in the license package "Statistica 5.5" using non-parametric evaluation methods. The reliability of the difference between the values between the independent quantitative values was determined using the Mann-Whitney U-test.

Results

In healthy men, compared with patients, lower values were found for: shoulder girth in a tense state (33.23±2.84) compared with patients with psoriasis (37.67±3.74).Fig. 1. Shoulder girth in stressed state in healthy and psoriatic men without taking into account somatotype (cm). In this and similar figures in this section: H = healthy men; P-MC - men with mild course of psoriasis; P-SC - men with severe course of psoriasis; Mean - average value; Mean±SE - average value ± error average; Mean±SD - average value ± standard deviation.
with men with mild psoriasis (36.47±2.54; p<0.001) and severe psoriasis (35.67±3.34; p<0.001) (Fig. 1); shoulder girth in a relaxed state (30.17±2.94) compared with men with psoriasis of mild (35.17±2.47; p<0.001) and severe course (34.41±3.19; p<0.001) (Fig. 2); forearm girth in the upper part (27.33±2.01) compared with men with mild psoriasis (29.72±1.84; p<0.001) and severe psoriasis (29.41±2.26; p<0.001) (Fig. 3); forearm girth in the lower part (17.44±1.24) compared with men with mild psoriasis (18.20±0.98; p<0.01) and severe psoriasis (18.27±1.10; p<0.001) (Fig. 4); wrist circumference (21.39±1.22) compared with men with mild psoriasis (22.55±1.28; p<0.001) and severe psoriasis (22.70±1.09; p<0.001) (Fig. 5); hip circumference (53.25±4.49) compared with men with mild psoriasis (60.08±4.45; p<0.001) and severe (58.70±6.09; p<0.001) (Fig. 6); hips circumference (95.04±6.39) compared with men
with mild psoriasis (104.1±7.1; p<0.001) and severe psoriasis (101.6±9.2; p<0.001) (Fig. 7); crus girth in the upper part (36.43±2.91) compared with men with mild psoriasis (40.56±2.47; p<0.001) and severe psoriasis (39.55±3.05; p<0.001) (Fig. 8); crus girth in the lower part (23.41±1.87) compared with men with mild psoriasis (25.64±1.71; p<0.001) and severe psoriasis (24.88±1.65; p<0.001) (Fig. 9); neck circumference (37.67±1.92) compared with men with mild psoriasis (40.48±2.80; p<0.001) and severe (40.85±2.38; p=0.001) (Fig. 10); waist circumference (79.48±7.32) compared with men with mild psoriasis (95.83±17.27; p<0.001) and severe psoriasis (97.18±13.31; p<0.001) (Fig. 11); chest girth on inspiration (100.0±6.0) compared with men with psoriasis of mild (108.4±9.4; p<0.001) and severe (107.8±9.4; p<0.001) (Fig. 12); chest girth on exhalation (93.18±6.39) compared with men with mild psoriasis (104.2±9.7; p<0.001) and severe psoriasis (103.9±9.8; p<0.001) (Fig. 13); chest girth at rest (95.20±6.57) compared with men with mild psoriasis (105.8±9.9; p<0.001) and severe psoriasis (105.3±9.8; p<0.001) (Fig. 14).

In patients men with mild psoriasis compared with patients with severe psoriasis found greater values only of the girth of the crus in lower part (25.64±1.71; 24.88±1.65; p<0.05) (see Fig. 9).

**Discussion**

Given the most frequent manifestation of psoriasis at a young working age and in some cases severe, continuously recurrent course, the presence of many treatments, none of which is a guarantee of complete recovery and no recurrence - now there is an urgent need to find prognostic signs therapy and prevention of relapses [16].

In the absence of ideal biomarkers, the study of constitutional markers becomes crucial. Currently, there is a growing interest in comparing the somatotypological features of the organism in terms of normal and pathology. In this direction both anthropometric characteristics of a human body as a whole, and their separate features are investigated. The use of this area in the practical work of the doctor allows for a holistic and personalized approach in the process of diagnosis and treatment [17, 23].

In patients with psoriasis, a significant multiplicative interaction was found between BMI, waist circumference and two SNPs in the IL12B (rs3212227) and IL23R (rs7530511) genes [15]. It has been established that increased body mass index and increased waist circumference are risk factors for psoriasis. The association has been documented consistently in both case studies and cohort studies. Larger waist circumference, hip circumference, and waist-hip ratio were associated with a higher risk of psoriasis [7].

Recent studies have shown a positive and strong, compared to body mass index, correlation between abdominal girth and disease severity [1]. Sandeep Kumar et al. [12] found a direct stepwise correlation between body mass index, waist and hip circumference, and the risk of psoriasis in 67,300 women over a 12-year period.

A team of researchers led by E. Toussirot [25] and A.R. Setty [20] determined that the waist and hip circumference was higher in patients with psoriasis compared with the control group. S.V. Dmytrenko [5] in men with widespread psoriasis on the background of a decrease in the girth of the extremities found multidirectional changes in the girth sizes of the body.

The data obtained by us confirm the information provided by the authors about the predominance of the girth size of the limbs and torso in patients studied in comparison with patients with severe psoriasis.
the control group. The data were checked by the authors in the analysis of different age and ethnic groups.

In sick men in comparison with healthy we found higher values for - shoulder girth in a tense state by 8.9% and 6.8%; shoulder girth in the unstressed state by 14.2% and 12.3%; forearm girth in the upper part by 8.0% and 7.1%; forearm girth in the lower part by 4.2% and 4.5%; hand girth by 5.1% and 5.8%; hip circumference by 11.4% and 9.3%; hips circumference by 8.7% and 6.5%; crus girth in the upper part by 10.2% and 7.9%; crus girth in the lower part by 8.7% and 5.9%; neck girth by 6.9% and 7.8%; waist circumference by 17.1% and 18.2%; chest girth on inspiration by 7.8% and 7.2%; chest girth on exhalation by 10.6% and 10.3%; chest girth at rest by 10.0% and 9.6% compared with men with psoriasis of mild and severe course.

Conclusions

1. In men with mild and severe psoriasis course, all body circumferences (except foot circumference) are larger than in healthy subjects.

2. In patients men with mild psoriasis course, compared with severe psoriasis course, higher values were found only for the girth of the lower crus part.

In patients with mild psoriasis course, compared with patients with severe psoriasis, only the crus girth in lower part was found to be higher by 3.1%.

Thus, the comparison of the girth body size in healthy and patients with psoriasis of varying severity of men allowed to formulate criteria for risk and unfavorable prognosis of the psoriatic process.

References


In patients with mild psoriasis course, compared with patients with severe psoriasis, only the crus girth in lower part was found to be higher by 3.1%.
OSOBLYVOSTI OBХВАТNYCH ROZMIIV TIPA U CHOLOV'IKIV KHVORYH NA PSORIAZ LEKGOGO TAU TЯVKOGO PЕREBIGU

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OSOBNOSTI OBХVATNYH ROZMIH TIPA NA PSORIAZ LEKOGO TAU TЯVKOGO PЕREBIUGA

Metta doslidzhenня - vynikli vidimosti obхватних rozmirov tippa mikh zdorovymi tаbo hoxyivy na psorizh u choloviokiv v zalezhnosti od tяzhykh perебigu zaokhorovannya. 32 chovikam pervogo zirloego viku, hovrim iz lekym perveyvom i 68 iz tяzhym perveyvom psorizu provedeno antrtopometriche obshheniia za Bunakom. Dla kvinnich ykhi vishkih perебigu i plosii antrtopometrichnyh ukharian ykoriastali indeks PASI. Kontrollyu, za antrtopometricmykh parametrami, grupu skladali 82 praktyno zdorovyh chovikiv analogogho viku, vibran y iz banuku danykh naukovogo-sloiovogo centru Vinnichskogo nauchnogo medychnogo universytetu im. M. I. Pyrogo. Statystichnu obrobku danykh provedeno v licenzionnomu paketi "Statistica 8.5" iz antrtopometricihnykh metoda. Y khviry na psorizh lekogo tau tяvkogo perебigu chovikiv, porivnyano zi zdorovymi, namy vystavlano: blyzhii znachennia - obхвату plecha u napryzhuhenomu stanii na 8,9% tа 6,8%; obхватu plecha u napryzhuhenomu stanii na 4,2% tа 12,3%; obхватu hnedoprihoti u verhnykh chastyny na 8,0% tа 7,1%; obхватu hnedoprihoti u niжnykh chastyny na 4,2% tа 4,5%; obхватu hnedoprihoti u niжnykh chastyny na 5,1% tа 5,8%; obхватu hnedoprihoti u niжnykh chastyny na 11,4% tа 9,3%; obхватu plecha na 8,7% tа 6,5%; obхватu hnedoprihoti u niжnykh chastyny na 10,2% tа 7,9%; obхватu hnedoprihoti u niжnykh chastyny na 8,7% tа 5,9%; obхватu plecha na 6,9% tа 7,8%; obхватu hnedoprihoti u niжnykh chastyny na 17,1% tа 18,2%; obхватu zirloego viku na 6,9% tа 7,8%; obхватu zirloego viku na 14,2% tа 13,9%; obхватu zirloego viku na 10,6% tа 10,3%; obхватu zirloego viku na 10,6% tа 10,3%. Takim chynom, vyssenih vidimosti obхватных rozmirov mikh zdorovymi i hoxyivy na psorizh lekogo tau tяvkogo perебigu ukrainyckymi chovikiv pamery pervykh zirloegovh vikov. Мих hoxyivy mikh zirnymi nablyuchennymi vidimosty dermotou vidimosty vystavlyano liше dlia obхватu hnedoprihoti u niжkykh chastyny.

Klyuchovyi slova: psorizh, obхватные rozmiry tippa, chovikiv.