Skinfold thickness in men and women with seborrheic dermatitis of varying severity

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Significant progress has been made in the diagnosis of seborrheic dermatitis. It is based on the anamnesis and clinical picture of skin lesions. Carrying out a detailed analysis of the structure and size of the body in combination with clinical and instrumental studies allows us to further make a more reliable prognosis of complications of this disease and improve the results of treatment of such patients. The aim of the study was to establish and analyze the features of the skinfold thickness in Ukrainian men and women with seborrheic dermatitis of varying severity. Skinfold thickness (SFT) was determined in 40 men and 40 women (aged 25 to 44 years) with generalized fatty seborrheic dermatitis (mild and severe). The control group consisted of SFT values of practically healthy men (n=82) and women (n=154) of the same age group from the database of the research center National Pirogov Memorial Medical University, Vinnytsya. Statistical processing of SFT indicators was performed in the license package “Statistica 6.0” using non-parametric evaluation methods. Compared with practically healthy men, patients with mild and severe seborrheic dermatitis had lower SFT values on the posterior (by 49.7 % and 46.5 %) and anterior (by 41.9 % and 46.4 %) surfaces of the shoulder and chest (by 28.9 % and 27.9 %), on the thigh (47.3 % and 38.3 %), on the forearm (only compared to severe severity by 18.5 %), at the lower angle of the shoulder blade (only compared to mild severity by 3.5 %) and on the shin (only compared to severe severity by 15.9 %), as well as higher values of SFT on the side (by 36.7 % and 51.6 %); and in women patients of varying severity- also lower values of SFT on the posterior surface of the shoulder (by 51.0 % and 43.6 %), on the anterior surface of the shoulder (by 46.6 % and 31.0 %), on the chest (by 31.3 % and 18.9 %), on thighs (by 47.4 % and 38.9 %) and on the shin (only compared to the mild degree by 10.2 %), as well as higher values of SFT on the side (by 37.0 % and 44.6 %). Among men or women with seborrheic dermatitis of varying severity, only higher values were found in women with severe SFT on the anterior surface of the shoulder (by 22.6 %), and in men with severe severity - higher values of SFT on the thigh (by 14.6 %). Manifestations of sexual dimorphism of SFT among patients with seborrheic dermatitis of varying severity were found only between men and women with severe disease, namely, higher values of SFT in women on the front shoulder surface (by 28.6 %), forearm (by 16.0 %) and on the shin (by 26.3 %).

Keywords: seborrheic dermatitis, constitutional features of skin diseases, Ukrainian men and women, anthropometry, skinfold thickness, sex differences.

Introduction

Seborrheic dermatitis (SD) is a common disease and has great social significance, as it often leads to physical and psycho-emotional maladaptation of the patient and his family members. Clinical manifestations of dermatitis lead to psycho-emotional experiences, reduce social activity and quality of life, as well as cause the development of inferiority complex in patients. The disease is often resistant to therapy and occurs with frequent recurrences [6, 11, 18]. SD develops in the face and body with developed secretion of sebum [19]. The pathological process on the head is manifested by increased oiliness of the scalp, dandruff, constant itching and discomfort. SD of the scalp is accompanied by the appearance of plaques and thick scales, which can spread beyond hair growth and resemble
psoriasis. On the face, the pathological process is localized in the eyebrows, central part of the face, nasolabial folds and chin. If skin of a scalp is affected - thinning and thickening of hair which are often followed by formation of small white scales is observed. On the smooth skin of the back, face, chest appear macular-erythematous elements, papules, plaques appear [15, 16].

Significant progress has been made in the diagnosis of SD. It is based on the anamnesis and clinical picture of skin lesions. To date, many aspects of etiopathogenesis remain poorly understood. Genetic predisposition to certain metabolic features and the influence of the external environment on the development of the disease cannot be ruled out [13].

At the same time, a number of new emphases have emerged in the tactics of diagnosis, including the role of constitutional dermatology, aimed at a personalized approach to each patient [9]. This approach is essential both in terms of theoretical constitutional human biology and to address the problems of modern preventive medicine. For example, it is known that in the group of dolichomorphic somatotypes there is a tendency to reduce the incidence of severe skin lesions in the pathological process of pyoderma, atopic dermatitis with weight gain, while people with brachymorphic somatotype get an average of 42% of all severe diseases [20]. In the group of patients with mesomorphic somatotype, the highest incidence of psoriasis was noted, as this type of somatotype most often occurs in the population [17].

Isolation of signs of diagnostic value (anthropometric, dermatoglyphic, etc.) and their further use in the clinic is another approach to the study of multifactorial diseases, including SD. The search for constitutional markers in connection with its resistance in the norm and in various pathological conditions is a necessary component of multifaceted comprehensive studies of the biological status of man [1, 8].

An important form of prevention of multifactorial nosologies is the formation of risk groups for primary prevention, genetic counseling and medical examination. In this regard, the practical work of doctors and geneticists is relevant to the use in low practice of low-cost and highly informative diagnostic methods [8, 9]. A good example is a more detailed analysis of the structure and size of the body in combination with clinical and instrumental studies, which will further obtain a reliable prognosis for the development of complications of dermatosis and improve the treatment of such patients [14].

The aim of the study was to establish and analyze the features of the skinfold thickness in Ukrainian men and women with seborrheic dermatitis of varying severity.

Materials and methods

Clinical and anthropological examination of 40 men and 40 young women with generalized oily form of SD of mild and severe severity (25-44 years according to the age periodization of the WHO, 2015) was conducted on the basis of the Department of Dermatology and Venereal Diseases with a postgraduate course in National Pirogov Memorial Medical University, Vinnytsya and the Central Military Medical Center.

The Bioethics Committee of the National Pirogov Memorial Medical University, Vinnytsya (Minutes № 10 of 26.11.2020) found that the studies did not contradict the basic bioethical standards of the Helsinki Declaration, the Council of Europe Convention on Human Rights and Biomedicine (1977), WHO regulations and Ukrainian law.

The diagnosis of SD was established on the basis of the subject’s complaints, life history and illness, examination of the face, scalp, torso and extremities with the assessment of subjective and objective signs of the disease.

Anthropometric survey was conducted in accordance with the scheme of Bunak V. V. [4]. Measurements of skinfold thickness (SFT) were performed using a caliper (mm). Measured: SFT on the posterior (GZPL) and anterior (GPPL) surfaces of the shoulder, on the forearm (GPR), at the lower angle of the shoulder blade (GL), on the chest (GGR), abdomen (GG), sides (GB), thighs (GBD) and on the shin (GGL).

As a control group used SFT indicators of practically healthy men (n=82) and women (n=154) of the same age, which were selected from the database of the research center National Pirogov Memorial Medical University, Vinnytsya.

Statistical processing of the results was performed in the license package "Statistica 6.0" using non-parametric evaluation methods. The reliability of the difference between the values between the independent quantitative values was determined using the U-Mann-Whitney test.

Results

Table 1 presents the results of the comparison of SFT between healthy and patients with mild to severe SD men and/or women.

| Table 1. Comparison of SFT between healthy and SD patients of varying severity in men and/or women (M±σ). |
| --- | --- | --- | --- |
| Indexes | Healthy men (n=82) | Men with SD | p Mons | p Mons | p m-ss |
| --- | --- | --- | --- | --- | --- | --- |
| GZPL | 7.848±2.914 | 3.950±1.146 | 4.200±1.609 | <0.001 | <0.001 | >0.05 |
| GPPL | 5.592±1.323 | 3.250±1.070 | 3.000±1.214 | <0.001 | <0.001 | >0.05 |
| GPR | 4.173±1.621 | 3.550±0.686 | 3.400±0.940 | >0.05 | =0.088 | >0.05 |

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It is a known fact that in solving the problem of identifying the peculiarities of the pathology depending on the physique, algorithms for taking into account the constitutional parameters of the body have long been actively used, which we consider necessary to use in groups of patients with SD. Establishing differences between healthy and patients with different dermatitis [2, 5, 7, 10] suggested the presence of such a pattern in SD. Thus, Chaplyk-Chizho I. O. [5] found significantly higher values of SFT on the posterior, anterior surface of the shoulder and on the side in men with pyoderma compared to healthy men.

According to the results of Makarchuk I. M. [7] found that in healthy individuals of both sexes SFT on the front surface of the shoulder, forearm, lower angle of the shoulder blade, chest, abdomen, side, lower extremity recorded significantly higher values compared with patients with acne.

Al-Omary Ala'a Osama Ahmad et al. [2] found that in men with various forms and severity of eczema, most SFT (except fold on the side) are significantly lower than in healthy men.

Obadeh Bassam Abdel-Rahman Al-Qaraleh [10] found that in men with mild or severe psoriasis, compared to healthy men, significantly higher SFT at the lower angle of the shoulder blade, abdomen and side and lower - on the back and front of the shoulder, chest and thighs are observed.

In the analysis of SFT between healthy and patients with mild to severe SD Ukrainian men or women, we found the following significant or trends of differences (Table 2, see Table 1):

- between healthy and sick men - in practically healthy men SFT values are higher on the posterior surface of the shoulder (49.7 % and 46.5 %, respectively), on the anterior surface of the shoulder (41.9 % and 46.4 %, respectively), on the chest (28.9 % and 27.9 %, respectively), on the thigh (by 47.3 % and 38.3 %, respectively), on the forearm (only compared to severe severity by 18.5 %), at the lower angle of the shoulder blade (only compared to mild severity by 3.5 %) and on the shin (only compared to with severe severity by 15.9 %), as well as lower values of SFT on the side (by 36.7 % and 51.6 %, respectively);
- between healthy and sick women - in practically healthy women SFT values are higher on the posterior surface of the shoulder (by 51.0 % and 43.6 %, respectively), on the anterior surface of the shoulder (by 46.6 % and 31.0 %, respectively), on the chest (by 31.3 % and 18.9 %, respectively), on the thigh (by 47.4 % and 38.9 %,
Table 2. Differences in SFT between healthy and patients with seborrhoeic dermatitis of varying severity in men and/or women.

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Notes: H - healthy; SD/MS - SD of mild severity; SD/SS - SD of severe severity; □ or ◼ - significant differences in SFT between healthy and sick men; □ or ◼ - trends in SFT differences between healthy and sick men; □ or ◼ - trends in differences in SFT between sick men of varying severity; □ or ◼ - significant differences in SFT between healthy and sick women; □ or ◼ - significant differences in SFT between sick women of varying severity; significantly higher SFT are highlighted in green when comparing the respective groups between men and women; trends in higher SFT values are highlighted in yellow when comparing the respective groups between men and women.

To date, many scientific and practical studies have been performed to study the characteristics of the thickness and distribution of subcutaneous fat in humans at different ages of ontogenesis. At the same time, it should be emphasized that the modern realities of human life dictate the need to develop subtler and practical research, also aimed at studying the sexual differences of this parameter in people with certain pathologies. This is especially true at a young age [8, 9].

In the analysis of sex differences of SFT between patients with SD of varying severity in Ukrainian women with severe severity found significantly higher or tendencies to higher values of SFT on the anterior surface of the shoulder by 28.6 %, forearm by 16.0 % and shin by 26.3 % (see Tables 1, 2). In contrast to SD patients with severe severity, practically healthy women had significantly higher or a tendency to have higher SFT values on the abdomen, side, thighs and shin, as well as a tendency to lower SFT values at the lower angle of the scapula (see Tables 1, 2).

The size and structure of the body as morphogenetic markers in the plane of the constitutional integrity of the organism are studied in connection with the adaptive potential of man during ontogenesis, taking into account the influence of the environment. The study of the patterns of intersystem connections makes it possible to further develop a set of criteria for prognostic assessment of the risk of SD on the basis of the phenotypology of anthropometric indicators.

Conclusion

1. Patients with SD of varying severity men and women, compared with healthy men and women, found significantly higher values of SFT on the shoulders, chest, thighs and shin (only in women with mild severity), as well as lower values of SFT on the side.
2. There is only a tendency to higher values of SFT on the thigh in patients with severe SD men, as well as significantly higher values of SFT on the posterior surface of the shoulder in patients with severe SD women, than in men or women with mild severity disease.
3. Among patients with SD of varying severity, minor manifestations of sexual dimorphism of SFT were found only in people with severe disease, namely - significantly higher or a tendency to higher values of SFT in the anterior surface of the shoulder, forearm and shin in women.

References

Особливості товщини шкірно-жирових складок у хворих на себорейний дерматит різного ступеня важкості

Хасавнех А

Різного ступеня важкості особливості товщини шкірно-жирових складок у чоловіків і жінок хворих на себорейний дерматит

У дослідженні особливостей формування дерматиту досвідчено значної прогресивності. Вона зумовлена наявністю та клінічній картинах ураження шкіри. Проведення детального аналізу особливостей будови та розміру тіла в комплексі з клініко-інструментальними дослідженнями дозволить надати провідність більш достовірних результатів під час фізичного обстеження таких хворих. Мета дослідження - встановити та проаналізувати особливості товщини шкірно-жирових складок у хворих на себорейний дерматит різного ступеня важкості. Проведено визначення товщини шкірно-жирових складок (ТШЖС) у 40 чоловіків і 40 жінок (віком від 25 до 44 років) хворих на генералізовану жирну форму себорейного дерматиту легкого та тяжкого ступені важкості. Контрольну групу складали показники ТШЖС практично здорових людей. Контрольну групу складали показники ТШЖС практично здорових людей (n=82) жінок (n=154) аналогічної вікової групи з банку даних науково-дослідного центру Вінницького національного медичного університету ім. М. І. Пирогова. Статистична обробка показників товщини шкірно-жирових складок проведена в підсумковому пакеті "Statistica 6.0" із використанням непараметричних методів статистики. У хворих на себорейний дерматит легкого та тяжкого ступеня важкості особливості товщини шкірно-жирових складок були незначні. Встановлено мінімальні значення ТШЖС на задній поверхні плача (49,7 % і 46,5 %) та передній (на 41,9 % і 46,4 %) поверхні плача, на грудях (на 28,9 % і 27,9 %), на стегнах (на 47,3 % і 38,3 %), на передпліччях (лише порівняно з тяжким ступенем важкості на 18,5 %), під нижнім кутом попіткі (лише порівняно з тяжким ступенем важкості на 3,5 %) та на гомілці (лише порівняно з тяжким ступенем важкості на 15,9 %), а також більші значення ТШЖС на боці (на 36,7 % і 51,6 %), у хворих різного ступеня важкості жінок - також менш значення ТШЖС на задній поверхні плача (на 51,0 % і 43,6 %), на передній поверхні плача (на 46,6 % і 31,0 %), на грудях (на 31,3 % і 18,9 %), на стегнах (на 47,4 % і 38,9 %) та на гомілці (лише порівняно з тяжким ступенем важкості на 10,2 %), а також більші значення ТШЖС на боці (на 37,0 % і 44,6 %). Між хворими на себорейний дерматит різного ступеня важкості особливості встановлені лише більші значення у жінок з тяжким ступенем важкості ТШЖС на передній поверхні плача (на 22,6 %), а у чоловіків із тяжким ступенем важкості - більше значення ТШЖС на стегнах (на 14,6 %). Правило статистичної діагностики ТШЖС між хворими на себорейний дерматит різного ступеня важкості встановлені лише між хворими та жінками з тяжким ступенем важкості захворювання, а саме - більш значення у жінок ТШЖС на передній поверхні плача (на 28,6 %), на передпліччі (на 16,0 %) та на гомілці (на 26,3 %).

Ключові слова: себорейний дерматит, конституціональні особливості захворювань шкіри, українські особливості та жінки, антропометрія, мірчана шкірно-жирових складок, статеві розбіжності.