Malignant and benign skin neoplasms are multifactorial diseases, the development of which is perhaps most related to environmental factors. The search for constitutional markers for predicting the occurrence of these cancers has become one of the most promising areas of research in the field of oncology. The aim of the study was to establish the features of transverse body sizes in Ukrainian men with benign nevi. In Ukrainian men (aged 22-35 years) with benign nevi (melanocyte simple - 34, melanocyte dysplastic - 27, melanocyte congenital - 14 and non-melanocyte benign - 17), body diameters and pelvic sizes were determined. The control group consisted of similar size 82 healthy men 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 5.5" using non-parametric evaluation methods. Practically healthy Ukrainian men had significantly lower values than men with benign nevi, transverse middle thoracic, lower thoracic and anteroposterior mid-sternal torso diameters on the background of significantly greater shoulder width. Also in practically healthy men interspinous, intercrystal and intertrochanteric distances are significantly smaller than in patients with melanocyte benign simple nevi, and only interspinous and intercrystal distances are compared to non-melanocyte benign nevi. In patients with melanocyte simple nevi of men found: significantly higher values than in patients with melanocyte dysplastic nevi of transverse middle thoracic and lower thoracic diameters and all pelvic distances; significantly greater or tendency to greater values than in patients with melanocyte congenital nevi interspinous and intertrochanteric distances; significantly lower values than in patients with melanocyte congenital and non-melanocyte benign shoulder-width nevi. In patients with melanocyte dysplastic nevi found: significantly less important than in patients with melanocytic congenital nevi shoulder-width; tendencies to lower values than in patients with non-melanocyte benign nevi of transverse lower thoracic diameter, shoulder width and interspinous distance. The differences in body diameters and pelvic sizes between healthy and benign nevi in Ukrainian men, as well as between sick men are phenotypic markers that, together with other anthropometric indicators, identify risk groups for the possibility of benign nevi.

Keywords: benign nevi, transverse body sizes, Ukrainian men.

Annotation. Malignant and benign skin neoplasms are multifactorial diseases, the development of which is perhaps most related to environmental factors. The search for constitutional markers for predicting the occurrence of these cancers has become one of the most promising areas of research in the field of oncology. The aim of the study was to establish the features of transverse body sizes in Ukrainian men with benign nevi. In Ukrainian men (aged 22-35 years) with benign nevi (melanocyte simple - 34, melanocyte dysplastic - 27, melanocyte congenital - 14 and non-melanocyte benign - 17), body diameters and pelvic sizes were determined. The control group consisted of similar size 82 healthy men 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 5.5" using non-parametric evaluation methods. Practically healthy Ukrainian men had significantly lower values than men with benign nevi, transverse middle thoracic, lower thoracic and anteroposterior mid-sternal torso diameters on the background of significantly greater shoulder width. Also in practically healthy men interspinous, intercrystal and intertrochanteric distances are significantly smaller than in patients with melanocyte benign simple nevi, and only interspinous and intercrystal distances are compared to non-melanocyte benign nevi. In patients with melanocyte simple nevi of men found: significantly higher values than in patients with melanocyte dysplastic nevi of transverse middle thoracic and lower thoracic diameters and all pelvic distances; significantly greater or tendency to greater values than in patients with melanocyte congenital nevi interspinous and intertrochanteric distances; significantly lower values than in patients with melanocyte congenital and non-melanocyte benign shoulder-width nevi. In patients with melanocyte dysplastic nevi found: significantly less important than in patients with melanocytic congenital nevi shoulder-width; tendencies to lower values than in patients with non-melanocyte benign nevi of transverse lower thoracic diameter, shoulder width and interspinous distance. The differences in body diameters and pelvic sizes between healthy and benign nevi in Ukrainian men, as well as between sick men are phenotypic markers that, together with other anthropometric indicators, identify risk groups for the possibility of benign nevi.

Keywords: benign nevi, transverse body sizes, Ukrainian men.

Introduction

The formation of nevi is a complex, multicomponent process, the triggers of which are the interaction of both external and internal factors. It is known that there are certain mutations that promote the growth of various benign and malignant neoplasms of the skin, in particular this applies to various types of nevi. Such mutations include NRAS, HRAS, BRAF and GNAQ, which cause atypical migration and proliferation of certain cells within the skin [17].

From exogenous factors first of all allocate solar irradiation. According to Spanish researchers, 88.2 % of people with nevi have a history of sunburn last summer, and 75.8 % do not use creams with SPF15. In addition, correlations were found with a low phototype of the person and the burden of family history of skin cancer [12].

The prevalence of nevi is quite heterogeneous, and the full picture is difficult to imagine, as epidemiological studies performed on this topic are few. Examination of 287 patients at the Dermatological Outpatient Clinic of the University Hospital in Kraków revealed the following data: most were women (60.6 %), most often nevi were found on the soles (69.6 %), and the most common dermatoscopic picture of nevi was parallel furrow (42 %) [18].

In general, the extreme relevance of the study of nevi is primarily due to the possibility of their degeneration from a benign tumor to a malignant one, namely melanoma. One study found that 29.1 % of those diagnosed with melanoma probably came from an existing nevus [15]. In another study, involving 879 patients with halo nevi, data analysis revealed that 95 of those surveyed later developed melanoma [9].

The study of anthropometric markers in order to identify the most appropriate for clinical use (prediction of nevi) is one of the promising areas of oncodermatology.

The aim of the study was to establish the features of transverse body sizes in Ukrainian men with benign nevi.

Materials and methods

As a result of the conducted clinical-laboratory and pathohistological examination, 92 men aged 22 to 35 years were selected, among whom: with melanocyte benign simple nevi - 34; with melanocyte benign dysplastic nevi - 27; with melanocyte benign congenital nevi - 14; with nonmelanocyte benign nevi - 17. All patients signed a voluntary informed consent to participate in the study.

The diagnosis of nevi was established according to a two-stage algorithm for the classification of pigmented tumors, which was adopted at the First World Congress of Dermatoscopy (Rome, 2001) [16].

All patients were determined for transverse body size according to the method of V. V. Bunak [3].

As a control from the database of the research center of the National Pirogov Memorial Medical University, Vinnytsya were selected transverse body diameters and pelvic sizes.
dimensions of 82 practically healthy men of the same age group.

Statistical processing of the obtained results 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 U-Mann-Whitney test.

**Results. Discussion**

It was found that the transverse middle thoracic diameter in healthy men was significantly (p<0.001 in all cases) smaller than in men with melanocyte benign simple, dysplastic and congenital nevi and non-melanocyte benign nevi; and in men with melanocyte benign simple nevi - significantly larger (p<0.01) than in patients with melanocyte benign dysplastic nevi (Fig. 1).

Transverse mid-sternal diameter in healthy men is significantly (p<0.01-0.001) smaller than in men with melanocyte benign simple, dysplastic and congenital nevi and non-melanocyte benign nevi; in men with melanocyte benign dysplastic nevi - significantly smaller (p<0.01) than in patients with melanocyte benign simple nevi and tends to lower values (p=0.079) than in patients with non-melanocyte benign nevi (Fig. 2).

Anteroposterior mid-sternal diameter in healthy men is significantly (p<0.001 in all cases) smaller than in men with melanocyte benign simple, dysplastic and congenital nevi and non-melanocyte benign nevi (Fig. 3).

Shoulder width in healthy men is significantly (p<0.05-0.001) greater than in men with melanocyte benign simple, dysplastic and congenital nevi and non-melanocyte benign nevi; in men with melanocyte benign simple nevi - significantly lower (p<0.05-0.01) than in patients with melanocyte benign congenital and non-melanocyte benign nevi; in men with melanocyte benign dysplastic nevi - significantly lower (p<0.05) than in patients with melanocyte benign congenital nevi and has a slight tendency to lower values (p=0.083) than in patients with non-melanocyte benign nevi (Fig. 4).

Interspinous distance in healthy men is significantly (p<0.01-0.001) lower than in men with melanocyte benign and non-melanocyte benign nevi; in men with melanocyte benign simple nevi - significantly greater (p<0.05) than in patients with melanocyte benign congenital and non-melanocyte benign nevi; in men with melanocyte benign dysplastic nevi - significantly lower (p<0.05) than in patients with melanocyte benign congenital nevi and has a slight tendency to lower values (p=0.075) than in patients with non-melanocyte benign nevi (Fig. 5).

Intercristal distance in healthy men is significantly (p<0.01-0.001) lower than in men with melanocyte benign simple and non-melanocyte benign nevi; in men with melanocyte benign simple nevi - significantly greater (p<0.05) than in patients with melanocyte benign dysplastic nevi; in men with melanocyte benign dysplastic nevi - tends to lower values (p=0.075) than in patients with non-melanocyte benign nevi (Fig. 5).

Intercristal distance in healthy men is significantly (p<0.05-0.001) lower than in men with melanocyte benign simple and non-melanocyte benign nevi; in men with melanocyte benign simple nevi - significantly greater (p<0.05-0.001) than in patients with melanocyte benign dysplastic nevi; in men with melanocyte benign dysplastic nevi - tends to lower values (p=0.075) than in patients with non-melanocyte benign nevi (Fig. 5).
Transverse body sizes in men with benign nevi

(p<0.05) than in patients with melanocyte benign dysplastic nevi and tends to higher values (p=0.057) than in patients with melanocyte benign congenital nevi (Fig. 6).

Intertrochanteric distance in healthy men is significantly (p<0.01) lower than in men with melanocyte benign simple nevi; in men with melanocyte benign simple nevi significantly higher (p<0.05 in both cases) than in patients with melanocyte benign dysplastic and congenital nevi (Fig. 7).

Thus, when analyzing the transverse dimensions of the body between healthy and benign nevi men found (Table 1):

- transverse middle thoracic, lower thoracic and anterior-posterior mid-ternal diameters of the trunk in practically healthy men are significantly smaller than in patients with melanocyte benign simple nevi (respectively 12.0 %, 12.2 % and 13.6 %), melanocyte benign dysplastic nevi (6.8 %, 5.6 % and 10.3 %, respectively), melanocyte benign congenital nevi (respectively 10.8 %, 8.7 % and 13.6 %) and non-melanocyte benign nevi, respectively by 10.4 %, 10.6 % and 15.3 %);
- shoulder width in practically healthy men is significantly greater than in patients with melanocyte benign simple (12.6 %), melanocyte benign dysplastic (12.6 %), melanocyte benign congenital (6.2 %) and non-melanocyte benign nevi at 7.6 %);
- interspinous, intercristal and intertrochanteric distances in practically healthy men are significantly lower than in patients with melanocyte benign simple (7.6 %, 7.0 % and 5.7 %, respectively) and non-melanocyte benign nevi (only interspinous and intercristal by 6.8 % and 4.3 %).
- In the analysis of transverse body sizes between different groups of patients with benign nevi of men found (see Table 1):
  - significantly higher values in patients with melanocyte simple nevi than in patients with melanocyte dysplastic nevi - transverse middle thoracic (by 5.6 %) and lower thoracic (by 7.0 %) diameters and interspinous (by 4.7 %), intercristal (by 7.7 %) and intertrochanteric distances (by 5.4 %);
Table 1. Differences in transverse body size between healthy and benign nevi patients, as well as between sick men.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Healthy</th>
<th>MBSN</th>
<th>MBDN</th>
<th>MBCN</th>
<th>NMBN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse middle thoracic diameter</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Transverse lower thoracic diameter</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Anterior-posterior mid-sternal diameter</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Shoulder width</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Interspinous distance</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Intercristal distance</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Interorothacic distance</td>
<td>▲</td>
<td>·</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
</tbody>
</table>

Notes: MBSN - melanocyte benign simple nevi; MBDN - melanocyte benign dysplastic nevi; MBCN - melanocyte benign congenital nevi; NMBN - non-melanocyte benign nevi; ▲ or ▲ - significantly higher or lower values of indicators between healthy and sick men; ▲ or ▲ - significantly higher or lower values between MBSN men and other groups of sick men; ▲ or ▲ - tendencies to greater or lesser values between MBDN men and other groups of sick men; ▲ or ▲ - significantly higher or lower values between MBDN men and men with MBCN or NMBN; ▲ or ▲ - tendencies toward higher or lower values between MBDN men and men with MBCN or NMBN.

According to the analysis, the risk of developing non-melanoma skin cancer was 35 % (95 % confidence interval 28-42 %) lower in people with BMI≥30 versus 18.5-24.9 kg/m².

In another model-like study, the risk of basal cell carcinoma increased with increasing anthropometric growth, but decreased with increasing weight and BMI (data for both men and women) [7].

An analysis of the health of 19,593 Harvard graduates revealed a relationship between BMI and the risk of several cancers, including skin cancer (HR=1.29; 95 % CI=0.96-1.75) [8].

The density of melanocyte nevi of all sizes and sizes larger than 2 mm gradually increases with age from 44 (IQR 28, 60) and 5 (IQR 2, 8) in persons aged 7 to 9 years and up to 85 (IQR 55, 128) and 16 (IQR 8, 30) in persons aged 16 to 19 years. In addition, higher values of melanocyte nevi density were found in people with light color and 1-2 skin phototypes (p<0.001), freckles (p<0.005) and with a burdensome family history (p<0.05). In addition, higher values of melanocyte nevi density are observed in individuals with higher BMI values [10].

A meta-analysis of 5 studies showed that there is a weak relationship between reduced risk of basal cell carcinoma and higher human body mass index (odds ratio 0.94, 95 % CI0.84-1.04, P=0.40 %) [11]. In particular, according to another study [20], BMI in adults is inversely related to the risk of developing the disease at an early age (OR=0.43, 95 % CI=0.26-0.71).

When performing another meta-analysis using Review Manager 5.3, the authors of the study found a weak link between an increase in BMI≥25 kg/m² and an increased risk of melanoma of the skin (OR = 1.36; 95 % CI = 1.20-1.55) [13].

Observations by G. S. Naik et al. [14] suggest that measurements of skeletal muscle mass and body weight components in general are effective anthropometric measurements to predict the survival of melanoma patients treated with PD-1 blockade.
A nearly 13-year follow-up of more than 38,000 cancer patients, 13,547 of whom died, found that higher growth rates were associated with an increased risk of various cancers, including malignant melanoma of the skin [19]. Thus, it can be argued that anthropometry is widely used not only in oncology in general, but also in oncodermatology, which confirms the relevance of the study.

Conclusions and prospects for further development
1. In practically healthy Ukrainian men, compared with patients with benign nevi, against the background of significantly lower values of transverse middle thoracic, lower thoracic and anteroposterior middle-sternal diameters of the torso found significantly greater values of shoulder width, which is a manifestation of sick men subpathological constitutional type.

2. Among men with various forms of benign nevi, there are significantly higher values of most transverse body sizes (except for shoulder width) in patients with melanocytic simple nevi than in patients with melanocytic dysplastic nevi.

In further research it is necessary to assess somatotypological indicators and develop discriminant models of risk and characteristics of benign nevi in men of the first mature age, depending on the structure and size of the body.

References

Transverse body sizes in men with benign nevi
ОСОБЛИВОСТІ ПОПЕРЕЧНИХ РОЗМІРІВ ТІЛА У ЧОЛОВІКІВ ІЗ ДОБРОЯКІСНИМИ НЕВУСАМИ

Набіль Басім Юсіф Хаддад

Анотація. Злоякісні та добоякісні новоутворення шкіри є мультифакторіальними захворюваннями, розвиток яких чи не найбільше пов’язаний з факторами зовнішнього середовища. Пошук конституціональних маркерів для прогнозування виникнення таких онкологічних захворювань став одним з найбільш обнадійливих напрямків досліджень в області онкології. Мета дослідження - установити особливості поперечних розмірів тіла в українських чоловіків, хворих на добоякісні невуси. В українських чоловіків (віком 22-35 років), хворих на добоякісні невуси (меланоцитарні прості - 34, меланоцитарні диспластичні - 27, меланоцитарні вроджені - 14 та немеланоцитарні добоякісні - 17) проведено визначення діаметрів тулуба та розмірів таза. Контрольну групу становили аналогічні розміри 82 практично здорових чоловіків з банку даних науково-дослідного центру Вінницького національного медичного університету ім. М. І. Пирогова. Статистичну обробку результатів проведено в ліцензійному пакеті "Statistica 5.5" із використанням непараметричних методів оцінки. У практично здорових українських чоловіків встановлені достовірно менші значення, ніж у хворих на добоякісні невуси, поперечних середньогрудного, нижньогрудного та передньо-заднього середньогруднинного діаметрів тулуба та фоні достовірно більшого значення ширини плечей. Також у практично здорових чоловіків достовірно менші, ніж у хворих на меланоцитарні добоякісні прості невуси, міжостова, міжгребенева та міжвертлюгова відстані таза, а порівняно з немеланоцитарними добоякісними невусами - лише міжостова та міжгребенева відстані таза. У хворих на меланоцитарні прості невуси чоловіків встановлені: достовірно більш значення, ніж у хворих на меланоцитарні диспластичні невуси, поперечного середньогрудного та нижньогрудного діаметрів та усіх відстаней таза; достовірно більші відстані до більші значень, ніж у хворих на меланоцитарні диспластичні невуси міжгребеневої та міжвертлюгової відстаней таза; достовірно менші значення, ніж у хворих на меланоцитарні вроджені невуси ширини плечей. У хворих на меланоцитарні диспластичні невуси встановлені: достовірно менш значення, ніж у хворих на меланоцитарні вроджені невуси міжгребеневої та міжвертлюгової відстаней таза; достовірно менш значення, ніж у хворих на меланоцитарні вроджені невуси шириної плечей; тенденції до менших значень, ніж у хворих на меланоцитарні диспластичні невуси, поперечного нижньогрудного діаметра, ширини плечей та міжостової відстані таза. Встановлені відмінності діаметрів тулуба та розмірів таза між практично здоровими та хворими на добоякісні невуси українськими чоловіками, а також між хворими чоловіками з фенотиповими маркерами, що дозволяють у суккупності з іншими антропометричними показниками виявити групи ризику, щодо можливості виникнення добоякісних невусів. 

Ключові слова: добоякісні невуси, поперечні розміри тіла, українські чоловіки.