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Somatotypologic characteristics of gout patients — males

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44 gout male patients with sure diagnose (New York criteria), aged 44-55, have been studied. 11 anthropological features have been studied using the generally accepted classic methodics of Martin, Saller. The anthropometric data by S t. M u t a f o v et al. [7] and J a n e v et al. [8] for healthy Bulgarian population of the same age have been used for comparison. The data have been processed variation statistically. It has been found out that the differences in body massiveness dominate. Gout male patients are taller and have bigger body mass, chest width, pelvic width and torso length. These features are the basic elements of the endomorphic somatotype. The results are in agreement with literature data and our former results, according to which the gout is a disease definitely correlated with the endomorphic somatotype.

Key words: anthropology, physical development, somatometry, somatotype, gout.

Gout is one of the first diseases in connection with which constitutional predisposition is discussed [1, 2, 5]. The clinical experience, gathered in our country, in diagnosing and treatment of gout which becomes more frequent in Bulgaria as well as in other countries, directed us to investigate anthropometrically a group of gout patients [6]. According to literature data males of mature age suffer from it more often than women and the ratio varies from 4:1 to 20:1.

The aim of the present investigation is to study independently the biological information from anthropological features data, characterizing the somatotype of gout male patients.

An anthropometric investigation of 44 gout male patients with sure diagnose by the New York criteria aged 40—55, have been carried out. Most of them are watched over in the Clinics of Rheumatology (Sofia) and are periodically checked up.*

The metric data about 11 anthropological features as follows: main body characteristics (stature and weight), torso length, lengths of upper and low extremities, biacrominal circumference, sagital circumference, bicrystal circumference and three circumference features of body and extremities.

* The patients were committed for investigation by Assoc. Prof. Med. Dr K. Kanev, Assoc. Prof. Med. Dr T. Andreev and Med. Dr Bekjarova from the same Clinics.

Table 1. Comparative analyses of anthropological features in gout ill men and men from two control groups

Features	Gout	Control groups		T-criterion	
		Mutafov et al. [7]	Janev et al. [8]		
	$\bar{x}$	$\bar{x}$	$\bar{x}$	$T_{[7]}$	$T_{[8]}$
Stature	171,83	169,05	168,55	2,81	3,45
Weight	91,58	77,30	74,10	5,79	7,24
Chest circumference	110,63	98,10	95,08	8,82	11,19
Biacrominal circumference	40,92	39,61	38,60	3,02	5,45
Sagital circumference	25,27	22,95	21,73	5,96	9,44
Bicrystal circumference	33,00	31,42	28,83	3,19	8,62
Arm circumference	32,33		29,75	—	6,22
Thigh circumference	58,73	—	53,63	—	6,61
Torso length	57,34	54,16	-	4,92	—
Upper extremity length	76,66	75,72	—	1,65	—
Low extremity length	94,44	95,02	--	0,86	—

The anthropometric data by St. Mutafov et al. [7] and Janev et al. [8] for healthy Bulgarian population of the same age have been used for comparison.

The data have been processed variation-statistically. The reliability of the established differences has been verified by Student's T-criterion at significance level $p < 0,01$. The results are given in Table 1.

The comparative analysis of the anthropometric differences between gout male patients and two healthy control groups shows that the body volume differences dominate.

Statistically reliable differences are established for the stature, weight and chest circumference (Fig. 1). The gout male patients are with pronounced higher stature (171,83 cm) compared to the two male control groups (169,05 cm and 168,55 cm). The gout male patients are significantly heavier (91,54 kg) comparatively to the healthy males (77,30 kg and 74,10 kg). The men examined by us are with more massive chest. Their chest circumference is 110,63 cm, and the two control groups' 98,10 cm and 95,08 cm respectively.

Gout male patients have well developed shoulder girdle and their biacrominal diameter is 40,92 cm in comparison with the two control groups of healthy men — 39,61 cm and 38,60 cm (Fig. 2). The sagital diameter of chest for the investigated ill men is with 2-3 cm bigger 25,27 cm compared to the data by Mutafov et al. and Janev et al. control groups — 22,95 cm and 21,73 cm. The pelvis dimensions of the ill men are bigger — they have wider and more massive pelvis. Their bicrystal diameter is with 2,5 to 4,5 cm bigger comparatively to the two control groups. The differences are statistically significant.

The bitrochanterial diameter of the gout male patients is about 3 cm bigger than the one of the control group of Janev et al.

The lack of data for the control groups by Mutafov et al. and Janev et al. about all of the circumference features, investigated by us, allowed us to determine the

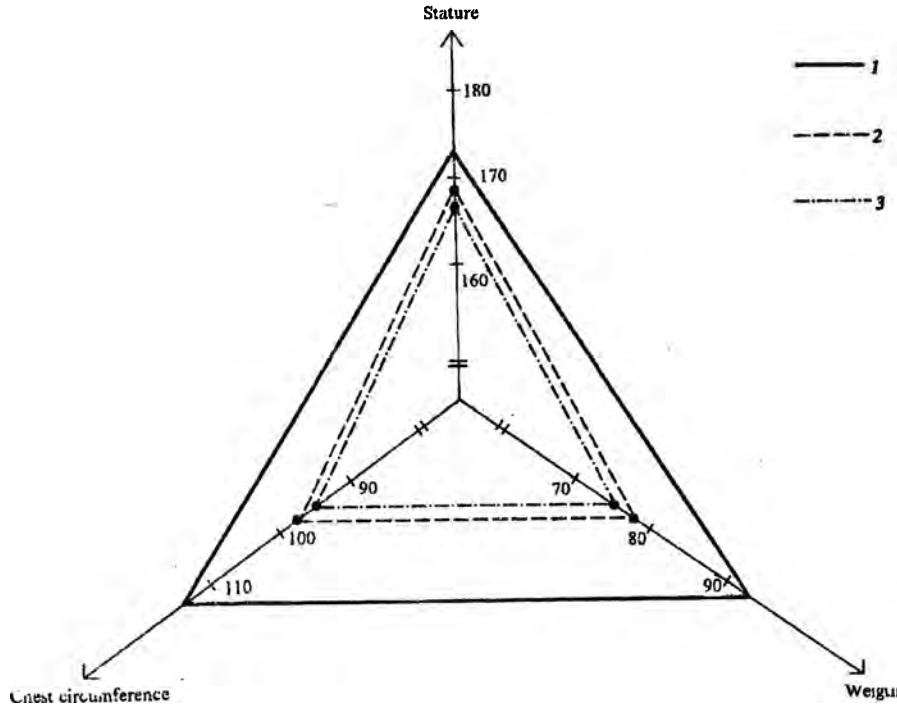

Fig. 1. Stature (cm), weight (kg) and chest circumference (cm) gout patients and two control groups of men
1 — gout; *2* — control (M u t a f o v et al. [7]); *3* — control (J a n e v et al. [8])

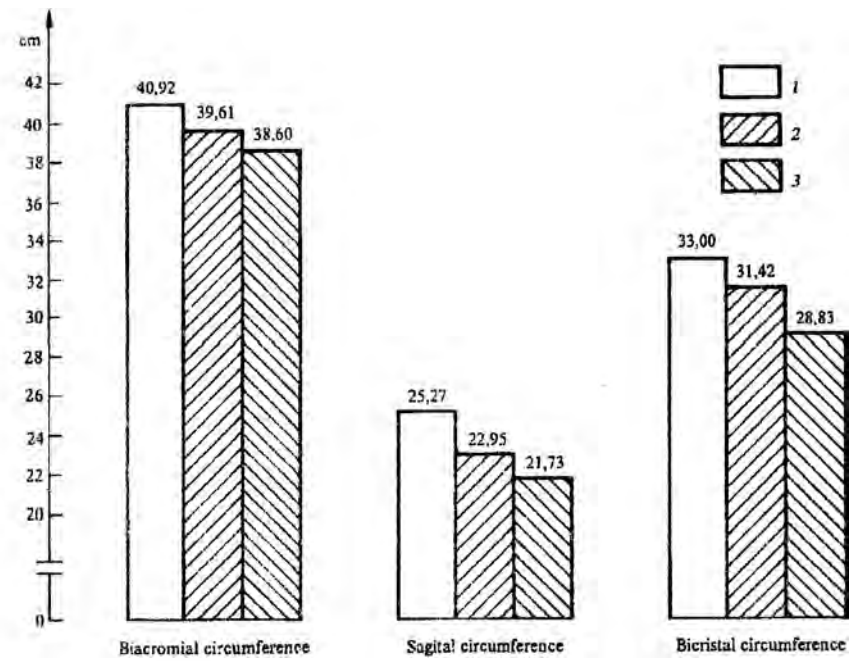

Fig. 2. Biacromial circumference (cm), sagital circumference (cm) and bicristal circumference (cm) of gout patients and two control groups of men
1 — gout; *2* — control (M u t a f o v et al. [7]); *3* — control (J a n e v et al. [8])

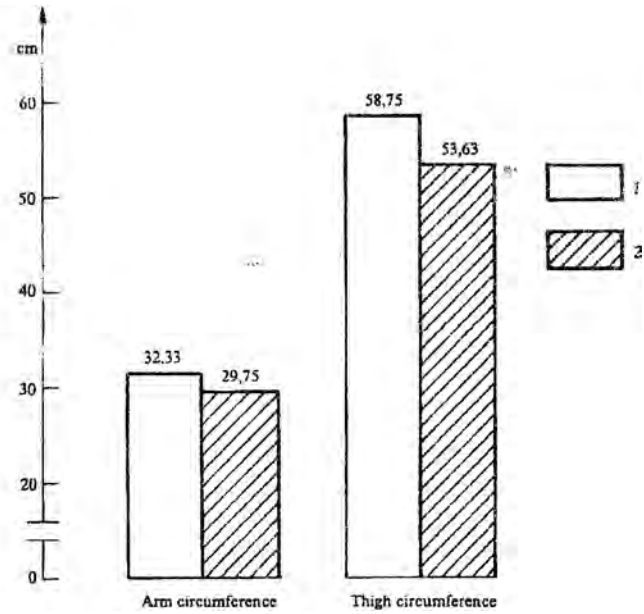

Fig. 3. Arm circumference (cm) and thigh circumference (cm) of gout patients and a control group of men
1 — gout; *2* — control (J a n e v et al. [8])

reliability of the statistical differences for the circumferences of arm and thigh only. The comparison with the data for healthy people by Janev et al. shows that the circumferences of arm and thigh of gout patients are with about 3 cm and 5 cm respectively bigger (Fig. 3). The established differences in circumference dimensions confirm the results obtained in the analysis of the data for the diameters of chest and pelvis, which show well developed shoulder girdle, massive chest and wide pelvi

From the data for the other anthropological features it is established that go patients have longer torso length comparatively to healthy men according to Janev et al. data.

In summary, the anthropometric status of the patients, investigated by us is characterized with big weight, long torso, massive chest and shoulder girdle and wide pelvis.

It can be said on the basis of the results obtained up to now, that even without constitutional diagnosis done to gout male patients, the data from directly investigated anthropometrical features allow to determine their somatotype as endomorphic. As it is known from out previous studies [3] and from the results of other authors who studied the constitutional predisposition towards certain diseases, the gout definitely is related with the endomorphic somatotype.

Practically, the results from the present study may be used in medicine practice without necessarily making constitutional diagnosis. The excessive fatness of family burdened endomorphic males is one of the risk factors provoking gout.

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