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EFFICIENCY OF THE USING THE PREPARATION URSOSAN FORTE IN PATIENTS WITH METABOLIC SYNDROME



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МЕТАБОЛИК СИНДРОМ БЎЛГАН БЕМОРЛАРДА УРСОСАН ФОРТЕНИ КЎЛЛАШ САМАРАДОРЛИГИ

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ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕПАРАТА УРСОСАН ФОРТЕ У БОЛЬНЫХ С МЕТАБОЛИЧЕСКИМ СИНДРОМОМ

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Резюме. *Метаболик синдром (МС) билан касалланган 40 киши текширилди. Умуман олганда, қон зардобидаги интерлейкин-6 (ИЛ-6) ва интерлейкин-17 (ИЛ-17) миқдори Урсосан форте билан иммунокоррекциядан олдин ва кейин аниқланган. МСда (ИЛ-6) ва (ИЛ-17) даражаси ошганлиги аниқланган. Терапия цитокин ҳолатига ижобий таъсир кўрсатди.*

Калит сўзлар: *метаболик синдром, иммунокоррекция, урсосан форте, цитокин ҳолати.*

Abstract. *40 persons with MS were examined. All persons determined by the content IL-6, IL -17 in the blood serum before and after immune disorders correctiveby Ursosan forte. It is established that the MS increases the level of IL-6 and IL-17. The therapy had a positive impact on cytokine status.*

Keywords: *metabolic syndrome, immune disorders, ursosan, cytokine status.*

Introduction. Metabolic syndrome is a cluster of factors associated with an increased risk of atherosclerotic cardiovascular disease and diabetes mellitus [4-17]. In recent years, this syndrome has attracted close attention from cardiologists, endocrinologists and general practitioners. This is due to the widespread occurrence of this symptom complex in the population.

Currently, one of the main factors in the development of cardiovascular vascular pathology is considered to be an immune inflammation. Elevated inflammatory indicators such as interleukins (IL)-1, 6, tumor necrosis factor- (TNF-α) are associated with a high risk of complications in cardiac pathology and considered to be immunological markers of cardiovascular risk [2]. The main 'metabolic risk factors' are atherogenic dyslipidaemia, elevated blood pressure, elevated plasma glucose, prothrombotic state and proinflammatory state. The presence of this cluster of factors in a particular patient is referred to using the clinical concept of "metabolic syndrome" [18], and it is not necessary for all metabolic risk factors to be present in order to diagnose this phenomenon.

Interleukin-6 (IL-6) is synthesized by monocytes/macrophages, less by fibroblasts, endothelial cells during inflammation, trauma, hypoxia and exposure to bacterial endotoxins [1]. The biological role of IL-6 lies primarily in the induction of repair mechanisms and activation of immune protection (activation and differentiation of T-cells, maturation of B-cells, synthesis of C-reactive protein in the liver, enhancement of hematopoiesis). In addition, IL-6 is also known to inhibit the inflammatory response by inhibiting the synthesis of a number of pro-inflammatory substances, including tumour necrosis factor a (TNFa) [1]. In the last decade, the role of IL-6 in the regulation of metabolism has been established. Interest in IL-6 has particularly increased with the discovery of the adipose tissue inflammation phenomenon in obesity and the search for its pathogenetic mechanisms. Besides the research interest in this side of cytokine action, the practical aspect is important due

to the increase in metabolic diseases: obesity, metabolic syndrome (MS), type 2 diabetes mellitus (DM-2) and related atherosclerosis and its consequences.

Due to the range of inherent pleiotropic properties (choleretic, cytoprotective, immunomodulatory, anti-apoptotic, hypocholesterolemic, and litholytic), Ursosan forte has a wide range of therapeutic effects. This article discusses the mechanism of action and clinical effects of this drug. [3-4].

Objective. The aim of our work was to study the content of interleukins 6 and 17 in patients with metabolic syndrome before and after therapy with Ursosan forte.

Materials and Methods. We examined clinical and immunological parameters of 40 subjects, including 18 females and 22 males aged 25-55 years old with a body mass index of 25.0-32.2 kg/m2 and 30 healthy controls.

Metabolic syndrome was identified on the basis of the International Diabetes Federation criteria (IDF, 2007). All subjects were measured for interleukin IL-6 and IL-17 in blood serum by ELISA test using Vector-Best test system, Russia, and a set of anthropometric data (height, weight, body mass index, waist circumference and hip circumference).

All patients were prescribed the drug, Ursosan forte 500 mg at night for 30 days on a hypocaloric diet.

All patients were informed about the forthcoming treatment and their written consent was taken.

The patients were divided into groups according to their BP and BMI.

Depending on blood pressure level, patients were divided into 2 groups: those whose blood pressure did not exceed 140/80 mmHg (19 people) and those with blood pressure higher than 140/80 mmHg (21 people).

Depending on BMI, Group 1 included 20 patients with BMI less than 30 kg/m2 and Group 2 included 20 patients with type I obesity (BMI greater than 30 kg/m2).

The data were statistically processed using a PENTIUM- IV personal computer using the programs developed in the EXCEL package with the library of statistical functions.

Study results. Table 1 presents data on IL-6 and IL-17 content in blood serum in MS depending on BP level before and after monotherapy with ursosan forte.

As it can be seen from the table, IL-6 level before treatment in patients with MS without AH is 2.8 times higher than in healthy persons, and IL-17 content is more than 6 times higher ($p<0.001$). Similar changes were revealed in MS patients with AH. Thus, the IL-6 content was 5.3 ± 0.5, and IL-17 - 2.8 ± 0.23 (more than 3 and 6 times the control values, respectively). After the conducted treatment, only a tendency to a decrease of IL-6 and IL-17 levels was registered in both groups, but their content was still high and significantly differed from the control values ($p<0,001$).

The examination of group 1 patients depending on BMI revealed that IL-6 and IL-17 serum levels significantly exceeded the normative values. Thus, at control values of IL-6 -1,55±0,25 its values were increased up to 3,01±0,18 ($p<0,001$), and IL-17 content increased 6-fold and amounted to 2,7±0,15 against 0,45±0,22 in group of healthy patients.

Table 1. IL-6 and IL-17 in MS depending on BP

Parameters	Before treatment		After treatment	
	IL-6	IL-17	IL-6	IL-17
MS withour HT	4,4±0,75	2,9±0,19	3,1±2,8	2,7±1,3
MS with HT	5,3±0,5	2,8±0,23	3,02±1,7	2,8±1,5
Control	1,55±0,25	0,45±0,22	1,55±0,25	0,45±0,22
P value	p<0,001	p<0,001	p<0,001	p<0,001
p_1 value	p>0,05	p>0,05	p>0,05	p>0,05

Note: p-validity relative to the control group, p1-validity relative to the 2 groups.

Table 2. IL-6 and IL-17 content in MS depending on BMI before and after treament

Parameters	Before treatment		After treatment	
	IL-6	IL-17	IL-6	IL-17
BMI <30kg/m^2	3,01±0,18	2,7±0,15	2,3±1,4	2,3±0,9
BMI >30kg/m^2	6,94±0,34	2,9±0,28	5,1±1,9	3,2±1,6
Control	1,55±0,25	0,45±0,22	1,55±0,25	0,45±0,22
P value	p<0,001	p<0,001	p<0,001	p<0,001
p_1 value	p<0,001	p>0,05	p<0,001	p>0,05

Note: p-validity relative to the control group, p1-validity relative to the 2 groups

In blood of the 2nd group patients with MS, the IL-6 content sharply increased and was 6,94±0,34, which was 4,5 times higher than in healthy persons ($p<0,001$), and more than 2 times higher than in the 1st group patients.

IL-17 content in blood serum of patients with obesity exceeded the control values more than 6 times ($p<0,001$), but no difference with the indices of the 1st and 2nd groups patients was found ($p>0,05$).

After application of Ursosan forte, the levels of IL-6 and IL-17 in the blood serum of the 1st group of examinees slightly decreased, the 2nd group patients showed a reliable decrease of IL-6 after treatment ($p<0,001$), but its values remained high and reliably differed from the levels of healthy patients ($p<0,001$).

Thus, our investigations show, that metabolic syndrome is associated with activation of cytokine system, expressed in manifold increase of IL-6 and IL-17 in blood serum. It should be noted, that in patients with MS without AH and with AH the contents of the studied cytokines were practically identical. The conducted therapy had a positive effect on cytokine status.

The levels of IL-6 and IL-17 in patients with BMI over 30 kg/m2 were significantly higher than those in patients with BMI under 30 kg/m2. Therapy resulted in a decrease in IL-6 and had no significant effect on IL-17.

Conclusions:

1. The activation of cytokine system occurs in metabolic syndrome and manifests as a significant increase of IL-6 and IL-17 in blood serum.

2. IL-6 and IL-17 levels are significantly higher in obese patients than in overweight patients.

3. therapy with ursosan forte showed a positive effect on cytokine status.

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ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕПАРАТА УРСОСАН ФОРТЕ У БОЛЬНЫХ С МЕТАБОЛИЧЕСКИМ СИНДРОМОМ

Авазова Т.А., Зиядуллаев Ш.Х., Ахмедов И.А.

Резюме. *Обследовано 40 человек с метаболическим синдромом (МС). У всех определяли содержание интерлейкина -6 (IL-6) и интерлейкина -17 (IL-17) в сыворотке крови до и после иммунокоррекции препаратом Урсосан форте. Установлено, что при МС повышен уровень (IL-6) и (IL-17). Проведенная терапия оказала положительное влияние на цитокиновый статус.*

Ключевые слова: *метаболический синдром, иммунокоррекция, урсосан форте, цитокиновый статус.*