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ТИББИЁТДА ЯНГИ КУН НОВЫЙ ДЕНЬ В МЕДИЦИНЕ NEW DAY IN MEDICINE

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THE IMPORTANCE OF CORRECTING VITAMIN D DEFICIENCY IN RHEUMATOID ARTHRITIS

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✓ Resume

RA is an autoimmune disease characterized by chronic inflammation of connective tissue, leading to joint damage and functional impairment. Current treatment strategies focus on early diagnosis, aggressive anti-inflammatory therapy, and the use of innovative gene-engineered biological drugs (GEBD) in combination with traditional medications like methotrexate. The goal is to achieve clinical remission, reduce joint damage, and improve patients' quality of life. While GEBDs have shown efficacy in RA treatment, their early use may not always be necessary or cost-effective. Additionally, the role of vitamin D deficiency in RA pathogenesis and joint remodeling post-pandemic is being explored.

Keywords: rheumatoid arthritis, vitamin D, joints syndrome

ВАЖНОСТЬ КОРРЕКЦИИ НЕДОСТАТКА ВИТАМИНА D ПРИ РЕВМАТОИДНОМ АРТРИТЕ

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✓ Резюме

РА — аутоиммунное заболевание, характеризующееся хроническим воспалением соединительной ткани, приводящее к повреждению суставов и функциональным нарушениям. Современные стратегии лечения сосредоточены на ранней диагностике, агрессивной противовоспалительной терапии и использовании инновационных генно-инженерных биологических препаратов (GEBD) в сочетании с традиционными лекарствами, такими как метотрексат. Целью является достижение клинической ремиссии, уменьшение повреждения суставов и улучшение качества жизни пациентов. Хотя ГИБП показали эффективность в лечении РА, их раннее использование не всегда может быть необходимым или экономически эффективным. Кроме того, изучается роль дефицита витамина D в патогенезе РА и ремоделировании суставов после пандемии.

Ключевые слова: ревматоидный артрит, витамин D, суставной синдром.

REVMATOID ARTRITIDA D VITAMINI ETMASHISHINI TUZISHNING AHAMIYATI

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✓ **Rezyume**

RA - biriktiruvchi to'qimalarning surunkali yallig'lanishi bilan tavsiflangan otoimmün kasallik bo'lib, bo'g'imlarning shikastlanishiga va funktsional buzilishlarga olib keladi. Hozirgi davolash strategiyalari erta tashxis qo'yish, agressiv yallig'lanishga qarshi terapiya va metotreksat kabi an'anaviy dorilar bilan birgalikda innovatsion gen-muhandislik biologik preparatlarini (GEBD) qo'llashga qaratilgan. Maqsad - klinik remissiyaga erishish, bo'g'imlarning shikastlanishini kamaytirish va bemorlarning hayot sifatini yaxshilash. GEBDlar RA davolashda samaradorlikni ko'rsatgan bo'lsa-da, ulardan erta foydalanish har doim ham zarur yoki iqtisodiy jihatdan samarali bo'lmasligi mumkin. Bundan tashqari, D vitamini etishmovchiligining RA patogenezida va postpandemiyadan keyingi bo'g'imlarni qayta qurishdagi roli o'rganilmoqda.

Kalit so'zlar: revmatoid artrit, D vitamini, bo'g'imlar sindromi

Relevance

Currently, despite the fact that the important pathogenetic processes in RA have been studied, there are several difficulties in treating it in the practice of doctors. The fact that the basic drugs that are widely used as RA treatment methods do not solve all problems requires attention to comorbid conditions, another cause of joint structure remodeling. In particular, the fact that vitamin D deficiency affects the immunological processes related to the pathogenesis of systemic inflammation has a clear effect on the development of structural changes in the joints, that is, remodeling and the mechanisms of its development in RA.

The purpose of the study: To determine the correction algorithm aimed at the dynamics of vitamin D levels in patients with RA, in the clinical course of the disease and the socio-economic effectiveness of the study.

Result and discussions

88% of RA patients (n=50) included in the study were women. Based on the analysis of the data in the anamnesis of the disease, the average age of the patients at the time of the first symptoms of RA was 28.2 ± 4.4 . The average time from the onset of symptoms to diagnosis was 7.9 ± 2.6 months. Disturbances in the functional state of the joints can be associated with specific changes in the inflammatory process in the joint.

In fact, the acute phase indicators of inflammation and the duration of morning stiffness observed in the joint, as well as the number of inflamed joints, which were determined in the patients (Table 1), had an impact on the degree of limitation of the functional possibilities of the joints. In turn, patients differed with polyarthritis. In both groups of patients, synovitis was observed in 100% cases, and it was mostly isolated and sometimes accompanied by periartthritis in the form of bursitis or tendinitis. According to the results of the analysis, patients consulted different doctors up to 8.2 ± 1.45 times between the first symptoms of RA and the diagnosis. As shown in Table 1, patients in both groups had high DAS28 activation (>5.1) in almost half and were closely related to different stages of presentation. In turn, the functional state of the joints was mostly at the level of the HAQ index of 0.5 and class I-III functional level.

According to the results of the study conducted within the ACR criterion, the positive effect on disease activation through the used algorithm is important in ensuring the achievement of clinical remission. However, there were no significant differences ($r > 0.05$) between the groups, although a trend in the dynamics was observed in both groups at the end of the 3rd month of the intervention. However, as shown in Figure 1, at the end of 12 months, a difference ($r < 0.05$) was found between the groups based on the ACR 50 criterion. In this case, it was observed in 73.3% cases in the main group, and in 55% cases in the control group, and the fertility rate was $\Delta 18.3\%$.

In turn, the restoration of vitamin D deficiency led to the limitation of the progression of the disorders in the joint structure and the expansion of the joint's functional capabilities. Indeed, performance evaluations of joint functional activity showed differences between groups.

Table 1.

Clinical-functional description of groups

Indications	Main group	Control group
R^o-stages:		
I (%)	40	40
II (%)	30	35
III (%)	23,3	20
IV (%)	6,7	5
DAS28:		
< 2,6 (%)	0	0
2,6 — 3,2 (%)	16,7	15
3,2 — 5,1 (%)	33,3	40
> 5,1 (%)	50	45
Functional class:		
I (%)	26,7	30
II (%)	36,7	40
III (%)	30	25
IV (%)	6,6	5
HAQ:		
< 0,5 (%)	0	0
0,5 — 1 (%)	30	30
1 — 2 (%)	33,3	30
> 2 (%)	36,7	40
Joint syndrome		
Arthritis involving more than three joints, %	100	100
Morning stiffness, hours	135,5±56,7	146,5±61,2
Arthritis of the palm of the hand, %	100	100
Symmetrical arthritis, %	100	100
Number of painful joints	9,7±4,4	8,7±5,3
Number of swollen joints	6,5±3,2	5,6±3,3
ESR, mm/hour	39,4±16,3	38,8±13,9
VAS, cm	8,9±1,2	8,5±1,7
Vitamin D		
25(OH)D ng/ml	15,4±6,9	17,1±7,2

In particular, in patients with RA, functional activity of the joints within the range of $36 \leq \Delta \text{HAQ} < 0.80$ (satisfactory effect) was achieved only at the end of the 3rd month of observation. As mentioned above, although there was no statistically significant difference between the two groups in ACR 50 at the end of the 3rd month, the main group differed reliably from the control group by $36 \leq \Delta \text{HAQ} < 0.80$. As shown in Table 2, within the range of $36 \leq \Delta \text{HAQ} < 0.80$, at the end of the 3rd month, 50% of cases occurred in the main group and 30% in the control group, that is, the growth rate Δ was 20%. According to the data presented in Figure 2, the algorithm used based on the BD method in the main group achieved clinical improvement in the dynamics of IL-6 in the blood serum of patients during the course of the disease.

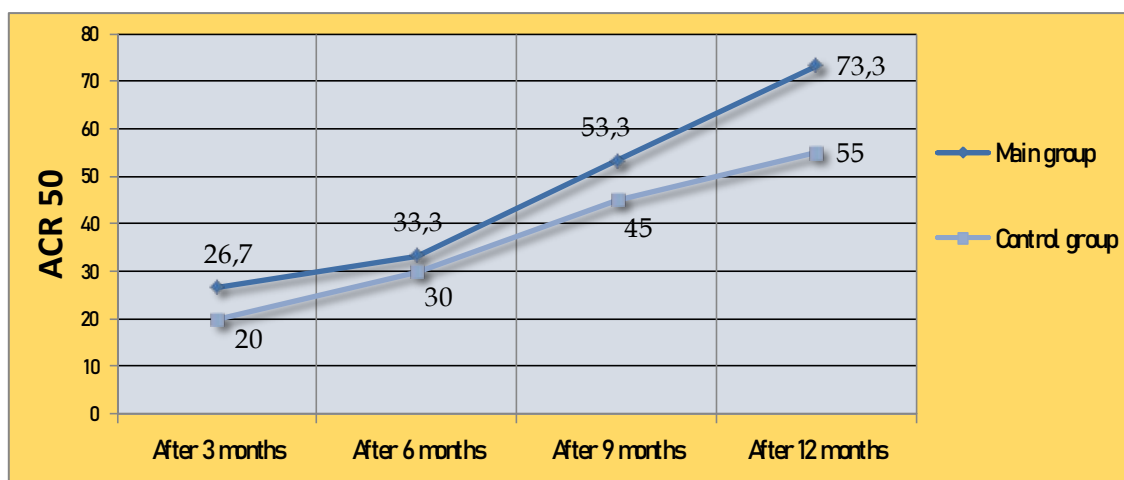


Figure 1. The dynamics of efficacy in groups according to ACR 50 (%).

Table 2.

Dynamics of the functional state of joints on the basis of treatment (%)

Functional condition (score)		Main group, n=30	Control group, n=20	Δ %	P
$\Delta\text{NAQ} < 0,22$	3 months	6,7	45	-38,3	$r < 0,01$
	6 months	3,37	30	-26,63	$r < 0,02$
	9 months	6,77	15	-8,23	$r > 0,05$
	12 months	3,37	10	-6,63	$r > 0,05$
$0,22 \leq \Delta\text{NAQ} \leq 0,36$	3 months	26,77	20	6,77	$r > 0,05$
	6 months	20	15	5	$r > 0,05$
	9 months	10	25	-15	$r < 0,05$
	12 months	10	25	-15	$r < 0,05$
$0,36 \leq \Delta\text{HAQ} < 0,80$	3 months	50	30	20	$r < 0,05$
	6 months	56,77	40	16,77	$r < 0,05$
	9 months	70	45	25	$r < 0,01$
	12 months	73,37	55	18,37	$r < 0,02$
$\Delta\text{HAQ} \geq 0,80$	3 months	16,77	5	11,77	$r < 0,05$
	6 months	20	15	5	$r > 0,05$
	9 months	13,37	15	-1,63	$r > 0,05$
	12 months	13,37	10	3,37	$r > 0,05$

In particular, the amount of IL-6 in the main and control groups after 3 months of treatment was found to be significantly reduced ($r < 0,05$) compared to the initial values. However, according to the observational results, after 12 months, a difference was found between the two groups, i.e., in the main group, it was 7.1 ± 0.5 pg/ml, and in the control group, it tended to rise again by the end of 12 months and was 14.5 ± 3.7 pg/ml.

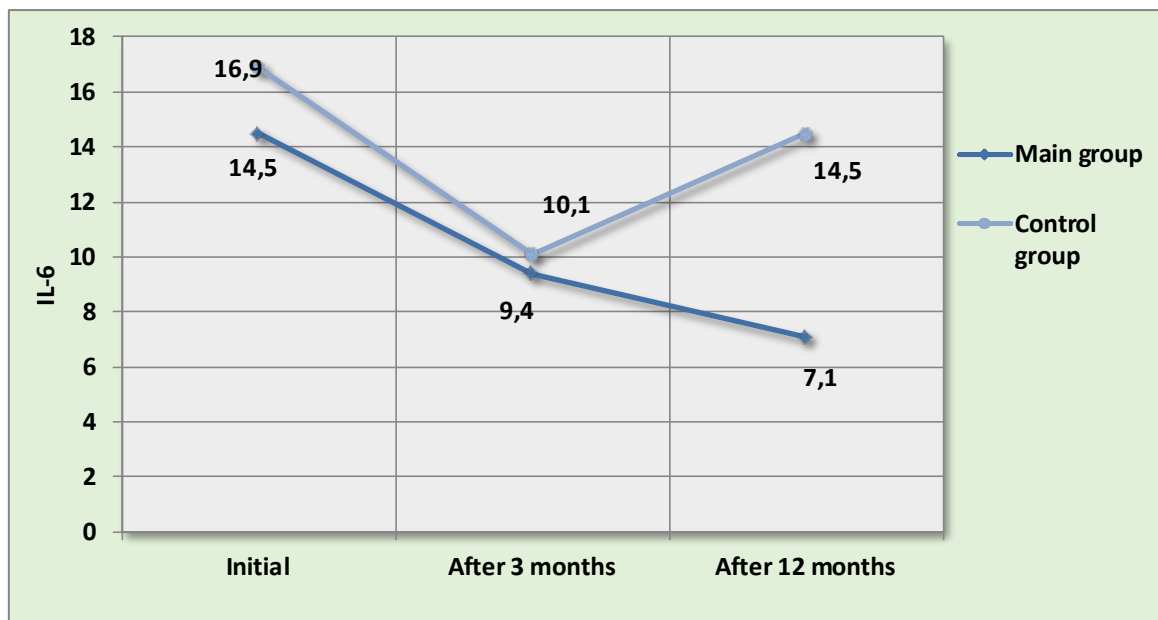


Figure 2. Dynamics of IL-6 levels based on treatment of RA patients.

Conclusion

The use of an algorithm aimed at the recovery of vitamin D deficiency is important in coordinating the treatment of the disease. It plays an important role in ensuring clinical remission and improving the functional capabilities of joints. In addition, there is a positive shift of IL-6 at its base, which prevents the deterioration of the joint structure and, moreover, the premature destruction of the joint bone and cartilage.

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