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ІНТЕРНЕТ-КОНФЕРЕНЦІЯ**

**«ТЕНДЕНЦІЇ ТА ПЕРСПЕКТИВИ РОЗВИТКУ  
НАУКИ І ОСВІТИ  
В УМОВАХ ГЛОБАЛІЗАЦІЇ»**



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В ПЕРЕЯСЛАВІ

Рада молодих учених університету

Матеріали  
Міжнародної науково-практичної інтернет-конференції  
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## МЕДИЧНІ НАУКИ / МЕДИЦИНСКИЕ НАУКИ

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### MODERN APPROACHES TO THE TREATMENT OF OSTEOARTHRISIS

*To date, the treatment of OA is aimed primarily at the symptoms of the disease, i.e., to reduce pain and improve the functional state of the joints. The use of NSAIDs allows you to quickly reduce the intensity of pain and accelerate the recovery of motor activity in OA. However, the use of this group of drugs is associated with the development of adverse events in the gastrointestinal tract, cardiovascular system, kidneys and other organs, which is especially important in comorbid conditions in elderly patients. In this regard, it becomes clear that there is a high interest in the group of drugs with a delayed symptomatic effect, which have proven themselves excellently in arthrological practice.*

**Key words:** *osteoarthritis, chondroitin sulfate, glucosamine, methylsulfonylmethane, ARTRA® MSM.*

#### **Introduction.**

Osteoarthritis of the knee joint is a pathological process, according to statistics, in 80% of patients it causes a noticeable decrease in the quality of life, and in 10-21% it causes disability.[1] The main goal of the treatment of osteoarthritis (OA) is primarily aimed at the symptoms of the disease, i.e., to reduce pain, improve the functional state of the joints, and ultimately improve the quality of life of patients.[2] International organizations have developed numerous guidelines for the treatment of OA, which include non-pharmacological and pharmacological methods, of particular interest among which are delayed-acting symptomatic drugs. Currently, these drugs are recommended as first-line drugs for the treatment of OA. Analgesics and NSAIDs are most often prescribed to reduce pain, and they often cause adverse events, especially in the elderly and in patients with comorbidities receiving concomitant treatment.[3] This creates the problem of drug interactions and may limit the prescription of a number of drugs, which determines the increase in interest in other drugs, called delayed symptomatic drugs, which have proven themselves in arthrology. A new group of drugs, the representative of which is artra msm with proven clinical efficacy. The components of ARTRA® MSM (INIPHARM.Inc. (USA) have an anti-inflammatory effect (the cause of pain), which allows you to refuse to take other drugs to eliminate pain and inflammation. [4] Artra ® MSM contains methylsulfonylmethane. This is an important organosulfur component, involved in the formation of cartilage. It is MSM that has an analgesic and anti-inflammatory effect, prevents the lack of sulfur in the body, due to the deficiency of which osteoarthritis begins to develop.[5]

The main goal of treating osteoarthritis is to reduce pain, improve joint function, limit disease progression, and ultimately improve quality of life.

#### **Materials and Methods.**

The study included 33 patients with gonarthrosis and coxarthrosis. Clinical examination of patients was performed at the beginning of the study and at the 6th month of treatment. As criteria for evaluating the action of ARTRA® MSM, the following were used: pain when walking and at rest at night, pain when walking up and down stairs (in points from 0 to 2), duration of morning stiffness (in minutes), overall assessment of the effectiveness and tolerability of treatment, carried out separately by the doctor and the patient. The study included patients with gonarthrosis in X-ray stages I-II according to Kellgen-Lowrence. In accordance with the ARTRA® study program, MSM was administered orally 2 tablets 1 time per day with meals for 2 months against the background of NSAIDs for 10 days. The study did not include patients with concomitant allergic diseases, impaired renal and hepatic function, and diabetes mellitus. Table

As follows from Table 1, the study was dominated by middle-aged women with a disease duration of more than 4 years. In 10,5% of patients, clinical manifestations of synovitis of the knee joints were noted.

**Table 1**

**Distribution of patients by gender and clinical form of gonarthrosis**

Total number of patients		33
Gender	Female	27(81,8%)
	Male	6(18,8%)
Average age (years)		58,4
Average duration of gonarthrosis (years)		4,1
Clinical form of gonarthrosis	G*	28(73,7%)
	GS**	4(10,5%)
	GC***	1(2,6%)

Note - \* gonarthrosis

\*\* - gonarthrosis with synovitis

\*\*\* - gonarthrosis with coxarthrosis

**Results.**

All patients included completed the course of treatment. In patients with gonarthrosis and coxarthrosis, the analgesic and anti-inflammatory effect of ARTRA® MSM was noted, which was confirmed by a decrease in pain when walking by 2,1 times, pain at rest (at night) by 4 times. And also there was a decrease in the duration of morning stiffness by 4 times, pain when walking down stairs by 1,2 times Table 2. The effectiveness of the drug was most pronounced in patients with stage I and II x-ray gonarthrosis, which made it possible to reduce the daily need for NSAIDs by 50 %. ARTRA® MSM also significantly influenced the Lequesne functional index. We found a pronounced decrease in clinical symptoms, which was determined by the end of the course of treatment, which indicated an improvement in the quality of life of patients and an increase in physical activity. see Table 2

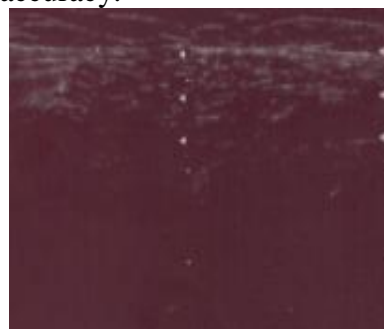
**Table 2**

**Dynamics of the main clinical indicators during treatment with ARTRA® MSM**

Clinical parameters	Before treatment	After treatment
Pain when walking	1,3+0,09	0,6+0,08*
Night pain	1,2+0,08	0,3+0,09*
Morning stiffness	0,8+0,11	0,2+0,08*
Pain when walking down stairs	1,7+0,09	1,4+0,09*
Pain when walking up stairs	1,8+0,07	1,3+0,09*

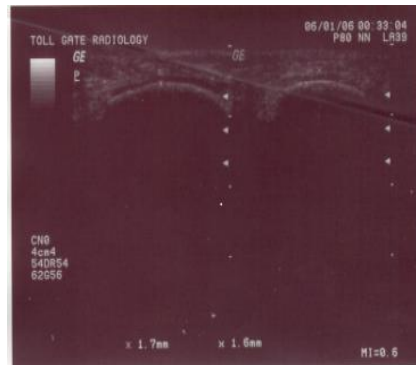
\*-P 0.05 in relation to the initial indicators

Picture 1. Structural changes were assessed during ARTRA® MSM therapy, and X-ray images with ultrasonographic determination of the width of the joint space were used, which reduced the measurement error and increased its accuracy.

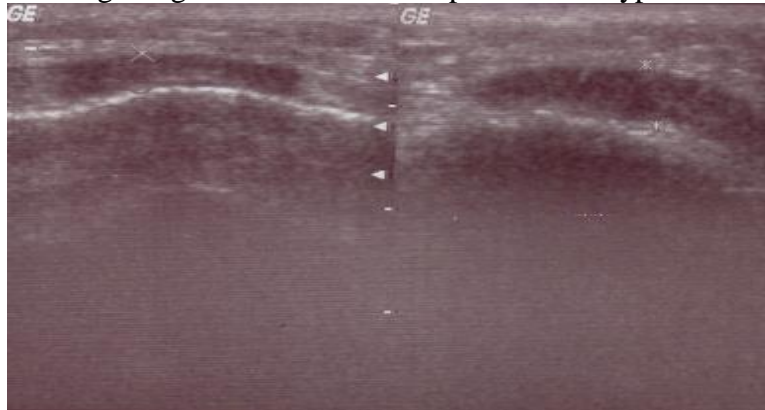


Picture 2. Ultrasound of the anterior groups of muscles and the knee joint in a patient with stage II goarthritis

The figure shows uneven thinning of the articular cartilage with the presence of hyperechoic inclusions.



Picture 3. The second stage of gonarthrosis with the presence of hyperechoic inclusions



As a result of the study, it can be concluded that ARTRA® MSM, by improving the metabolic processes in the cartilage, is an effective drug for the treatment of knee OA, it reduces pain, improves joint function in a complex short-term treatment with NSAIDs. Repeated ultrasound of the knee joints after 6 months showed stabilization of degenerative processes and the absence of progressive narrowing of the joint space. A pronounced decrease in clinical symptoms, which was determined by the end of the course of treatment, indicated an improvement in the quality of life of patients and an increase in their physical activity.

The good tolerability and safety of ARTRA® MSM, which did not cause serious adverse effects in our patients, should also be avenged. It was also important to maintain the action of ARTRA® MSM for 3 months after the end of its administration, this allows a reasonable break in treatment, which is important, both in terms of a lower drug load on the body and economic benefits.

### **Conclusion.**

Thus, the use of the drug in patients with OA contributed to a significant decrease in the severity of pain syndrome and improve the functional state of the joints. The properties of ARTRA® MSM, combined with a high safety profile, allow us to recommend them for the treatment of OA in real clinical practice. ARTRA® MSM are slow-acting symptomatic drugs, because their effect develops after 8-12 weeks of use, but unlike NSAIDs, they have a pronounced aftereffect. After stopping treatment, their effectiveness persists for 4-8, and sometimes more than weeks. They have a potential structure-modifying effect and high safety. Moreover, data and clinical studies indicate a reduction in the dose of NSAIDs and analgesics against the background of the use of ARTRA® MSM [3].



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#### ХАРАКТЕРИСТИКА ОСОБЕННОСТИ ТЕЧЕНИЯ КОРОНАВИРУСНОЙ ИНФЕКЦИИ И БРОНХИАЛЬНОЙ АСТМЫ У ДЕТЕЙ ШКОЛЬНОГО ВОЗРАСТА (ОБЗОР ЛИТЕРАТУРЫ)

*В данной статье изложен обзор литературы по современным литературным данным, а также изучены эпидемиология, клиническая картина, диагностика коронавирусной инфекции бронхиальной астмы у детей школьного возраста. На сегодняшний день ранняя инновационная диагностика, лечение и профилактика коронавирусной пневмонии у детей, является одной из самых актуальных проблем в педиатрической практике. Своевременное лечение БА у детей возможно только при ранней постановке диагноза, правильной оценке тяжести состояния больного ребенка, рациональном выборе препаратов с учетом возраста и веса ребенка.*

**Ключевые слова:** *дети, коронавирусная инфекция, бронхиальная астма, пульсоксиметрия, диагностика, профилактика.*

*This article provides a review of the literature on modern literature data, as well as studied the epidemiology, clinical picture, diagnosis of coronavirus infection of bronchial asthma in school-age children. Today, early innovative diagnosis, treatment and prevention of coronavirus pneumonia in children is one of the most urgent problems in pediatric practice. Timely treatment of asthma in children is possible only with an early diagnosis, a correct assessment of the severity of the condition of a sick child, a rational choice of drugs, taking into account the age and weight of the child.*

**Keywords:** *children, coronavirus infection, bronchial asthma, pulse oximetry, diagnostics, prevention.*