

Influence to Autoimmune Processes of Patients Suffering from Osteoarthritis

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Received: December 27, 2016; **Published:** January 03, 2017

In the past few years, it has become more obvious that osteoarthritis (OA) is one of the most widespread chronic disabling diseases. According to different epidemiological reports, nearly 80% of the population by the age of 60 are suffering from OA. Herewith most of them have some form of movement restriction, and 25% of them are unable to take care of themselves independently in everyday life. It is noted that OA is a problem, which is widespread throughout Ukraine.

Lately, great importance in OA diagnostics has been devoted to investigate OA pathogenesis autoimmune components. In particular, that of hyaluronic acid antibodies (HAAB) and collagen antibodies (CAB). Since hyaluronic acid and collagen are the main components of the cartilaginous tissue matrix.

The goal of our study is to determine the benefits of magnesium oil for patients suffering from the autoimmune processes of osteoarthritis.

Testing was conducted at the rheumatology department of Poltava Regional Clinical Hospital of Sklifosovsky N.V.

30 patients were chosen for this study (11 men, 19 women, with an average age of 61 ± 7 years), who are suffering from OA in the poignant stage. Diagnose was determined by the guidelines of American Rheumatology Association criteria due to the clinical and radiological data complexes of OA. The main first group (I) (consisting of 15 patients) held physiotherapy courses of 10 sessions of electrophoresis in addition to Magnesium Oil application. The second (II) group of 15 patients served as control group. This group was given a course of electrophoresis with "Fastum Gel" applications.

According to the given goal special interest was taken in the examination of both HAAB and CAB levels in the blood by immunofluorescence analysis method before therapy began (outgoing data) and in dynamic treatment in the 21 days allotted for this study.

In the 21 days the HAAB and CAB levels decreased in both groups but their dynamic make up was different due to the application method (Table 1). Concentration of the HAAB and CAB in the first Group significantly decreased on average to 2.13 ± 0.32 units of optical density and 1.04 ± 0.13 units of optical density in accordance to outgoing data ($t = 2.26$; $p < 0.05$ i $t = 2.29$; $p < 0.05$, accordingly). Another situation was in Group II in the analysis of the HAAB and CAB levels. Within the 21 days of the test the HAAB and CAB levels decreased (2.95 ± 0.21 units of optical density and 1.75 ± 0.22 units of optical density, accordingly). But we haven't determined statistically significant differences in comparison with outgoing data (3.54 ± 0.73 units of optical density and 2.43 ± 0.49 units of optical density): $t = 0.97$; $p > 0.05$. $t = 1.28$; $p > 0.05$ respectively.

Thus, we saw positive treatment in the autoimmune process which continued until the treatment end in both I and II group of our OA patients in our study.

Time of Blood Collection	I Group «Magnesium Oil». n = 15		II Group «Fastum Gel». n = 15	
	HAAB level	CAB level	HAAB level	CAB level
Start Data	3.76 ± 0.76	2.28 ± 0.52	3.54 ± 0.73	2.43 ± 0.49
In 21 days after therapy beginning	2.13 ± 0.32*	1.04 ± 0.13*	2.95 ± 0.21	1.75 ± 0.22
t	2.26	2.29	0.77	1.28
P	< 0.05	< 0.05	> 0.05	> 0.05

Table 1: Comparison analysis of HAAB and CAB levels in the groups of OA diseased who received electrophoresis with Magnesium Oil and Fastum Gel. $M \pm m$. units of optical density.

Remark: * – veracious differences with start data ($p < 0.05$).

But statistically significant differences in the HAAB and CAB levels between patients of Group I (the main group) and Group II (control group) in 21 days after treatment beginning ($p < 0.05$) were discovered. Positive therapeutic influence of Magnesium Oil was discovered to influence to autoimmune component of joints inflammation and tissue destruction. This was confirmed by decreasing the leading autoimmune markers of conjunctive tissue level antibodies for hyaluronic acid and collagen.

That, the course treatment with the Magnesium Oil allows the dramatic decreasing of autoimmune inflammation of conjunctive tissue marker levels in both the HAAB and CAB. The influence of Magnesium Oil to autoantibody levels in cases of OA shows proof of its anti-inflammation effect. and also doesn't exclude its chondroprotector effect. Magnesium Oil helps to provide a stabilization point in the inflammation process. for added prevention of the progression and amplification of disease complications in cases of OA.

Volume 5 Issue 2 January 2017

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