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Individual Arthrosis Therapy is possible

Comparative study on 154 patients with Gerontamin® and physical therapy

Abstract
154 patients with chondropathia patellae, cox- and gonarthrosis or juvenile impairment of the spine participated in a comparative study in order to test Gerontamin®, a compound preparation containing gelatin. The patients were divided into three groups. Group I was given physical therapy only, group II received Gerontamin® in addition and group III was given Gerontamin® only. In order to evaluate the three therapies, objective and subjective results were used. When the groups were compared, it became obvious that the physical therapy given by itself to the patients of group I had had little effect on pain reduction and movability. In comparison, all those patients treated with Gerontamin® (groups II and III) showed very definite improvement. However, no significant differences could be observed between these two groups. Therefore, this study undoubtedly shows that Gerontamin®-therapy alone (group III) as well as the combination of Gerontamin® and physical therapy (group II) achieve equally good results and are definitely superior to physical therapy alone. This means that patients for whom physical therapy is not indicated can be successfully treated with Gerontamin® only.

With increasing age, the nutritional status of the chondrocytes responsible for the maintenance of the structure and function of cartilage worsens.
In degenerative disease, metabolic disturbance of chondrocyte activity leads to qualitative change in the composition of the cartilage matrix.
The proteoglycanes which surround collagenous fiber within joint cartilage alter their primary structure and hence become susceptible to enzymatic degradation. Once protection has been lessened through a reduction of intact proteoglycanes (demasking), the collagen structure can be attacked enzymatically.
Even if a "repair" of degenerative cartilage is not possible, progressive disease can be prevented by meaningful substitution of important metabolites of cartilage metabolism.
Gerontamin® (Heilit/Reinbek) is a gelatin-containing combination preparation and is used for the treatment of degenerative joint disease. Apart from the principal active ingredient, which contains a specially manufactured type of gelatin, Gerontamin® contains the sulfur-containing amino acid L-cystine and retinol acetate (vitamin A).
Gerontamin® gelatin is characterized by a high content of hydroxyproline and hydroxylysine. Both amino acids occur in large quantities (12 to 14%) in collagen.
Thus, administration of Gerontamin® would be expected to stimulate collagen synthesis.
With respect to the therapeutic effect of cystine, the essential factor is that through stepwise oxidation of the reactive sulfur groups, precursors of chondroitin-6-sulfate can be produced. These are key substances in the metabolism of support substances.
Administration of Gerontamin® over a longer period of time achieves relief of pain and symptoms depending on the degree of damage involved.

General investigational conditions

Within the scope of a comparative study on a total of 154 patients (132 men, 22 women) suffering from chondropathy of the patella, cox- and gonarthrosis or juvenile disturbances of the vertebral column, the effect of Gerontamin® compared to physical therapy was investigated.
In order to be able to make meaningful statements regarding the comparison of efficacy, the patients were allocated to three groups - uniformly according to sex (table 1):

Group I :	Physical therapy
Group II:	Physical therapy + Gerontamin®
Group III:	Gerontamin®

Table 1: Distribution of patients according to diagnosis, average age, average duration of symptoms and type of treatment

	Chondropathy of the patella	Cox arthrosis/ Gonarthroses	Juvenile impairment of the spine	Total
Age Duration of symptoms	23.3 years 2.3 years	51.0 years 4.3 years	20.5 years 3.0 years	
Group I	21	22	6	49
Group II	21	17	6	44
Group III	30	25	6	61
Total	72	64	18	154

All physical therapy measures - including combinations of these- were used: iontophoresis, medium-frequency stimulating current, hydroelectric baths, ultrasonic treatment + DF (diadynamic current according to Bernard), microwave, massage, motion baths.
The patients in groups II and III were given one sachet of Gerontamin® per day. The period of treatment was three months. If this period was shorter, it was almost always the result of early improvement as only in the case of three patients (in group III) was medication stopped due to slight side-effects (feeling of satiation, pressure in the stomach).
Subsequent to initial examination, a control examination was carried out after six weeks as well as a concluding examination on completion of therapy (12 weeks).

Methods

At all three examinations, apart from the general status at the beginning of the study, differentiated movement of the joints and vertebral column were recorded. By comparing these parameters, objective assessment of the results was made possible.
In addition, on each occasion, patients had to indicate the type and intensity of pain experienced, both at rest and during various types of stress (running, climbing stairs, sport).
The following reports were made for the various diagnoses:

Chondropathy of the patella
Retropatellar frictional noises, pressure and displacement pain, facet pain, crepitation, joint mobility, patella rear surface.

Cox-/ gonarthrosis
Movement of joints according to the neutral - zero - method.

Juvenile structural disturbance of the vertebral column (Scheuermann's disease)
Schober sign (LWS), Ott sign (BWS), finger tip-to-floor distance, fixed or partially fixed round shoulders, segmental investigation.
The data collected were stored electronically and evaluated statistically using an "SAS" program.

Results

The patients were allocated to three groups differentiated by the treatment schematic.
Due to the randomization system used during allocation, comparability and hence meaningful assessment of therapeutic results is guaranteed.
Thus, there was no difference between individual groups in the initial values concerning subjective pain. However, already by the interim examination and, increasingly, at the final examination, it had been shown that treatment with Gerontamin® (groups II and III) had improved pain relief considerably.
The values obtained for both Schober and Ott signs (LWS, BWS) also show in a statistically significant way that, in the case of patients treated with Gerontamin®, the general mobility had been substantially improved in comparison to group I. A summarized illustration of therapeutic results are given in table 2.

Table 2: Therapy results

	Very good		Good		Noticeable		Unchanged		Total
	n	%	n	%	n	%	n	%	n
Chondropathy of the patella									
Group I	3	14	5	24	7	33	6	29	21
Group II	8	38	6	29	3	14	4	19	21
Group III	14	47	10	33	4	13	2	7	30
Cox- and gon-arthrosis									
Group I	—	—	1	5	8	36	13	59	22
Group II	—	—	9	53	6	35	2	12	17
Group III	—	—	13	52	10	40	2	8	25
Juvenile impairment of the spine									
Group I	—	—	1	17	3	50	2	33	6
Group II	1	17	1	17	4	66	—	—	6
Group III	2	33	3	50	1	17	—	—	6

Group I = physical therapy
Group II = physical therapy plus Gerontamin®
Group III = Gerontamin®

In 22 of the 105 patients treated with Gerontamin® (groups II and III), there was a "very good" improvement of symptoms, in the case of 42 patients a "good" and in the case of 38 patients a "noticeable" improvement (no improvement in the case of 10 patients).
On the other hand, in patients of group I, there were only 3 cases (chondropathy) of "very good", 7 cases of "good" and 18 cases of "noticeable" improvement whereby 21 were unaltered.
Side-effects occurred in three cases only (pressure in the stomach or satiation subsequent to ingestion), whereby these were cases of patients who had previously received medication. In all other cases, the compatibility was designated either as "very good" or "good".

Discussion

Gerontamin® proved to be successful in all cases where it could be assumed that cartilage capable of taking part in metabolism and hence capable of regeneration was available. Thus, therapeutic success in the case of younger patients suffering from chondropathy of the patella were particularly impressive. In contrast to the control group, which was given physical therapy only, those patients given Gerontamin® indicated significant improvement in their symptoms.
Of a total of 53 patients treated with Gerontamin® and suffering from chondropathy (groups II and III), 39 indicated very good to good improvement, 8 noticeable improvement of symptoms and, in 6 cases only, no improvement was registered.
In the case of patients suffering from not too progressive cox- or gonarthrosis (the average duration of symptoms was 4.3 years), there was significant pain relief combined with improved mobility in the majority of the patients.
Also in the case of juvenile impairment of the vertebral column good results were obtained by the administration of Gerontamin®. However, due to the low number of cases, these figures are not statistically significant.
The study makes it quite clear that treatment with Gerontamin® only (group III) as well as the combination of Gerontamin® with physical therapy (group II) delivered equally good results which were quite clearly superior to physical therapy alone.
Thus, patients where physical therapy measures are not indicated will be able to be treated successfully with Gerontamin® alone.
The compatibility of the preparation was extremely good. Of the 105 patients in the study, 102 assessed compatibility as being "very good" or "good". In only 3 patients were there reports of stomach pressure or satiation subsequent to ingestion.
Bearing in mind that joint conditions may be caused by nutritional deficiencies on the part of cartilage tissue and that pathophysiological changes can be brought about in the case of cartilage capable of regeneration by adding components necessary for the biosynthesis of cartilage substances, the excellent practical successes achieved in treating with Gerontamin® are now supported theoretically.

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