

# Efficacy and tolerability of mussel-Lyprinol<sup>®</sup> omega-3-complex on inflammatory rheumatoid disorders

Joerg Gruenwald, Ph.D.<sup>1</sup>

Hans-Joachim Graubaum, Ph.D.<sup>1</sup>

Knuth Hansen, M.D.<sup>2</sup>

Barbara Grube, M.D.<sup>2</sup>

<sup>1</sup> PhytoPharm Research, a unit of analyze & realize, Berlin (Germany)

<sup>2</sup> Private Surgery Kurfuerstendamm, Berlin (Germany)

## ABSTRACT

This 12 week drug monitoring study evaluated the effects of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex, on 50 adult men and women suffering from inflammatory rheumatoid arthritis. 34 of the 50 patients required medicinal treatment before and during the study. Upon completion of the study, for 21 of the 34 subjects (64 %) current drug therapy could be reduced or terminated. 13 of those did not even require further therapy. At the end of the treatment period, 38 % of all subjects were regarded as being free from disorders and the number of subjects suffering from severe pain was significantly decreased from 60% (at baseline) to 25 % (at completion of the trial). A significant positive effect was observed for all investigated parameters. Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex was generally very well tolerated, with only one, non-serious adverse event (mild nausea) observed, which can probably be related to the study medication. Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex, therefore, proved to be an effective and very well tolerated dietary supplement for the treatment of inflammatory rheumatoid arthritis.

**Keywords:** Lyprinol<sup>®</sup>; omega-3-complex, Vitamin E; inflammatory, rheumatoid arthritis; dietary supplement

## INTRODUCTION

Rheumatism is comprised of a group of mostly chronic diseases, such as degenerative joint disorders (osteoarthritis), rheumatoid arthritis, weak tissue rheumatism (Fibromyalgia) and osteoporosis along with a drawing pain. In practice, therapeutic measures are usually combined. Apart from drug therapy, physical and operative treatment, nutrition is playing a crucial, as well as more and more recognized and accepted role, in therapy and prevention [5]. In particular, omega-3 fatty acids Eicosapentaen- (EPA) and Decosahexaen acids DHA), occurring in fish and mussels in large quantities, have been proven to reduce inflammatory and degeneration processes [2, 6, 7]. Persons with inflammatory rheumatoid disorders are observed to have an

increased demand for omega-3 fatty acids. With normal food intake (high proportion of meat, low proportion of fish) too much omega-6 fatty acids and too little fish are ingested. Vitamin E, biologically active tocopherols, were also shown to have a positive effect on the prevention of rheumatoid disorders [1]. Furthermore, Lyprinol<sup>®</sup> (a lipid extract of *Perna canaliculus*), that has proved to reduce joint pain and joint swelling as well as morning stiffness in patients suffering from inflammatory rheumatoid disorders [4, 3]

This clinical trial investigated the effects and tolerance of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex, a combination of omega-3-complex, Lyprinol<sup>®</sup> and vitamin E on 50 subjects with inflammatory rheumatoid disorders.

## **METHODS**

This study included 50 adults (25 men, 25 women), from 29 to 73 years old (mean: 59.2), with joint disorders, who met the following inclusion criteria: Rheumatoid joint disorders, a minimum level of moderate pain and morning stiffness. The exclusion criteria were pregnancy, breast-feeding or severe symptoms of rheumatism requiring immediate treatment. The diagnoses were confirmed in an examination by a physician. The history of the disorders varied from 0.67 to 21 years (mean:  $8.1 \pm 6.0$  years). 30 subjects showed a recurrent course of rheumatoid disorder, with a mean period of time of the last recurrent of  $1.4 \pm 1.8$  years. 34 subjects were treated with medication before and during the study period. The study complied with the recommendations of the German Association for Phytotherapy (Gesellschaft für Phytotherapie) regarding the performance of drug monitoring studies.

For the first two days of the individual trial period of 12 weeks, participants took one capsule each of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex in the morning and in the evening. From day three, the dosage was increased to 2 times 2 capsules per day for the duration of the study period. One capsule of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex contains 458 mg fish-oil concentrate (50% EPA, 50% DHA), 35 mg Lyprinol<sup>®</sup> (a lipid extract of *Perna canaliculus*) and 5 mg Vitamin E. Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex is a dietary food supplement supporting the treatment of inflammatory rheumatoid arthritis. Assessments took place on day one, when baseline values were determined, after 6 weeks and at the completion of the trial after 12 weeks, or upon premature termination of the trial. The resulting parameters were changes in morning stiffness, joint pain, and the degree of pain intensity at examinations two and three compared to the baseline values.

## **RESULTS**

Evaluation of the results is based on an intention to treat analysis. Of the 50 subjects initially enrolled, one did not complete the treatment period and left at day 70. All other subjects completed the trial.

### Efficacy

The duration of morning stiffness was reduced from  $13.7 \pm 5.9$  minutes at baseline by  $1.3 \pm 5.2$  minutes (9.5 %) after 6 weeks and by  $2.1 \pm 3.8$  minutes (15.3 %) at the completion of the trial. The reduction of morning stiffness after 6 weeks and after 12 weeks is highly significant ( $p = 0.005$  and  $p \leq 10^{-3}$ ). Similar results could be obtained for the outcome criteria “the number of painful joints” and “the number of swollen joints”. The number of painful joints was reduced from  $4.18 \pm 2.80$  at baseline by  $0.30 \pm 0.81$  points (7.2 %) after 6 weeks and  $0.60 \pm 1.18$  points (14.4 %) after 12 weeks (Fig. 1). Both values were statistically significant ( $p = 0.012$ ;  $p = 0.001$ ). The positive effect of mussel-Lyprinol® omega-3-concentrate was even more pronounced in the reduction of the “number of painful small joints”, than for the “number of painful large joints”. For the sub-parameter “number of painful small joints”, a highly significant reduction ( $p = 0.022$ ;  $p = 0.002$ ) of 9.3 % after 6 weeks and 18.6 % after 12 could be observed (Fig. 1).

The subjects and the physician independently evaluated the pain intensity according to a 5 point scale (0 = no pain to 4 = very severe pain). During the course of the trial, a successive reduction of pain was observed. The reduction of pain was highly significant after the second assessment at 6 weeks. According to the physician’s evaluation, in 44 % of the subjects ( $n = 22$ ) the pain intensity was alleviated from moderate or severe pain intensity to mild pain intensity by the completion of the study (Fig. 2). According to the subjects self-rating this was achieved in 38 % ( $n = 19$ ) of all subjects. The pain reducing effect of Sanhelios mussel-Lyprinol® omega-3-complex was even more pronounced in subjects who suffered from severe pain at the beginning of the trial. There the number of subjects was reduced from 29 to only 12 (evaluation of the physician) and from 31 to 13 (evaluation of the subjects), respectively (Fig. 2). For most of these subjects the improvement in pain intensity was observed at the second assessment after 6 weeks. Drug treatment could be reduced or even terminated for 21 of the 34 subjects who required medicinal treatment at beginning of the trial. On completion of the study, none of the subjects were completely free from pain. However, 19 subjects (38 %) were diagnosed being free of disorders and not requiring further treatment. In the global evaluation of efficacy, 57.1 % of the subjects were evaluated as “very good” or “good”.

### Tolerability

During the 12 week trial, the subjects reported a total of seven adverse events. None of these were severe. In one case, where the subject reported mild nausea at the beginning of the trial, the adverse event can be probably attributed to the study medication. The effect might be due to an aversion to fish oil. However, this improved during the course of the trial.

Global evaluation of tolerability was equally assessed as “very good” or “good” by 98 % of the subjects and the physician.

## DISCUSSION

Rheumatoid arthritis, with a prevalence of 0.5 to 1 % of the population, is the most common of systemic inflammatory rheumatic disorder, and predominantly affects the musculoskeletal system. Parthenogenesis is mostly unknown, therefore, therapy is primary focused on unspecific suppression of the inflammatory processes. Apart from medicinal therapy, nutrition is recognized as playing a major role in prevention as well as treatment. Subjects enrolled in this trial, investigating the efficacy and tolerability of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex, suffered from rheumatoid arthritis (78 %) and rheumatoid arthrosis (22 %). The subjects have suffered from these disorders for an extended period (mean: 8.1 years) and 34 (64 %) of them required medicinal treatment prior to and during the course of the trial. One of most important results obtained from this trial is that for 21 of 34 subjects who required medicinal treatment, current medicinal therapy could be reduced by the end of the treatment period. 13 of these those 21 subjects did not even require further therapy. In particular, when regarding the adverse effects of generally prescribed medication, this can be regarded as a major success for treatment with the dietary food supplement Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex. A great reduction of joint pain and swelling, as well as morning stiffness, was not observed and was not expected. However, the improvements of 5.8% to 26 %, observed in the investigated parameters, were all statistically significant and strongly argue for the positive effects of the treatment. Furthermore, it should be taken into account that 38 % of the subjects were regarded as being free from disorders at the end of the treatment period and that the number of subjects suffering from severe pain was reduced from 60% to 25 % (Fig. 2). In the global evaluation of efficacy, 57.1 % of the subjects were evaluated as “very good” or “good”. Taking into account that the positive effects increased during the study period, this percentage may be even higher when Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex is taken for a longer period of time. The study preparation was very well tolerated. 98 % of the subjects evaluated the safety of Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex as “very good” or “good. Of the seven reported adverse events, only one (mild nausea) could be reasonably related to the study medication.

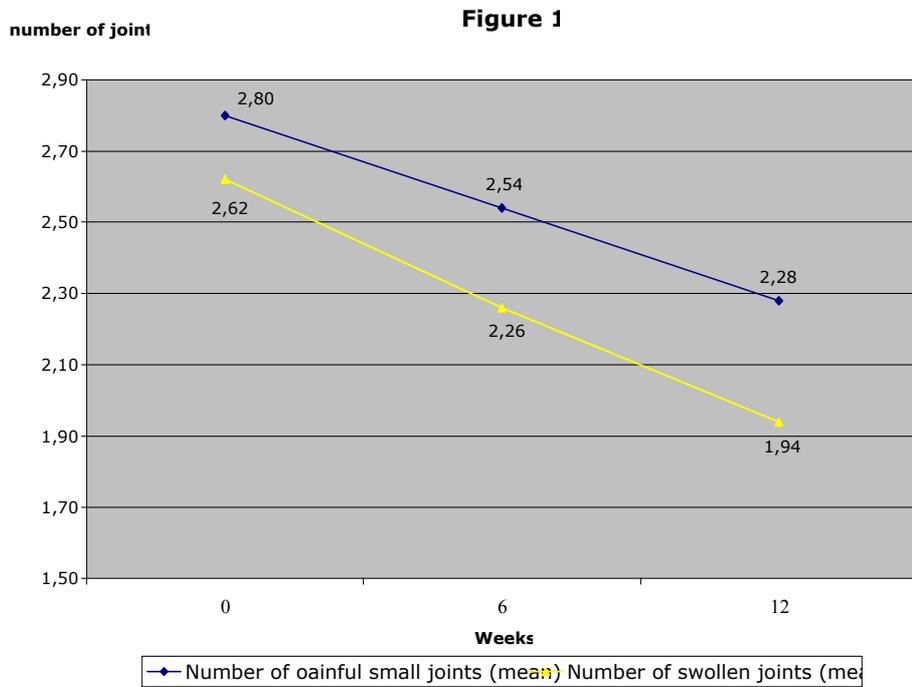
Conclusions: Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex showed significant positive effects in the treatment of inflammatory rheumatoid disorders. These positive effects may be more pronounced when taken for a longer period than was investigated in this study. Sanhelios mussel-Lyprinol<sup>®</sup> omega-3-complex was also very well tolerated by the subjects. It, therefore, can be recommended as a dietary food supplement in the treatment of inflammatory rheumatoid disorders.

## REFERENCES

- [ 1] Bisalski HK. Antioxidative Vitamine in der Prävention. *Deutsches Ärzteblatt*. 1995; 92: A 1316-1321

- [ 2] Curtis CL, Hughes CE, Flannery CR, Little CB , Harwood JL, Catersor B. N-fatty acids specifically modulate catabolic factors involved in articular cartilage degradation. *J Biol Chem.* 2000; 275: 721-724
- [ 3] Gibson SL, Gibson RG. The treatment of arthritis with a lipid extract of Pernea canaliculus: a randomized trial. *Complementary Therapies in Medicine.* 1999; 6: 122-126
- [ 4] Halpern GM. Anti-inflammatory effects of a stabilized lipid extract of Pernea canaliculus (Lyprinol®). *Allerg Immunol (Paris).* 2000; 32:272-278
- [ 5] Klemm C. Klinische Erfahrungen mit einer antirheumatisch wirksamen Salbenbehandlung (Exrheudon® Salbe). *Z Allgemeinmedizin / der Landarzt H.* 1973; 22: 1049-1052.
- [ 6] Sanders TA. Marine oils: metabolic effects and role in human nutrition. *Proceedings of the Nutrition Society.* 1993; 457-472.
- [ 7] Tempel H van der, Tullekn JE, Limburg PC, Muskiet FA, Rijswijk MH. Effects of fish oil supplementation in rheumatoid arthritis. *Annals of the Rheumatic Diseases.* 1990; 49: 76-80.

**Fig. 1. Changes in number of swollen and small hurting joints.**



**Fig. 2. Changes in pain intensity.**

