Coxarthrosis is the localization of chronic degenerative arthropathy of the hip joint. It is a frequent, severe and disabling disease with causes that are both anatomical (special conditions of Circulatory System) and mechanical (joint of major movement and which may also be affected by development anomalies).

Clinical symptoms include pain while walking, functional constraints and joint deformity. Pain is due to load but may be also induced by groin palpation (many trigger points) or passive joint mobilization. The functional constraint is progressive and involves extrarotation movements at first, and later thigh extension and flexion. These constraints have negative consequences on walking, causing pain, which leads to limping and muscle spasm, which limits further muscle movement.

Until a few years ago, the pathogenesis of osteoarthrosis was believed to involve only joint cartilage, but we now know that it also involves subchondral bone alteration.

- In order to verify the therapeutic effectiveness of a new magistral homeopathic injectable formulation called Coxa-compositum ampoules, a controlled, cohort, randomized clinical trial was carried out. The clinical trial meets the criteria of homogeneity, identifies a primary objective and dimensions the sample in accordance with statistical criteria of reliability.

1) Cox-a-compositum ampoules Group
66 patients [27 M (41%); 39 F (59%) - average age = 56.2]
10 weekly homeomesotherapeutic sessions for 10 consecutive weeks into the following local acupuncture points GB 30, GB 29, BL 54, GB 27, GB 28, SP 12 and projection points GB 31, ST 31.

2) Electroacupuncture Group
63 patients [28 M (44,5%); 35 F (55,5%) - average age = 53.5]
10 weekly sessions of electrostimulated acupuncture for 10 consecutive weeks. Electric contacts: BL 54(+)/GB 29 (-), GB 30 (+)/GB 27 (-), GB 28 (+)/ST 31 (-), SP 12 (+)/GB 31 (-).
Single use nickel-free needles (SH 0.25 x 25 mm GT) electrostimulated for 25 minutes at high frequency (300 Hz) - low variable progressive intensity depending on individual sensitivity.

In particular, while the Coxa-compositum ampoules Group had a 5.5 WOMAC Index at T0, the Electroacupuncture Group had a 5.1 WOMAC Index. Ten days after the end of the 10th treatment (T2), the WOMAC Index decreased to 2.2 and 3.4 respectively.
- The WOMAC score in the Coxa-compositum ampoules Group is 3.3.
- The WOMAC score in the Electroacupuncture Group is 1.7.

The results show that Homeomesotherapy in Acupoints with Coxa-compositum ampoules is 50% more effective than Electroacupuncture at the same points.
- Coxa-compositum ampoules can be injected into selected specific Acupuncture points to successfully treat chronic pain from primary coxarthrosis with no negative side effects. The improvement is progressive from the first to the tenth weekly session. This treatment is well tolerated and can also be used to control acute and secondary coxarthrosis pain.

**KEY WORDS**

Coxarthrosis, Pain Management, Homeopathy, Homotoxicology, Physiological Regulating Medicine, Acupuncture.
Secondary coxarthrosis (50% of total cases of coxarthrosis) may have a variety of causes: inflammation, trauma and bone formation alterations. Some sports (7) such as running (8-13), football (14), soccer (15), weight-lifting (16) and certain jobs (17-23) can also lead to secondary coxarthrosis. Recent updates from Medical Literature have shown that other sports may cause coxarthritis (24-27). A recent review on this subject is particularly interesting (28). However, hip dysplasia remains the main and most disabling cause of secondary coxarthrosis. The arthrogenic effect of dysplasia may be detected from an early onset of coxarthrosis and its severe symptoms.

The underlying cause of coxarthrosis can be detected via x-ray: primary coxarthrosis (FIGURE 1), previous injuries followed by macro or microfractures, previous coxarthritis and dysplasias. Clinical symptoms include pain while walking, functional constraints and joint deformity. Pain is due to load but may be also induced by groin palpation (many trigger points) or passive joint mobilization. The functional constraint is progressive and involves extrarotation movements at first, and later thigh extension and flexion. These constraints have negative consequences on walking, causing pain, which leads to limping and muscle spasm, which limits further muscle movement. Until a few years ago, the pathogenesis of osteoarthrosis was believed to involve only joint cartilage, but we now know that it also involves subchondral bone alteration (FIGURE 2). The osteoblast and chondrocyte are both involved in the pathogenesis of osteoarthrosis. Inflammation of the joint capsule, rheumatoid arthritis, coxarthritis of muscle origin, coxarthritis of nerve origin (burning hip) are all involved in the pathogenesis of coxarthritis, in addition to coxarthrosis. All these diseases induce hip joint pain of different types and severity.

In 1994, an Italian Group of MDs/PhDs (Homeopaths, Homotoxicologists, University Lecturers, Researchers, Allopathic General Practitioners), all members of the Associazione Medica Italiana di Omotossicologia (A.I.O.T. - Milan) and other European specialists agreed to pool their individual professional skills and scientific knowledge to work together on a therapeutic project intended to provide a global, innovative approach to Biological Medicine in the sphere of Traditional Medical Thought. Going beyond the psychosomatic (Classic Homeopathy) and somato-psychic (Homotoxicology) approach, the Italian Group developed a view of the human organism as a Neuro-Immune-Endocrine Network regulated by delicate control mechanisms - so-called Physiological Regulating Therapy (PRT).

Over the years, the theoretical and clinical research studies carried out by the Italian Group have led to rational, innovative formulations approved by doctors and patients. Many recent research projects are focusing on new homeopathic formulations and clinical and experimental projects based on Physiological Regulating Medicine (PRM) (TABLES 1, 2).
MAGISTRAL INJECTABLE FORMULATION COXA-COMPOSITUM AMPOULES

Like all the other treatments in the Physiological Regulating Therapy (PRT) range formulated according to the scientific acquisitions on which Physiological Regulating Medicine (PRM) is based, the individual ingredients contained in Coxa*-compositum ampoules are selected according to 3 criteria:

1. Clinical, anatomical and pathological indications for at least 8 out of 10 Homeopathic Materia Medica (H.M.M.) consulted (29-38);
2. A further selection is made to ascertain possible correspondence between classic homeopathic indications and scientific evidence on the effects of the bio-active substances contained in the selected unitary remedies;
3. Inclusion in the formulation of cytokines and neurotransmitters, which are concentrated in the same proportions as in the human body.

All 10 unitary remedies contained in Coxa-compositum ampoules are in X or C dilutions in line with the low-dose principle (hormesis).

The low-dose principle is effectively a subject of current interest and is based on:

1. Arndt-Schultz Law (weak/medium stimuli activate/modulate biological functions);
2. The response of a cell to biological information depends on the ligand-receptor effect, so that the response of a cell to a messenger will depend on the number of receptors involved. A typical cell may have approximately 1000 receptors but only a small proportion of them (10%) need to be engaged to obtain a strong response (50%). A surplus of ligands determines a down regulation of membrane receptors (physiological mechanism for maintaining homeostasis): in order to maintain its functional balance, a cell blocks its receptors; this leads at first to delayed reaction and later to loss of function;
3. Bürgi Effect. Different pharmacologically active substances which, when combined, have a synergic effect;
4. Low-dose active ingredients can be studied in accordance with Toxicology and Pharmacology, and provide a specific rationale based on the suggestions of the standard Homeopathic Materia Medica and the recent discoveries in such fields as Physiology and Physiopathology (cytokines, neurotransmitters, hormones).

These concepts make it possible to analyze the effect of each unitary remedy contained in Coxa-compositum ampoules in detail.

- Active ingredients: Arnica montana 8X, 4 parts; Anti Interleukin 1α 4C, Anti Interleukin 1β 4C, β-Endorphin 4C, Calcarea fluorica 6X; Cartilago-
suis 4X, Colocynthis 8X, Rhus toxicodendron 10X, 2 parts; Argentum metallicum 6X, Formicum acidum 8X, 1 part.

- Inactive ingredients: sterile isotonic sodium chloride solution.
- 1 ampoule = 2.0 ml.

For a better, more effective understanding of the therapeutic effect of Coxa-compositum ampoules, we can select 5 different pharmacological action cores as follows:

**1st CORE**

**Homeopathic Antalgic Core**

* Arnica montana 8X; Colocynthis 8X; Rhus toxicodendron 10X; Formicum acidum 8X; Argentum metallicum 6X. The unitary remedies that are contained in the 1st Core are:

- **Arnica** *(Arnica montana L. - Fam. Compositae).*
  - The bioactive substances are as follows: helenalin, which modulates many processes influencing inflammatory reactions, including oxidative phosphorylation, histamine release, serotonin and platelet aggregation, and is also a booster of phagocytosis; helenin, tenuline and camixinolid, which produce the same effect as helenalin, although to a lesser extent. Helenin is a powerful anti-inflammatory molecule whose mechanism of action is still unknown in spite of all the research studies found in scientific literature. It is the only anti-inflammatory remedy capable of acting both on NF (Necrosis Factor) and I Kappa B. The effect of these bio-substances is enhanced by caffeic acid (inhibitor of cyclooxygenase and 5-lipoxygenase - key enzymes for the synthesis of leukotrienes, prostaglandins and hyalurondase), arabin 3-6 galactose (inhibitor of the complement and stimulant TNF a), and control. A solid circadian system is a peptide - 31 amino acids - resulting from the processing of the precursor POMC - proopiomelanocortin. The highest concentration of endorphin receptors can be found in the genitalia of the spinal cord,periaqueductal gray, thalamus, in all the structures of the limbic brain, all of which are involved in pain recognition, modulation and control. A solid circadian β-Endorphin response rhythm has been proved showing a peak at 12 p.m. and lowest point at 12 a.m. (39). At a physiologi-

- **Colocynthis** *(Cucumis colocynthis L. - Fam. Cucurbitaceae).*
  - The bioactive substances are: colocynthin, cucurbitacin, citrullol, active ingredients acting on rheumatic and nerve diseases and having a cicatrizing action on muscle trigger points and lesions of the hip joint capsule.
  - According to H.M.M. involving the hip joint: crural pain, genital nerve pain. One of the characteristics of Co-lochynthis-type nerve pain is spasm and muscle contracture. The patient complains of a sensation of tendon and psoas muscle shortening.

- **Rhus tox.** *(Rhus toxicodendron L. - Fam. Anacardiaceae).*
  - The bioactive substances are: urushiol, toxicodendrol, toxicodendrin having anti-inflammatory and anti-rheumatic properties (subacute and chronic forms).
  - According to H.M.M. involving the hip joint: action on tendon pain, diseases affecting ligaments and joints caused by muscle and/or capsule triggers, stiffness (worsening with cold and damp weather), pain on starting movement. Painful stiffness of tendons, ligaments, joints and muscles. Improvement with warmth. Note: 1 of the 2 Rhus tox. Weihe Points is localized on Acupuncture point GB 30 (Roann-tiao), a key point for homeomesotherapeutic hip pain treatment (see “PATIENTS AND METHODS”).

- **Formicum acidum**
  - Promotes the release of histamine, serotonin and kallikrein.
  - According to H.M.M. involving the hip joint: joint stiffness worsening with cold and damp weather; sensation of tendon shortening, sharp pain and muscle cramps.

- **Argentum metallicum**
  - Specifically indicated for fibrous and fibrous-elastic tissues. It affects the joint cartilage, which becomes inflamed, infiltrated and rigid.
  - According to H.M.M. involving the hip joint: Argentum treats to chronic deforming rheumatisms and especially to deforming hip joint osteoarthrosis. Hip pain worsening with immobility, cold and damp weather leading to joint cartilage congestion.

**2nd CORE**

**PNEI Antalgic Core**

- **β-Endorphin 4C** *(FIGURE 3)*

This endogenous opioid peptide neurotransmitter found in the neurons of both the Central and Peripheral Nervous System is a peptide - 31 amino acids - resulting from the processing of the pre-
cal level, endorphins are secreted in picograms (0.00000000001 g = 10^-11 g = 11X), 8X on average (= 4C). The β-Endorphin concentration in Coxa-compositum ampoules is physiological, similar to the normal concentration within the situm ampoules dorphin concentration in 11X, 8X on average (= 4C). The 40).

*As a consequence, Anti-interleukins 1 (α; β) act like NSAIDs, cortisone and to some extent like salicylates (41-43), without the negative side effects caused by these allopathic chemical medicines. Homeopathically diluted Anti IL-1α and Anti IL-1β are successfully used in osteoarthrosis and myalgic pain management therapy.*

**3rd Core**

**Anti-inflammatory Core**

- **Anti IL-1α 4C; Anti IL-1β 4C.** (FIGURE 4) From a biological point of view, interleukins 1 (IL-1α; IL-1β) are the most active inflammation mediators secreted by Th1 cells. They induce inflammation by means of their own capacity to stimulate the genic expression associated with inflammatory process evolution.

- Although they may have different structures (coded by 2 different genes), they act on the same specific receptor. IL-1 have a very short half-life and are secreted by IL-1 themselves when they encounter CD4 lymphocytes.

- IL-1 (α; β) activate cyclooxygenase type 2 (COX2), prostaglandin E2 and nitric oxide, thus activating the entire inflammatory process (pro-inflammatory Interleukins).

**4th Core**

**Anti-degenerative Core**

- **Cartilago suis 4X** Homeopathic dilution of the joint cartilage from the knee and hip of young hog hindquarters. Specific organ preparation for the treatment of cartilage injuries, coxarthritides and deforming arthrosis with a trophic and restructuring effect.

- **Argentum metallicum** (see 1st Core - Homeopathic Antalgic Core)

**5th Core**

**Constitutional and Trophic Core**

- **Calcarea fluorica 6X** The amorphous part of the bone is made of calcium phosphate (Calcarea fluorica), calcium carbonate and phosphates, magnesium carbonate and phosphates, hydroxyapatite.

When cartilage is affected, the subchondral bone can be subject to thinning and deteriorating processes. At the beginning, this reduction can lead to the formation of osteophytes, a pathological mechanism of joint compensation. Besides being an important constitutional remedy, Calcarea fluorica counterbalances losses and is thus the most appropriate mechanical and functional support to cartilage damage.

- According to H.M.M. involving the hip joint: deforming rheumatism where joint cartilage and periarticular tissues harden, with potential coxarthrosis leading to ankylosis. Worsening after a period of rest (Rhus toxicodendron).

From a detailed analysis of the unitary remedies contained in the 5 homeopharmacological cores of Coxa-compositum ampoules we can infer that they have common actions as follows:

1. Synergetic
2. Complementary
3. Complete
to treat those diseases for which Coxa-compositum ampoules has been formulated (main clinical directions: primary and secondary coxarthrosis, coxarthritides).

**Patients and Methods**

In order to verify the therapeutic effectiveness of Coxa-compositum ampoules, a cohort, randomized, controlled clinical trial was carried out to evaluate the therapeutic effect of Coxa-compositum ampoules objectively.
1) COUNTRY: Italy - 3 Orthopaedic and Rheumatology Clinics
2) NUMBER OF PATIENTS RECRUITED: 129 [55 M (43%); 74 F (57%)]
3) PATIENTS' AGE: average 54.8 year old - Min: 42.3; Max: 68.5
4) TRIAL PERIOD: September 2002 - June 2005
5) PATHOLOGY:
   Coxalgia caused by 1st and 2nd degree primary coxarthrosis acc. to Hubbard
6) INCLUSION CRITERIA:
   a) Primary coxarthrosis clinically evidenced and diagnosed on the basis of algic symptoms of the hip joint reported by the patient
   b) 1st and 2nd degree coxarthrosis (X-rays)
   c) Enduring pain for at least 4 months without signs of acute inflammation
7) EXCLUSION CRITERIA:
   a) Secondary coxarthrosis
   b) Relapsing coxarthrosis
   c) Patients previously treated with costicosteroids during the 6 months prior to recruitment
   d) Slight pain
8) RECRUITING CRITERIA:
   Random, according to the patient's recruitment time
9) TREATMENT:
   A) **Coxa-compositum ampoules Group** - 66 patients [27 M (41%); 39 F (59%)
       - average age = 56.2] (TAB. 3)
   10 weekly homeomesotherapeutic sessions for 10 consecutive weeks into the following local acupuncture points GB 30, GB 29, BL 54, GB 27, GB 28, SP 12 and projection points GB 31, ST 31 (FIGURE 5).
   The local and projection points for the infiltration of Coxa-compositum ampoules were selected according to the clinical indication of 8 out of 10 reference Acupuncture textbooks consulted (44-53) and on the basis of the experience of the managers at the 3 Pain Clinics where the trial was carried out.
   Each local point was treated by making an intradermic injection (FIGURE 6) with 0.5 ml; except for acupoint GB30, where the medicine was injected at a depth of 2 cm.
   Syringe: 5cc; needle 13 mm - 30 G.
   Into GB 30: intramuscular injection needle (4 cm).

   B) **Electroacupuncture Group** - 63 patients [28 M (44.5%); 35 F (55.5%)- average age = 53.5] (TAB. 3), 10 weekly sessions of electrostimulated acupuncture for 10 consecutive weeks.
   Electric contacts: BL 54 (+)/GB 29 (-), GB 30 (+)/GB 27 (-), GB 28 (+)/ST 31 (-), SP 12 (+)/GB 31 (-).
   Single use nickel-free needles (SH 0.25 x 25 mm GT) electrostimulated for 25 minutes at high frequency (300 Hz) - low variable progressive intensity depending on individual sensitivity.

**Coxa-compositum ampoules** = Ascorbic ac. 2X, Sulphur 3X, Chlorimum 6X, Nadelium 3X, Na oxalaceticum 3X, α-Ketoglutaricum ac. 3X, α-Lipoicum ac. 3X, Barium oxalsuccinate 3X (**Metabolic core**); Artery, Porc. 6X, Vein, Porc. 6X, Cartilago suis 6X, Placenta totalis suis 6X, Funiculus umb. suis 6X, Sulphur 3X, FGF 4C, NGF 4C (**Trophic core**); Parathyroid Gl., Porc. 6X, Calcitonin 6X (**P.N.E.I. core**); Gland. suprarenalis suis 6X, Colchicum 6/8/12X, Strontium carbonicum 6/8/12X (**Antidegenerative core**).
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joint stiffness (www.auscan.org/womac/index.htm).

The WOMAC Index Questionnaire is designed to evaluate patients’ conditions according to 3 criteria:
1) Pain (5 items: walking, walking up stairs, walking down stairs, at rest, during the night) at T0 (inclusion), T1 (after 5 sessions), T2 (10 days after the end of the 10th session). Each item is scored on a scale from 0 (no pain/problem) to 10 (worst pain/foreseeable problem);
2) Stiffness (2 items: in the morning, during the day);
3) Physical functionality (7 items - e.g.: to bend over, to put on socks or stockings, to stand, etc.);

B) SF-36 Questionnaire - the most widespread and best-known patient-oriented questionnaire about the general health status - 9 items - among which: vitality, social functioning, physical functioning, general health (at T0 and T2).

DOCTORS

Clinical evaluation (hip extrarotation, thigh extension, bending of the thigh on the pelvis, evaluation of the ability to walk on a flat floor).
THERAPEUTIC EFFECTIVENESS

See TAB. 4

PATIENT COMPLIANCE

- **Coxa-compositum ampoules** Group: very good+ good = 90%
- **Electroacupuncture** Group: very good+ good = 82%

TOLERANCE

- In both groups: very good + good = 96% (±1)

FINAL RESULT

Statistically significative superiority of Coxa-compositum ampoules vs. Electroacupuncture in the same points.

CONCLUSIONS

By comparing the effectiveness of Homeomesotherapy with Coxa-compositum ampoules vs. Electroacupuncture, the two treatments were shown to be effective in reducing chronic pain from primary coxarthrosis with a greater and more rapid statistically significant improvement for the patients in the Coxa-compositum ampoules Group (exact Fisher test p < 0.01).

In particular, while the Coxa-compositum ampoules Group had a 5.5 WOMAC Index at T0, the Electroacupuncture Group had a 5.1 WOMAC Index. Ten days after the end of the 10th session, the WOMAC Index decreased to 2.2 and 3.4 respectively.

- The WOMAC score in the Coxa-compositum ampoules Group is 3.3 (TAB. 4)
- The WOMAC score in the Electroacupuncture Group is 1.7

**FIGURE 7**

Frontal view of an electrodermic point:
A - with positive stimulus  
B - with negative stimulus  
C - surface expansion of an electrodermic point  
(apud Dumitrescu, 1992).

**FIGURE 8**

A - Anatomic structure of an Acupoint
1: Epidermis and papillary dermis;  
2: Reticular dermis; L.F.C.T. - Loose Fibrous Connective Tissue;  
D.F.C.T. - Dense Fibrous Connective Tissue;  
3: Hypodermis;  
A: Aponeurosis;  
Aδ: small size myelinated fiber;  
c: unmyelinated fiber with free nerve endings (f.n.e.);  
v: venule surrounded by nerva vasorum;  
a: arteriole surrounded by nerva vasorum;  
l: lymphatic duct
- Receptors:  
I: Pacini Corpuscles;  
II: Ruffini Corpuscles;  
III: Golgi Apparatus;  
IV: Meissner Corpuscles;  
V: Krause end club;  
VI: Merkel finger-like cells.  
These receptors are very concentrated in an Acupoint, connected with nerve fibers and distributed throughout the Reticular Dermis.

B - “Merkel Complex”
bm: basal membrane; bl: basal lamina; np: nerve plate or cup-like terminal nerve dilation supporting the Merkel cell; ec: epidermal cell; MERKEL: Merkel finger-like cell (Malinowsky, 1993 - revised by Milan, 1996).
The results show that Homeomesotherapy in Acupoints with Coxacomposi-
tum ampoules is much more effective than Electroacupuncture at the same
points (WOMAC Global Index scores difference: 1.6). As the local treatment
was accompanied by the same home treatment for both Groups (Arthros-com-
positum drops), the differences between the 2 Groups’ results remain well-groun-
ded and significant. Infiltration into the Acupuncture points with a complex PRT
homeopathic medicine is particularly inter-
esting as the same point can benefit from homeopharmacological action and
mechanical stimulation. Besides the ener-
getic value of Traditional Chinese Medi-
cine (FIGURE 7), the Acupuncture point has specific anatomical (high receptor density,
presence of Merkel cells, presence of myelinated Aδ and non-myelinated c ner-
vous fibers) and physiological characteristi-
cs (higher electrical conductivity, diffe-
rent temperature) (FIGURE 8).

The selected Acupuncture points are localized on dermatomes from T12 to
S2, the same nerves innervating the joint capsule, the ligaments, the tendons and
the muscles forming the mechanism of the hip joint retention. Another advan-
tage of Homeomesotherapy vs. Elec-
troacupuncture is the time required to
perform a single treatment: 5-6 minutes
vs. 25 minutes, and the fact that it can be
carried out even when the patient is
confined to bed, using simple, portable
equipment.

On the basis of the above, we can sta-
tate that Coxacompositum ampoules can
be injected into specific, selected Acu-
point points to successfully treat chronic pain from primary coxarthrosis with
no negative side effects; the im-
provement is progressive from the 1st
to the 10th weekly session. This
treatment is well tolerated and can also be used to control acute and sec-
ondary coxarthrosis pain.

N.B. The magistral homeopathic formulations Coxacompositum am-
poules and Arthros compositum drops mentioned in this article have
been registered in USA as

GUNA-HIP and GUNA-ARTHRO
respectively.

- GUNA-HIP clinical indica-
tions: hip joint osteoarthrosis, hip joint capsule inflammation, hip joint rheumatoid arthritis, hip joint pain of muscle origin, hip joint pain of nerve origin, knee osteoarthrosis.

- GUNA-ARTHRO clinical indica-
tions: arthritis, arthrosis, mus-
cle pain, articular discomfort.

References

2. Danielsson L., Lindberg H., Nilsson B. - Pre-
3. Kelsey J. - Epidemiology of musculoskeletal disorders. Monographs in epidemiology and
1982.
4. Typpo T. - Osteoarthrosis of the hip: radiologi-
cal findings and etiology. Ann Chir Gynaecol,
5. Olsen O., Vingård E., Köster M., Alfredsson L.
- Etiologic fraction for physical work load,
loads and overweight in the occurrence of co-
xarthrosis. Scand J Work Environ Health,
6. Bourdoul R.J. - Pied et Statique.Maisonneuve,
1980 (French).
7. Vingård E., Alfredsson L., Goldie I., Hogstedt C.
- Sports and osteoarthrosis of the hip. Am J
8. Videman T. - The effect of running on osteo-
arthritic joint: an experimental matched-
pair study with rabbits. Rheumatology and Re-
9. Marti B., Knobloch M., Tschopp A., Jucker A.,
- Degenerative changes in the ankle in for-
mer elite high jumpers. Clin J Sports Med,
10. L'Hermette M., Pelle G., Tourny-Chollet C.,
Du Jardin F. - Hip passive range of motion and
frequency of radiographic hip osteoarthrosis
in former elite handball athletes. Br J Sports
11. Gross P., Marti B. - Risk of degenerative ankl
joint disease in volleyball players: study of for-
12. Martin J.A., Brown T., Heiner A., Buckwalt-
er J.A. - Post-traumatic osteoarthrosis of the
nee elite handball athletes. Br J Sports Med,
13. Anderson J.A. - Post-traumatic osteoar-
throsis in ballet dancers. Clin Orthop,
1989; 269:233-238.
Ed., St. Jean de Braye; 1972 (French).
- Piante medicinali in Omeopatia
Palombi Ed., Roma; ISBN 88 -7621 - 000 -
8 (Italian).
17. Gironi M. et Al. - J. Neural Neurosurg
- Omeopatica clinica. Nuova IPSA Ed., Palermo;
1987 (Italian).
18. Dinarello C.A. - Biology of interleukin 1. FASEB
19. Dinarello C.A. - The IL-1 family and inflamma-
20. Oppenheim J.J. - There is more than one in-

The following articles and textbooks were also consulted:


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