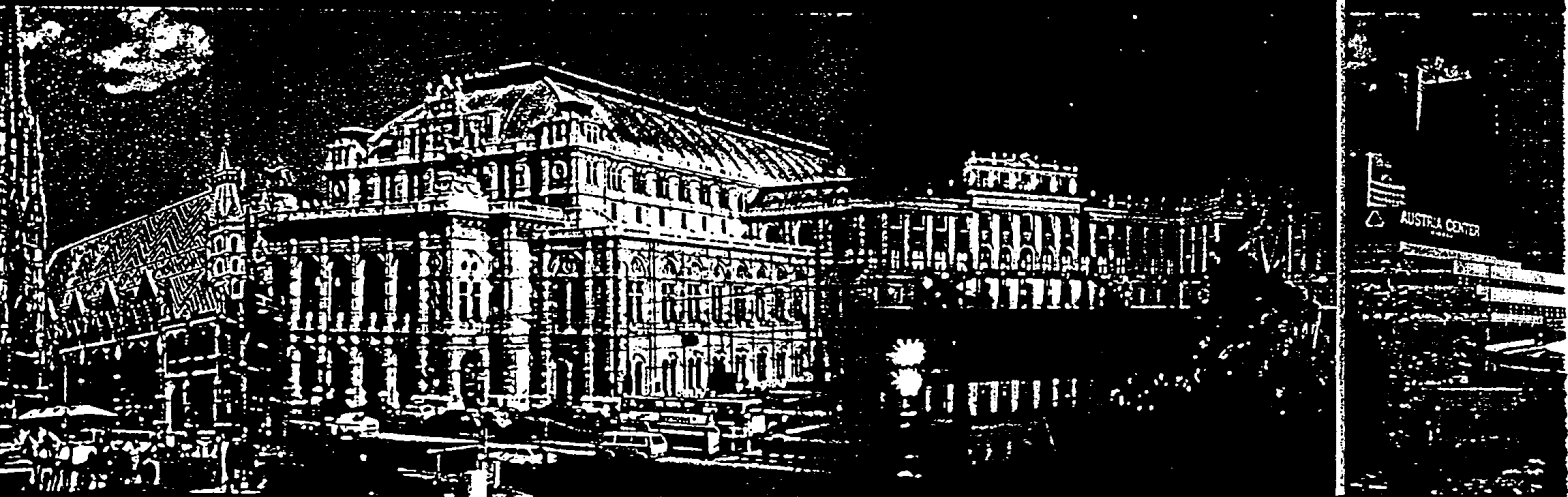


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# Final Programme and Abstracts

**P154. The Effects of Intra-articular Hylan G-F 20 Injection on The Sensation of Proprioception in The Knee Joint**

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The aim of the study was to investigate the effects of intra-articularly applied Hylan G-F 20 (a derivative of Hyaluronan) on the sensation of proprioception in the knee joint.

**Material and Methods:** 16 patients with grade II and grade III primary knee osteoarthritis (OA) were included in the study. Patients received an intra-articular Hylan G-F 20 injection three times at weekly intervals: 5 patients in one knee, and 11 patients in both knees. The patients proprioception measurements were made with the reproduction method prior to the injection and half an hour after the injection. The last proprioception measurement was made 1 week after the third injection.

**Results:** The Average Absolute Angular Error Percent (AAAEP) value is inversely related to proprioception sensation acuity. The AAAEP values checked immediately after every three injections were higher than the measurements made immediately before every three injections, yet the difference was not significant ( $p > 0.05$ ). In the measurements made 1 week after the third injection, on the other hand, the AAAEP value had significantly dropped compared to those prior to the injections ( $p < 0.05$ ).

**Conclusion:** The proprioceptive sensation acuity does not change immediately after intra-articular Hylan G-F 20 application. Yet, after the 3 injections made at weekly intervals, a significant improvement is observed compared with the prior to injections condition. This improvement may probably be due to improvement of synovial fluid viscosity and hyaluronan content. Increase in the viscosity of the synovial fluid in the knee joint seems to affect the proprioception sensation positively.

**P155. The Efficacy of Intra-articular Hyaluronic Acid according to Radiological Grade**

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**Aim of the Study:** The efficacy of intra-articular hyaluronic acid (HA) has been widely investigated but there is no published trial about the importance of radiological grade in the treatment of knee osteoarthritis (OA). Our aim was to compare the efficacy of intra-articular hyaluronic acid (HA) according to the radiological grade in the treatment of knee OA.

**Material and Methods:** Sixty patients with knee OA according to American College of Rheumatology Criteria were assigned to three groups with respect to the degree of disease assessed on radiographs (group 1,  $n=20$ , Kellgren-Lawrance grade 2; group 2,  $n=20$ , Kellgren-Lawrance grade 3; group 3,  $n=20$ , Kellgren-Lawrance grade 4). All patients received three weekly intra-articular injections of HA. The clinical assessments included pain at rest, at weight bearing and on walking as measured on a 100 mm visual analog scale (VAS) and Western Ontario and Mc Master Universities Osteoarthritis Index (WOMAC). The clinical assessments were performed at baseline and of weeks 4, and 12.

**Results:** For all measures of efficacy, improvements from baseline at 4th and 12th weeks were statistically significant in all groups (group 1;  $p < 0.001$ , group 2;  $p < 0.001$ , group 3;  $p < 0.05$ ). When the groups were compared with each other, pain and physical functions subscales of WOMAC was found in the favor of groups 1 and group 2 ( $p < 0.05$ ).

**Conclusion:** Although IA HA treatment provided clinically significant improvement in all groups; our results showed this treatment was more effective in patients with mild-moderate knee OA.

**P156. Physical therapy for hydrarthrosis**

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**Aim of investigation:** To establish the role of physical therapy for hydrarthrosis in gonarthrosis.

**Methods:** We observed 3 groups of patients, consisting of 31 people per group: 20 women and 11 men in the first group (group A), 18 women and 13 men in the second group (group B), 23 women and 8 men in the third group (group C), between the ages of 55 and 70, all patients with hydrarthrosis.

Group A was treated only with medication: NSAIDs, analgesics, decontracturants. Group B was treated with physical therapy: electrotherapy, termotherapy, massage, rest, posture and joint protection. Group C was treated with both medication and physical therapy.

Each therapy was applied for 3 weeks.

The patients' pain, inflammation, joint mobility, gait, ADL (activities of daily living) were evaluated - at the beginning of their treatment and after 3 weeks of treatment.

**Results:** On admission all patients presented pain with inflammation, diminished joint ROM (range of motion), limped gait.

After 3 weeks of treatment: all patients reported significant pain relief, the inflammation was significantly diminished in 60 % of cases, improved joint ROM and improved gait.

Comparing groups A, B and C: Group C had more rapid evolution; they were in a better condition after 3 weeks of treatment than group A and B; group B had a better evolution than group A.

**Conclusions:** Physical therapy has an important contribution in lowering inflammation in hydrarthrosis.

**P157. Estimation of femoral head bone density using magnetic resonance imaging - comparison between men with and without hip osteoarthritis**

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**Aims of the study:** Bone changes are thought to be one important etiological element in the pathogenesis of hip osteoarthritis (OA). Magnetic resonance imaging (MRI) derived T2\* relaxation time has been shown to provide information about bone mineral status of the femoral neck. The aim of this study was to test the hypothesis that MRI derived T2\* relaxation time of the proximal femur in hip OA differs from that seen in healthy subjects. **Materials and Methods:** 27 men (aged 47-64 years) with unilateral or bilateral hip OA and 30 age-matched randomly selected healthy men were studied. Bone mineral density (BMD), bone mineral content (BMC) and bone width of the femoral neck were measured with dual x-ray absorptiometry (DXA). Subsequently, T2\* measurements were performed with a 1.5 T scanner (Siemens Magnetom 63SP, Germany). A single 10 mm thick coronal slice was generated on the femur with a repetition time of 60 ms and nine echo times to derive T2\* values. T2\* measurements were performed from the different region of interests from femoral neck and head. **Results:** T2\* relaxation times showed significant negative correlations with BMC, BMD, ( $r = -0.401 - -0.794$ ,  $p < 0.05-0.001$ ). T2\* relaxation time values revealed no significant differences between the groups in the femoral neck and in the head of the femur, whereas it was 12% lower ( $p < 0.01$ ) in OA subjects than in controls in acetabulum. **Conclusions:** Hip OA is not associated with an increase of bone mineral density in femoral neck or in the head of the femur.

**P158. The double-blind evaluation of the magnetophoresis efficacy with the application of 2.5% Ketoprofen-gel in patients with Gonarthrosis**

*M. Woldanska-Okonska, J. Czernicki, A. Miecznik; Swietokrzyska Academy, Kielce, Piotrków Trybunalski Branch, Piotrków Trybunalski, Poland.*

The importance of physical methods in therapy has been increasing constantly because of their effectiveness, low costs and the significant acceptance of this form of treatment by patients. Magnetophoresis is a novel approach in enhancing drug delivery across biological barriers.

We administered the gel on the skin of knee joints and used magnetostimulation (Viofor JPS apparatus, M1P2 coded programmes) 15 times/day to each joint with a break for the weekends. 40 persons took part in this evaluation. We used two pain scales to assess our results: visual analogue scale (VAS) [lineal scale] and Laitinen scale [point scale]. The data obtained were presented in form of percentage changes in the pain levels as well as in the form of the arithmetical mean and standard deviation ( $\bar{X} \pm SD$ ). T-Student's test was used for a statistical evaluation of the data obtained in the tests.

The statistically significant gain was obtained in the two scales between results of the shame application and the real application after 10, 15 and 30 days of treatment.

By applying the drug locally, we avoid the inconvenience of oral or by-injection administration. The results of magnetophoresis depend on the compound introduced, the character of the disease, the planned effects and parameters of using magnetic fields. Therefore it is possible that this form of therapy may not yield the expected results.

Our research indicates that Ketoprofen-gel magnetophoresis is an effective form of treatment, especially in in-patients, in whose cases the efficacy was maintained 30 days after the treatment.

**P181. Relationship between movement patterns and physical fitness elements during rising from supine to sitting position in community-dwelling elderly persons**

**J. Kaneko;**

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[Aim of the Study]The objective of the present study is to clarify the effects of physical fitness elements on rising from the supine to sitting position in the elderly.[Material and Methods]Subjects were 18 elderly persons (12 men and 6 women) who lived at home. Rising from the supine to sitting position was analyzed by measuring the amount of time required for rising and observing body movements. Dynamic balance was assessed by measuring maximum forward and lateral reach of the arm in the sitting position. Trunk muscle strength was also assessed by measuring trunk bending by what while sitting in a chair. Furthermore, flexibility was assessed by measuring finger-floor distance (FFD) while standing on the feet and bending the upper body forward.[Results]The average minimal rising time was  $2.7 \pm 0.9$  seconds. There were two distinctive movement patterns for rising, and the results of one-way ANOVA showed that FFD was the only significant main effect. Multiple regression analysis of the relationship of minimal rising time to maximum lateral reach and maximum trunk muscle strength showed a determination coefficient of  $r^2=0.795$  ( $p<0.01$ ). [Conclusion]The results of the present study indicated that flexibility affected movement patterns, and that lateral reach and trunk muscle strength were the determination factors for the amount of time required for rising from the supine to sitting position.

**P182. Analgesic Electrotherapy in Fibromyalgia**

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Introduction: Fibromyalgia, only recently recognize as a nosologic entity by OMS at 1 January 1993, benefits from a complex rehabilitation program were electrotherapy plays an important role.

Aim of the Study: This study has been initiated to evaluate the analgesic role and importance of electrotherapy in fibromyalgia complex rehabilitation program.

Material and Methods: We study the practical analgesic effects of electrotherapy on a group of 25 patients, diagnosed with fibromyalgia, selected from those admitted in our Rehabilitation Clinique between January and August 2003. This prospective study reveals the detailed rehabilitation program followed by the selected patients and the results obtained.

Results: from the 25 selected patients, 18 are women aged between 20 and 60 years old, most of them aged between 31 and 40 years old, two third of our patients affirm family historic of fibromyalgia, but only half of them can detect the trigger factors of the main symptoms. The main complain is the chronic pain, with different localisation, associated with sleep disturbances, most frequently headaches, weight variations, digestive complains and anxiety/depression episodes.

Conclusion: electrotherapy is an effective analgesic methods for muscles and ligaments chronic painful areas and for trigger points, in association with drug therapy, kinetic program, diet and psychological support.

**P183. Historical therapy of paresis in the work of Caelius Aurelianus**

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Caelius Aurelianus provides in his work *Tardarum sive chronicarum passionum*, which based on Soranos' famous, but lost, work about acute and chronic illnesses a remarkably detailed description of the physio-therapy of paresis, which covers the complete therapeutic spectrum of the groundwork of a combined therapy. His view that rehabilitative treatment should be started from the second day of illness sounds almost revolutionary. Also modern early rehabilitation makes a specific use of a combined therapy in a way that is analogous to that described by Caelius Aurelianus. Even today the view is taken that a fast mobilisation of the patient is the top priority of therapy. The three-stage mobilisation therapy involving exercises in rolling-in-bed as well as practice in trying-to-sit-up is quite similar to what is common practice today.

**P184. The influence of low frequency pulsating magnetic fields used in magnetotherapy and magnetostimulation on sex hormones in humans**

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We tested the influence of magnetic fields applied during magnetotherapy and magnetostimulation over a longer period on human sex hormones secretion.

We divided the patients into two groups: 16 men underwent magnetotherapy and 10 magnetostimulation. The magnetotherapy in the form of magnetic field induction: 2.9mT, frequency: 40Hz, square wave, bipolar (Magnetronic MF-10 apparatus) was applied for 20 minutes to the lumbar area in patients suffering from chronic low back pain, 15 times, with breaks at weekends. The magnetostimulation (Viofor JPS system, M2P2 programme - induction 25-80µT, frequency 200Hz, complex saw-like shape with a plateau halfway the height of the wave, bipolar) was used in patients treated for the same problem for 12min daily. Both the groups were subjected to 15 applications at about 10.00 hours, one application a day with breaks at weekends.

Magnetotherapy affects sex hormone secretion by decreasing prolactin level in sensitive patients and magnetostimulation decreases it in all patients. Magnetotherapy affects FSH secretion in all patients after applications by increasing its level. Magnetostimulation affects the sex hormone secretion by decreasing levels of FSH in all patients.

The magnetotherapy influence on examined men shows the significant increase of estradiol in the sensitive group. Magnetostimulation affects vice versa in all patients.

Magnetotherapy increases the estradiol level in sensitive patients, however magnetostimulation decreases its level in all patients. Under the influence of magnetostimulation the level of testosterone increases in all patients.

Magnetic field affects sex hormones secretion without correlation with the regulating mechanism of pituitary-gonads axis. It also has a stronger influence on secretion in patients sensitive to its action.

**P185. Extracorporeal radial shock wave therapy (ESWT) in patients with Fibromyalgia**

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Introduction: Fibromyalgia (FM) is characterised by widespread pain, increased sensitivity at defined tender points and diverse accompanying symptoms such as fatigue, morning stiffness and depressive mood. In view of the beneficial effects of ESWT in the treatment of tendinopathies and trigger points, efficacy and safety of ESWT in FM-patients were evaluated. Methods: In a single blind study 15 patients with FM were given unilateral treatment once weekly for a period of 3 weeks with ESWT at 4 tender points (m. trapezius, m. supraspinatus, Trochanter major, m. gluteus maximus). One and four weeks after end of therapy an assessment of pain, fatigue, morning stiffness, headache, sensitivity to pain, quality of sleep and state of health as well as success of treatment were determined. Furthermore, regional pain-score (RPS), SF 36 and Beck-Depression-Index were determined. Results: One week after end of therapy, patients reported improvement of the physical aspect of the SF36 ( $p=0.014$ ) and success of therapy ( $p=0.04$ ). On the other hand, they also reported an increase in fatigue ( $p=0.037$ ) and headache ( $p=0.032$ ). Conclusion: Our study demonstrates that ESWT has possibly some beneficial effect on the complaints of patients with FM. However, some accompanying symptoms of the disease may worsen. Whether treatment of a larger number of tender points with ESWT for a longer period of time might result in a more pronounced reduction of symptoms remains to be examined.

**Rheumatoid Arthritis**

**P186. Effectiveness of Treatment with Infliximab (Remicade) in Rheumatoid Arthritis**

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Introduction. Rheumatoid arthritis (RA) affects 1% of the general population in Romania. RA is genetically transmitted in 2.5-3 % of first degree relatives.

Aims. Assessment of the effectiveness of long-term treatment with infliximab associated with NSAIDs in various stages of RA.