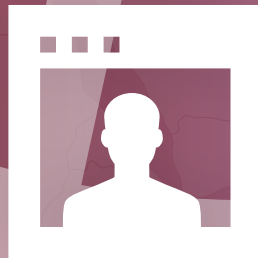


WORLD CONGRESS  
ON OSTEOPOROSIS,  
OSTEOARTHRITIS AND  
MUSCULOSKELETAL  
DISEASES

# VIRTUAL CONGRESS

August 20-22, 2020



[VIRTUAL.WCO-IOF-ESCEO.org](https://VIRTUAL.WCO-IOF-ESCEO.org)

AbstractBook

**Conclusion:** Structural resonance electromagnetic therapy is an effective and safe therapeutic technique that affects various links of RA pathogenesis.

P442

### LOCUS OF CONTROL IN PATIENTS WITH ANKYLOSING SPONDYLITIS

R. Grekhoff<sup>1</sup>

<sup>1</sup>Zborovsky Research Institute for Clinical and Experimental Rheumatology, Volgograd, Russia

**Objective:** The study of the characteristics of the locus of control is an essential component of the study of the psychological traits of patients with ankylosing spondylitis (AS). The aim of our study was to investigate the locus of control parameters in AS patients.

**Methods:** The average age of patients with AS was 40.14±13.8 y, and the average duration of the disease was 4.22±3.69 y. A locus of control (of subjective control) was studied according to the Rotter's Locus of Control Scale in E.F. Bazhin adaptation, 1987, using a statistical analysis of clinical and psychological data from 23 patients with AS.

**Results:** Patients with AS show a marked tendency to externality in the general sphere (3.6±2.58), as well as in the field of failures (3.2±2.6), in family relationships (3.9.2±2.4), relations of production (3.7±1.14) and in relation to health (4.3±2.2). Internality trends are observed in the sphere of interpersonal interactions and on the scale of internality in the field of achievements (6.8±2.24 and 5.9±2.41, respectively). A correlation between the indicators of the level of subjective control and other clinical and psychological characteristics, such as the age of AS patients, the activity and duration of the disease, the level of neurotic traits of the patients has not been established. The exception was the significant negative correlation between "Denial" psychological defense mechanism and the index of internality in relation to the disease ( $r=-0.83$  at  $p=0.028$ ).

**Conclusion:** The role of the patient, assimilated by most AS patients, and the symptomatology of the disease itself, form a feeling of helplessness in patients, the need for empathy and care of significant others, the hope that relief of the condition will be the result of exposure to external factors independent of the patient. These changes can impede the implementation of adequate therapeutic measures and are the goal of psychotherapeutic intervention themselves.

P443

### CATHEPSIN S GENE EXPRESSION MEASURED IN THE PERIPHERAL BLOOD OF OSTEOARTHRITIC PATIENTS PRIOR TO SURGERY AS A BIOMARKER OF POSTOPERATIVE PAIN DEVELOPMENT

K. Glemba<sup>1</sup>, G. Markova<sup>1</sup>, E. Taskina<sup>1</sup>, M. Makarov<sup>1</sup>, E. Tchentina<sup>1</sup>

<sup>1</sup>Nasonova Research Institute of Rheumatology, Moscow, Russia

**Objective:** Osteoarthritis (OA) is a chronic rheumatic disease, which involves pain, limited inflammation and local destruction of the knee joint. OA pain is a prerequisite for joint replacement in the endstage OA. However, chronic postoperative pain represents a major adverse result of surgery, which is observed in 10-40% of OA patients. Therefore, identification of patients potentially capable of developing chronic postoperative pain prior to surgery could significantly improve therapy outcome. We hypothesized that genes related to pain sensitization whose expression is up-regulated in about 10-40% of the examined endstage OA patient cohort might be responsible for postoperative pain. We aimed to examine the validity of our hypothesis.

**Methods:** We examined peripheral blood of 26 healthy volunteers (aged 55±8.3 years old) and 40 endstage OA patients (aged 56.5±8.9 years old) undergoing knee joint replacement surgery. Patients were examined before and 6 months after surgery. Pain indices according to VAS of 30% and higher were considered. Total RNA isolated from whole blood was used in gene expression studies performed with quantitative real-time RT-PCR for caspase 3; metalloproteinase (MMP)-9; tissue inhibitor of metalloproteinase TIMP1; cathepsins K and S.

**Results:** After 6 months' postsurgery pain complaints were obtained from 9 patients (22.5%). Prior surgery all the examined genes were significantly higher in the patients who developed postoperative pain compared to healthy controls and those subjects who did not develop pain after surgery. ROC curve analyses confirmed significant associations ( $p<0.05$ ) between expressions of the examined genes prior surgery with the possibility of pain development after surgery. The cut-off values for the examined gene expressions were 11.34 for cathepsin S (sensitivity of 0.89 and specificity of 0.76), 10.11 for caspase 3 (sensitivity of 0.86 and specificity of 0.65), 9.64 for TIMP1 (sensitivity of 0.89 and specificity of 0.57), 10.09 for cathepsin K (sensitivity of 0.86 and specificity of 0.78). Cathepsin S expression was the most informative predictor of postoperative pain development [AUC=0.857, 95%CI (0.708-1.000)].

**Conclusion:** High cathepsin S gene expression in the peripheral blood of the endstage OA patients measured prior to joint replacement surgery could serve an important biomarker of postoperative pain development.