

## Summary

**Background:** Fibromyalgia (FM) is a chronic syndrom characterized by dysfunction of pain processing and regulation. It occurs relatively often in concomitance with the connective tissue diseases (CTD), in particular rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). FM may be involved in their final clinical manifestation and may have important consequences for diagnosis and treatment.

**Objectives:** To examine frequency of FM in the prime CTD, FM impact on their clinical manifestation and relationship to assessment of the clinical activity in regional, monocentric, cross-sectional, descriptive study.

**Methods:** Study groups of 120 adult patients with RA, 91 with SLE, 30 with polymyositis/dermatomyositis (PM/DM) and 28 with systemic sclerosis (SSc) were evaluated. Each patient was examined on the presence of concomitant FM according to ACR (American College of Rheumatology) classification criteria (1990). The following data were recorded: sociodemographic data, history including comorbidities, contemporary immunosuppressive and analgesic therapy, laboratory parameters (serum inflammatory markers, relevant autoantibodies). Pain, fatigue and musculoskeletal stiffness were assessed on horizontal 100 mm visual analogue scale. Patients' function status was evaluated using HAQ (Health Assessment Questionnaire) and quality of patient's life by questionnaire SF-36 (Short Form 36-items Health Survey). All the patients filled up the other questionnaires: FIQ (Fibromyalgia Impact Questionnaire), SDS (Zung's self rating depression scale) and original questionnaire focusing on clinical symptoms of FM. Tender point count (TPC) was examined by the same rheumatologist according to the standardized protocol MTPS (Manual Tender Point Survey). Composite index DAS-28 (Disease Activity Score, 28 joints) was assessed only in RA patients, counting tender joint count (TJC) and swollen joint count (SJC). Disease activity in SLE was evaluated by the index SLEDAI. Patient groups with CTD were divided into the subgroups without and with concomitant FM, then these subgroups of relevant CTD were compared to one another.

**Results:** The diagnosis of FM was established in 20.8% patients with RA, 11.0% with SLE, 13.3% with PM/DM and 3.8% patients with SSc. No statistically significant differences in demographic data including age, gender proportion, disease duration were found in CTD groups without FM compared to ones with FM. Patients with concomitant FM had social handicaps including lower education level, higher divorce rates and higher frequency of invalidity although these differences were not statistically significant. Concomitant FM had influence on higher intensity of subjective symptoms, such as pain, fatigue and stiffness. Clinical manifestation of CTD in the presence of associated FM is modified by increased occurrence of FM related symptoms: cafalea, vertigo, paresthesia and depressive mood. FM associated with CTD is involved in significantly reduced quality of life and function disability. In the analyzed population FM was not proved to influence disease activity of CTD and reversely higher clinical activity of CTD did not result in higher FM frequency. The patients with RA were found that concomitant FM led to overestimation of RA clinical activity measured by index DAS-28 (RAF-  $3.67 \pm 1.4$  vs. RAF+  $5.35 \pm 1.1$ ;  $p < 0.0001$ ).

**Conclusions:** Concomitant fibromyalgia occurs most frequently in the patients with RA in comparison to other CTD. FM presence may cause difficulties in clinical assessment of RA activity, for in this case the composite index DAS-28 does not reflect real inflammatory activity but it results from measurements dependent on an individual patient's pain perception. This factor should be taken account during decision making about potential intensification of antiinflammatory therapy with increased risk of subsequent adverse events. FM in SLE patients may influence final clinical symptomatology and generate troubles in identification of neuropsychiatric SLE manifestation. FM has negative impact in the patients with all CTD resulting in significant reduction of life quality and function disability.