Figure 1. Cumulative probability of radiographic progression assessed by van der Heijde-modified total Sharp score (vtd-mTSS) in five years (n = 75).

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**DOES HIGH BASELINE LEVEL OF MATRIX METALLOPROTEINASES 3 (MMP3) INDICATE MORE MTPS JOINT EROSIONS IN EARLY RHEUMATOID ARTHRITIS PATIENTS? (THE 2-YEAR PROSPECTIVE ULTRASONOGRAPHIC STUDY)**

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**Background:** The serum MMP3 level is considered biomarker which reflects local inflammation of joints and correlates with joint damage progression in early rheumatoid arthritis (1).

**Objectives:** To investigate the association of high baseline MMP3 serum levels with bone erosion finding at the level of typical location for rheumatoid arthritis (RA) in patients with early, treatment “naïve” RA, who has no radiographic visible erosions, using ultrasound method (US).

**Methods:** Sixty-three pts. (9 males and 54 females; mean age 53.4 yrs 21-81 ± 14.1) with early RA according to EULAR/ACR 2010 criteria and symptom duration of ≤12 months (mean duration of 3.8 months) had baseline serum MMP3 levels tested. Serum levels of soluble MMP3 were performed blindly, without knowledge of the US data at the basal visit only, using the recommended normal cut-off range (a level above normal was rated as positive). Patients had been DMARDs/glucocorticoid naïve, with no visible X-ray erosions at the study entry. The lateral, dorsal and posterior part of styloid, MCP2, MCP5 and MTP5 joints of both sides, were analyzed for presence of bone erosion (yes/no), according to OMERACT US group definition, using high frequency linear probe by ESBATE My Lab 70 machine at baseline visit and after 24 months.

**Results:** The 50 pts completed follow-up. 46 pts. had basal serum MMP3 level higher than normal (MMP3 +, mean value 185.1±241.0). US bone erosions were present in 55/63 (87.3%) pts, most often in MTPs joints, both at the study entry and after 24 months of follow up (25 pts-39.6% and 32 pts-64% respectively). At baseline visit no significant difference was found between a group of MMP3+ and MMP3- pts. regarding to US bone erosion presence at the level of all analyzed joints (styloid process: 12 MMP3+/7 MMP3- pts.; p=0.394; MCP2: 14 MMP3+/8 MMP3- pts.; p=0.68; MTP3: 6 MMP3+5 MMP3- pts.; p=0.15; MTP5: 26 MMP3+11 MMP3- pts., p=0.55). After 24 months, significant difference was found between a group of MMP3+ and negative pts for MTP5 US bone erosions finding (33 MMP3+6 MMP3- pts: p=0.03) only, (styloid process:21 MMP3+/5 MMP3- pts: p=0.623; MCP2: 26 MMP3+7 MMP3- pts: p=0.851; MCP5: 14 MMP3+/2 MMP3- pts: p=0.266).

**Conclusion:** In our group of RA patients without initial X-ray changes, the high baseline serum level of MMP3 was significantly correlated with new MTPS bone erosions by US 2-year of follow-up.


**Disclosure of Interests:** None declared.