**ACTIVE SYNOVITIS AT THE WRIST LEVEL DETECTED BY DOPPLER ULTRASOUND (US) IS THE MOST COMMON FINDING IN PATIENTS WITH INFLAMMATORY ARTHRITIS, IRRESPECTIVE OF THEIR UNDERLYING DIAGNOSIS – RESULTS FROM A COHORT STUDY**

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**Background:** The possibility to identify patterns of joint involvement in different types of inflammatory arthritis without obvious clinical synovitis has a practical approach, giving the possibility to implement simplified protocols for US examination. Currently, there is no standardised method of US examination in inflammatory arthritis, despite previous attempts to simplify it without diminishing its sensitivity (1).
**Objectives:** We examined patients with presumed or established inflammatory arthritis and current symptoms of inflammatory hand pain, using the same US hand protocol, irrespective of the distribution of the symptomatic joints. The main purpose was to appreciate if a simplified protocol of hand examination will be sensitive enough for detecting active disease in patients with different diagnoses.
**Methods:** The same rheumatologist with US experience assessed longitudinally and transversally the dorsal aspect of 22 hand joints (wrist, metacarpophalangial (MCP) and proximal interphalangial (PIP) joints bilaterally) for the presence of active synovitis using a 7.5-15 MHz probe. We evaluated 182 patients (104 with established inflammatory arthritis, under different treatments and 78 new referrals), all of them with symptoms of inflammatory hand pain and difficulty to assess clinically for the presence of synovitis.

**Results:** 62 of the patients had positive Doppler signal in at least one of the 22 examined joints. In terms of diagnosis, 41 had established rheumatoid arthritis (RA), 14 had undifferentiated inflammatory arthritis, 5 psoriatic arthritis and 2 had juvenile idiopathic arthritis (all considered non RA patients). The wrist was the most commonly affected joint in 51 out of the 62 patients (82.3%) and they had in 49% (25 patients) bilateral involvement, with similar proportions in RA and non RA groups (27 vs. 24 patients, p=0.88) but with a predominance of symmetrical involvement in the RA group (85% vs. 54%). 11 (17.8%) patients had MCP 1 involvement, 20 (32.3%) MCP 2, 13 (21%) MCP3, 6 (9.8%) MCP4 and 9 (14.5%) MCP5. There was PIP 1 active synovitis in 3 patients (4.8%), PIP2 in 7 (11.3%), PIP3 in 9 (14.5%), PIP 4 in 3 (4.8%) and PIP5 in 5 patients (8%). There were no statistically significant differences between the two groups in terms of their finger joints assessment, apart from the involvement of MCP1 more commonly seen in the non RA group (9 vs. 2 patients, p=0.013).
**Conclusions:** In patients with symptoms of inflammatory arthritis and no possibility to diagnose active disease based on the clinical examination and laboratory tests, the US hand examination showed that the wrist synovitis was the most common finding, irrespective of the underlying disease. The involvement of the finger joints was less prominent and again did not correlate with the patient diagnosis in terms of specificity. We can't propose any simplified method of US hand examination as our study revealed no particular pattern of joint involvement.

**References:**
Ohrendorf et al., Arthritis Care & Research, Vol. 64, No. 8, August 2012, pp 1238–1243.