

Potential association between serum 25-hydroxy vitamin D levels and symptomatic neuropathic pain in rheumatoid arthritis patients

Aim of the work: To study the effect of vitamin D levels on clinical and laboratory characteristics of rheumatoid arthritis (RA), and to evaluate a possible relationship with neuropathic pain (NP). Patients and methods: Sixty RA patients with neuropathic pain symptoms and 60 healthy controls were included. All patients were assessed by Leeds assessment of neuropathic symptoms and signs (LANSS) to confirm the presence of NP, modified health assessment questionnaire (MHAQ), disease activity score (DAS-28) and visual analogue scale (VAS). Anti-cyclic citrullinated peptide (anti-CCP), glycolysated hemoglobin (HbA1C) and 25-hydroxy vitamin D levels were assessed. Nerve conduction velocity study (NCVS) was performed in those with confirmed NP. Results: Mean age of patients was 42.4 ± 10.9 years, disease duration 5.3 ± 4.2 years and 91.7% were females. RA patients showed significant lower vitamin D levels than controls (23.5 ± 14.03 ng/ml vs 37.8 ± 13.8 ng/ml; $p < 0.001$). There was a significant difference between RA patients with NP ($n = 30$; 18.3 ± 5.5 ng/ml), and patients without ($n = 30$; 28.8 ± 17.7 ng/ml) regarding 25-hydroxyvitamin D ($p = 0.003$), LANSS, VAS, MHAQ (all $p < 0.001$), DAS-28 and TJC ($p = 0.04$). Carpal tunnel syndrome (CTS) was found in 46.7%; 42.3% of the females and 75% of males, mononeuritis multiplex (MM) in 23.3%; 25% males and 23.1% females. Patients, with deficient vitamin D had either CTS or MM (85.7% each). RA patients with NP had significant delayed latency and reduction of conduction velocity of motor and sensory branches of median, ulnar and tibial nerves. Conclusion: Vitamin D deficiency could be a plausible cause for neuropathic pain in RA patients.