Health Resource Use and Cost of Illness of Urinary 6-Sulfatoxymelatonin Excretion and Osteoarthritis

**Results:**
For 5 years. Costs were annualised and expressed in euros per patient.

The KHOALA cohort is a French population-based multicenter cohort of 878 patients with symptomatic knee and/or hip OA, aged between 40 and 75 years. The purpose of our study was to estimate the annual direct costs of hip and knee Osteoarthritis from the KHOALA cohort.

**Methods:**
Study involved 141 patients with OA of knee joints (76.6% women), aged 58.4±7.91 years, duration of the disease 10.5±6.50 years (M±SD). 47 (33.3%) patients had knee and hip OA, 38 (27%) patients had reactive synovitis. The control group was presented by 36 practically healthy subjects (72.2% female) aged 57.1±9.95 years (M±SD). 6-sulfatoxymelatonin (6-SMT) in urine and galectin-3 in blood were determined by ELISA. The severity of pain, stiffness, and physical functioning of the joints were evaluated by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Quality of life was evaluated by Short Form-36 (SF-36).

**Objects:** To study the excretion of 6-sulfatoxymelatonin (metabolite of melatonin) and galectin-3 level in the blood and evaluate their association with the clinical manifestation and life quality in patients with OA.

**Methods:**
Study involved 141 patients with OA of knee joints (76.6% women), aged 58.4±7.91 years, duration of the disease 10.5±6.50 years (M±SD). 47 (33.3%) patients had knee and hip OA, 38 (27%) patients had reactive synovitis. The control group was presented by 36 practically healthy subjects (72.2% female) aged 57.1±9.95 years (M±SD). 6-sulfatoxymelatonin (6-SMT) in urine and galectin-3 in blood were determined by ELISA. The severity of pain, stiffness, and physical functioning of the joints were evaluated by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Quality of life was evaluated by Short Form-36 (SF-36).

**Results:**
It was established in patients with OA a decrease in 6-SMT excretion (mean 25.3±38.8 ng/mL in control, p<0.001). 6-SMT excretion correlated with age (r=−0.40; p<0.001) and was more significant in patients with knee-hip OA (mean 26.5±23.0 ng/mL in patients with OA of the knee only, p<0.001). Lower levels of 6-SMT excretion associated with higher pain and with lower quality of life. Patients with OA had increased galectin-3 levels in the blood (mean 16.4±10.1 ng/mL in the control, p<0.001). In patients with OA of knee and hip joints were estimated higher levels of galectin-3. Levels of galectin-3 were significantly higher in patients with synovitis (mean 21.5±13.8 ng/mL without synovitis, p<0.001). The increase of galectin-3 in the blood was associated with a marked increase of the total WOMAC index and with decrease of quality of life. The level of galectin-3 directly correlated with age, disease duration (r=0.28, p<0.01) and inversely correlated with 6-SMT excretion (r=−0.28; p<0.01).

**Conclusions:**
Lower levels of melatonin and higher levels of galectin-3 were associated with higher WOMAC index and poorer quality of life in patients with OA. This association may reflect possible pathogenic role of melatonin and galectin-3 in OA.

**References:**

**Disclosure of Interest:** None declared

**DOI:** 10.1136/annrheumdis-2018-eular.3787