[2002] [OP0048] DIURNAL VARIATION OF SERUM-COMP IN INDIVIDUALS WITH KNEE PAIN AND OSTEOARTHRITIS

M. Andersson [1], N. Jonsson [2], I.F. Petersson [1], D. Heinegård [3], T. Saxne [4] [1]R & D -center, Spenshult Hospital of Rheumatic Diseases, Oskarström, [2]Pharmaceutical Biosciences, Uppsala university, Uppsala, [3]Cell and Molecular Biology, [4]Rheumatology, Lund university, Lund, Sweden

Background: Quantification of serum-COMP (cartilage oligomeric matrix protein) is a promising approach for monitoring cartilage turnover in joint disease e.g. in relation to therapy. A prerequisite for correct interpretation of changes in serum levels is knowledge of the normal variation of serum-COMP.
Objectives: To monitor serum-COMP during a 24 hour interval to delineate the diurnal variation and estimate the half-life of COMP in the circulation.
Methods: Serum samples were obtained every 4 hours (7 samples/individual). Ten patients were examined. Five had chronic knee pain without radiographic knee osteoarthritis (OA) (Kellgren-Lawrence 0) and 5 had chronic knee pain and Kellgren-Lawrence grade >3 bilateral knee OA. Physical activity and night-time bed rest was standardised. Serum-COMP was measured by a novel sandwich-ELISA based on two monoclonal antibodies (Anamar Medical, Lund, Sweden). A statistical model for the diurnal variation in the COMP levels was developed using the computer program NONMEM.
Results: No significant changes in the COMP levels were observed during day-time between 8 AM and 9 PM. A significant decrease in serum COMP was apparent during bed rest at night reaching the lowest levels around 5 AM ($p<0.03$ or better vs all other time points). The half-life of COMP in the circulation was estimated to be approximately 10 hours.
Conclusion: Serum-COMP was in these patients stable during day-time, i.e. during the period when routine blood sampling takes place. The turnover of COMP in the circulation was significant. The findings strengthen the feasibility of serum-COMP as a marker suitable for monitoring tissue processes in OA and interventions aimed at modifying such processes.