CIRCADIAN VARIATION IN SYMPTOMS OF OSTEOARTHRITIS – POSSIBLE MODIFICATION FROM TREATMENT WITH SEED AND SHELL CONTAINING POWDER FROM ROSE-HIP.

Kaj Winther[1]; Kristian Marstrand[1, 2] (1) Institute for Clinical Research, Frederiksberg, Copenhagen Denmark. (2) Department of Orthopaedic Surgery, Elverum Hospital, Elverum, Norway.

Purpose: Stiffness and pain from osteoarthritis (OA), is often more pronounced in the morning than later in the day. When testing treatment of OA symptoms this circadian variation is rarely recognized. The aim of this study, therefore, was to evaluate the size of change in stiffness and pain scores from early morning until noon in OA patients. We also tested if the reduction in stiffness and in pain from treatment, if any, was more pronounced in the morning than later in the day.

Methods: The study was double-blind, randomized, placebo-controlled, cross-over including middle aged patients with OA symptoms. Half of the patients started with 5 gram daily of a Rose-hip product (Hyben-Vital®) rich in a galactolipid GOPO, for 3 month - immediately followed by a similar dose of placebo for another 3 month. The other half of the patients had the overt combination. Patients were told daily to fill in diaries during the whole study. Diaries were based on 10 step categorical scales focusing on stiffness and pain in the early morning and again at noon, and sleeping quality, mood and general well-being tested once daily. From a total of 112, a number of 47 patients returned diaries with proper registration for at least the last 3 weeks of each of the two treatment periods. Of these patients, 26 (group A) started with placebo then Rose-hip and 21 patients (group B) started with the overt combination. Data given are based on mean values +/- sd of the last 3 weeks of each treatment period, and statistical evaluation on the Wilcoxon test.

Results: Morning values for stiffness, group A (placebo first): 4.90 +/-2.30 vs 3.95 +/- 1.82 at noon, a drop of 20% ($p<0.000$). Pain insignificantly declined by 5%. Testing the A group after a further 3 month on active therapy resulted in a similar pattern - a significant drop in stiffness comparing morning and noon ($p<0.035$) a drop but not significant in pain. Group B (active treatment first - then placebo): morning stiffness 4.56 +/- 2.01 vs 3.68 +/- 1.86 at noon. A drop of 20% ($p<0.000$). Pain: 4.27 +/- 2.06 in the morning vs 3.60 +/- 1.80 at noon, a 16% reduction ($p<0.000$). A similar pattern was seen testing after 3 month placebo. Lumping groups together (n=47) did not alter conclusions (data not given). When the A group was tested in the morning, active treatment resulted in a significant reduction of 20% ($p<0.002$) when compared to placebo. This reduction was 10% and still significant when testing at noon ($p<0.037$). The delta decline in stiffness in the morning caused by active treatment was 0.95 +/- 1.46 as compared to noon, 0.39 +/- 0.97 ($p<0.046$). Active treatment reduced pain by 15.5% ($p<0.013$) in the morning corresponding to a similar reduction at noon: 15.9% ($p<0.055$). No significant change comparing time of day. In the B group (active first) there were no significant changes in any of the parameters indicating carry-over. Lumping the groups together resulted in a significant drop in stiffness in the morning as well as at noon, ($p<0.030$) and ($p<0.035$), respectively, with no time difference in between. Pain showed identical pattern: p values morning <0.020 and noon <0.015, no time dependency. In accordance with the drop in stiffness and pain active treatment also resulted in an significant improved quality of sleep, improved mood and a better wellbeing (data not given).

Conclusion: Stiffness and to some degree pain was most pronounced in the morning. The present Rose-hip powder seems more potent, when symptoms are more pronounced. This may explain improved sleeping quality observed during active treatment. Circadian variation should be recognized in OA patients.