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HPR Interventions (educational, physical, social and psychological)

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Background: OLE provides oleuropein the most prevalent phenolic component in olive leaves and has been shown to have potent anti-inflammatory and anti-oxidant effects potentially interesting for joint health (1).

Objectives: The aim of this study was to investigate the effects of a 6-month intervention with an Olive Leaf Extract (OLE) standardized for oleuropein content on knee functionality and biomarkers of bone/cartilage metabolism and inflammation.

Methods: The study was a randomized, double-blind, placebo-controlled, multi-centric trial of 124 subjects with mild knee pain or mobility issues. Subjects were randomized equally to receive twice a day one capsule of either maltodextrin (control treatment, CT) or 125-mg OLE (BonolifeTM, an Olive Leaf Extract containing 50 mg of Oleuropein) for 6 months. The co-primary endpoints were Knee injury and Osteoarthritis Outcome Score (KOOS), a self-administered questionnaire and supplement Coll1-1NOS2 specific biomarker of cartilage degradation. The secondary endpoints were each of the five subscales of the KOOS questionnaire, Knee pain VAS score at rest and at walking, OARSI core set of performance-based tests and serum biomarkers (Coll1-2, MPO, CTX1, osteocalcin, PGE2 and Vplex cytokines assay in serum) and concentration of Oleuropein’s metabolites in urine.

Results: Primary (global KOOS score, biomarker Coll1-1 NOS2) and secondary endpoints (the five subscales of the KOOS score) improved time dependently in both groups. OLE treatment showed significantly elevated urinary oleuropein metabolites (oleuropein aglycone, hydroxytyrosol, homovanillic alcohol and isomer of homovanillic alcohol), and was well tolerated with no significant differences in number of subjects with adverse events. At 6 months, OLE group showed a higher global KOOS score compared to placebo (treatment difference = 3.79; 95% CI = [4.08;11.54]; p = 0.34), without significant changes of inflammatory and cartilage remodeling biomarkers. Subgroup analyses demonstrated a large and significant treatment effect of OLE in subjects with high walking pain at baseline (14.4; 95% CI = [11.19;27.63]; p=0.03). This was observed at 6 months for the global KOOS score and each different subscale and for pain at walking (-23.07;95% CI = [-41.8;4.2];p<0.02). These treatment effects at 6 months were significant for KOOS score as well as for the subscales Pain and QoL and the pain at walking.

Conclusion: OLE was not effective on joint discomfort in people with low to moderate pain at baseline but significantly benefitted subjects with high pain at treatment initiation. As oleuropein is well-tolerated, OLE can be used to relieve knee joint pain and enhance mobility in subjects with articular pain the most painful subjects.

References:


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