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## TOPICAL ATORVASTATIN AS A POSSIBLE CHONDRO-PROTECTIVE AGENT IN PATIENTS WITH KNEE OSTEOARTHRITIS

**Mohamed A Elkasabi**

Mansoura University, Egypt

**Introduction:** Osteoarthritis (OA) is considered the leading cause of musculoskeletal disability in the elderly population worldwide. Several studies have shown a potential role of statins as an alternative treatment option for OA, beyond their cholesterol-lowering properties. Topical application of atorvastatin had proved to induce more anti-inflammatory and hypocholesterolemic effect in rats with OA as compared to other used anti-inflammatory drugs such as diclofenac. Therefore, atorvastatin was prepared in a topical-gel form to be compatible for human use.

**Methods:** The study was held at the Rheumatology and Rehabilitation Department in Mansoura University Hospitals. Sixty patients with chronic knee OA were involved in a randomized controlled trial for a period of 12 months. Each patient underwent full history taking, full clinical examination, necessary laboratory investigations, and radiological investigations. The patients were divided equally into 3 groups of each receiving different drug regimen as follows: group 1 was the control group receiving the ordinary regimen provided by the department staff members (piasclidine 300 mg tablet once/day + diclofenac sodium 75 mg tablet twice/day); group 2 (atorvastatin gel 5% + diclofenac) and group 3 (atorvastatin gel + diclofenac + glucosamine)

**Results:** All patients underwent a clinical assessment via Western Ontario and McMaster Universities Arthritis index (WOMAC) twice during the whole period of study; pretreatment and 12 months post treatment. The collected data were coded, processed and analyzed using SPSS program. P values less than 0.05 were considered statistically significant. Group 1 showed a minimal stiffness reduction with an average score of 0.9 pretreatment down to 0.79 post treatment, whereas group 2 showed a significant reduction in the WOMAC index from 0.92 pretreatment to 0.44 post treatment. However, adding glucosamine to group 3 didn't prove to improve the patients' scores as expected compared to results obtained from group 2 with a reduction from 0.86 to only 0.53, which contributed to about 38.3% of stiffness reduction as compared to basal level. Whereas group 2 showed a major improvement in the patients' WOMAC index in the form of approx. 52.1% stiffness reduction along the 12 months period of supervised drug regimen.

**Conclusion:** The results obtained by the use of topical atorvastatin showed to super pass some commercially widely used chondroprotective agents. Topical atorvastatin may be used safely and effectively for patients with knee OA.

dr.elkasabi@hotmail.com