

Efficacy of Viscosupplementation in Knee Osteoarthritis: A Clinical Trial of Three Agents

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ABSTRACT

Background: In 2008, Osteoarthritis Research Society International (OARSI) cited intra-articular (IA) injection of hyaluronic acid (HA) as a useful therapeutic modality, which relieves pain and functional score and delays progress of Osteoarthritis. Currently, there are more than five HA formulations in the market approved commonly used for intra-articular (IA) injection.

Objective: To compare the efficacy of the three commonly used injections in a cohort population.

Design: A Prospective Randomized Study.

Setting: King Fahd Hospital of the University, Al Khobar.

Method: Two hundred twenty-seven patients with grade 1, 2 and 3 OA were included in the study. Three different intra-articular injections of HA were used after double blinding: Osteonil (Sodium hyaluronate, TRB Chemedica UK ltd), Durolane (stabilized form of hyaluronic acid, Bioventus) and Synvisc (hylan GF-20, Sanofi Biosurgery). The data were analyzed using Stata SE/v.12. Analysis of variance followed by a post hoc t-test (LSD) was used for inferential statistical analysis.

Result: Group A had 78 patients, group B 74 patients and group C 75 patients. Analysis of variance showed that the efficacy of the treatment differed significantly ($F= 53.34$, $df_1= 2$, $df_2= 207$, $p\text{-Value}<0.001$). The result of the post-hoc tests showed Synvisc Injection was the most effective showing significant improvement than both Osteonil Injection (mean diff=7.68, $p<0.001$, CI=4.73, 10.64) and Durolane Injection (mean diff=15.61, $p<0.001$, CI=12.63, 18.59). Osteonil Injection was found to be superior to Durolane Injection (mean diff=7.93, $p<0.001$, CI=10.89725, 4.957825).

Conclusion: Viscosupplement (VS) agents provide significant though temporary symptomatic relief in grade 2 and 3 OA. The efficacy of all three agents was similar with marginal superiority of one over the other. Considering excellent tolerability, viscosupplementation may be included in the armamentarium of OA.