

## Comparison of Glucosamine-Chondroitin sulfate with and without methylsulfonylmethane in grade I-II knee osteoarthritis: a double blind randomized controlled trial

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### Abstrak

**Background:** Glucosamine, chondroitinsulfate are frequently used to prevent further joint degeneration in osteoarthritis (OA). Methylsulfonylmethane (MSM) is a supplement containing organic sulphur and also reported to slow anatomical joint progressivity in the knee OA. The MSM is often combined with glucosamine and chondroitin sulfate. However, there are controversies whether glucosamine chondroitin sulfate or their combination with methylsulfonylmethane could effectively reduce pain in OA. This study is aimed to compare clinical outcome of glucosamine chondroitin sulfate (GC), glucosamine chondroitin sulfate methylsulfonylmethane (GCM), and placebo in patients with knee osteoarthritis (OA) Kellgren Lawrence grade I II. **Methods:** a double blind, randomized controlled clinical trial was conducted on 147 patients with knee OA Kellgren Lawrence grade I II. Patients were allocated by permuted block randomization into three groups: GC (n=49), GCM (n=50), or placebo (n=48) groups. GC group received 1500 mg of glucosamine + 1200 mg of chondroitin sulfate + 500 mg of saccharum lactis; GCM group received 1500 mg of glucosamine + 1200 mg of chondroitin sulfate + 500 mg of MSM; while placebo group received three matching capsules of saccharum lactis. The drugs were administered once daily for 3 consecutive months VAS and WOMAC scores were measured before treatment, then at 4th, 8th and 12th week after treatment. **Results:** on statistical analysis it was found that at the 12th week, there are significant difference between three treatment groups on the WOMAC score (p=0.03) and on the VAS score (p=0.004). When analyzed between weeks, GCM treatment group was found statistically significant on WOMAC score (p=0.01) and VAS score (p<0.001). Comparing the score difference between weeks, WOMAC score analysis showed significant difference between GC, GCM, and placebo in week 4 (p=0.049) and week 12 (p=0.01). In addition, VAS score also showed significant difference between groups in week 8 (p=0.006) and week 12 (p<0.001). **Conclusion:** combination of glucosamine chondroitinsulfate methylsulfonylmethane showed clinical benefit for patients with knee OAK ellgren Lawrence grade I II compared with GC and placebo. GC did not make clinical improvement in overall groups of patients with knee OA Kellgren Lawrence grade I II.