Autologous Conditioned Serum: Our clinical and functional results using a novel disease modifying agent for the management of knee osteoarthritis

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Background

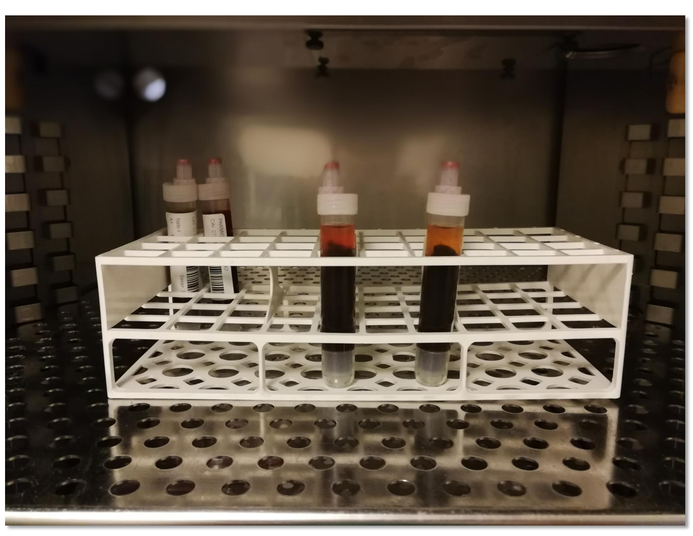
Osteoarthritis (OA) is the most common debilitating disease of the musculoskeletal system in adults over the age of 60. Knee OA accounts for more than 80% of the disease's total burden. Current understanding of OA has demonstrated that this isn't simply a "wear and tear" type of pathology. In reality, the pathogenesis of OA is much more complex, with multiple factors and players involved. To date there are no definitive curative treatment options for OA. Current guidelines aim to first attempt conservative treatment via non-pharmacological and/or pharmacological means. If these fail to demonstrate a benefit, surgical care is considered. As the understanding of the mechanisms underlying OA improves, treatments are being developed that target specific mediators thought to affect bone and cartilage homeostasis.

Objectives

The purpose of this study was to analyze the clinical and functional effects that the novel disease modifying agent (DMA) autologous conditioned serum (ACS) may have on knee OA.

Study Design & Methods

We performed a single cohort prospective study on 13 patients with knee OA who had previously undergone other conservative treatment modalities. Each patient received 4 injections of intraarticular ACS (Orthokine®). Follow-up was performed at 1 month and 6 months since the last injection. At each visitation, clinical and function data was collected in the form of VAS for pain, Knee Society Score (KSS), and Western Ontario and McMaster University (WOMAC) questionnaires. Statistical analysis was done with the Wilcoxon Signed-Rank Test.

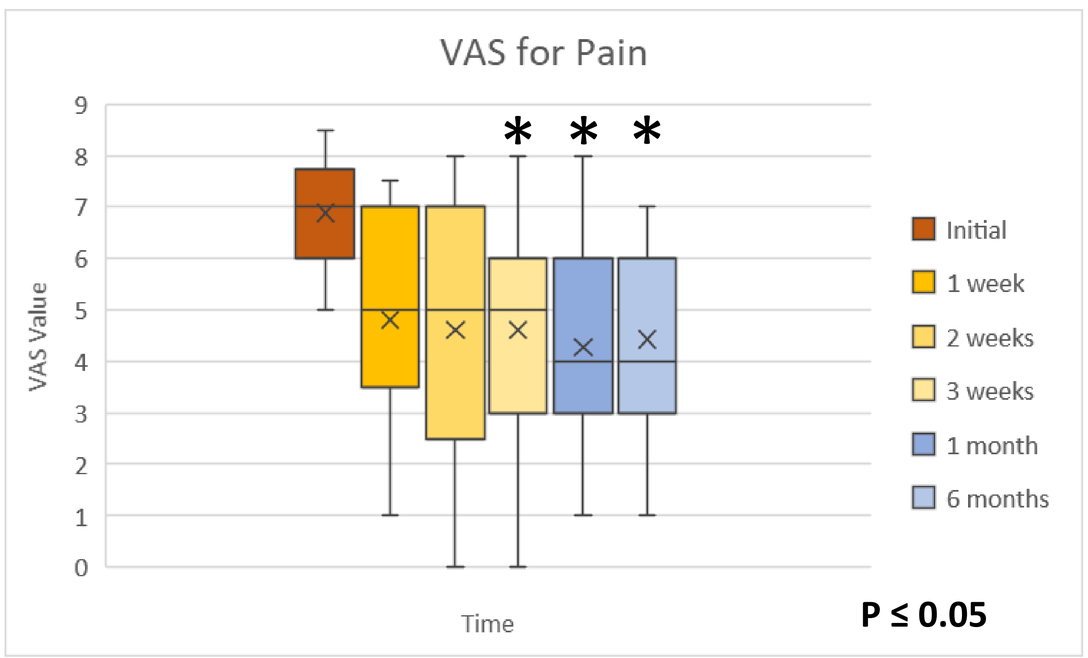


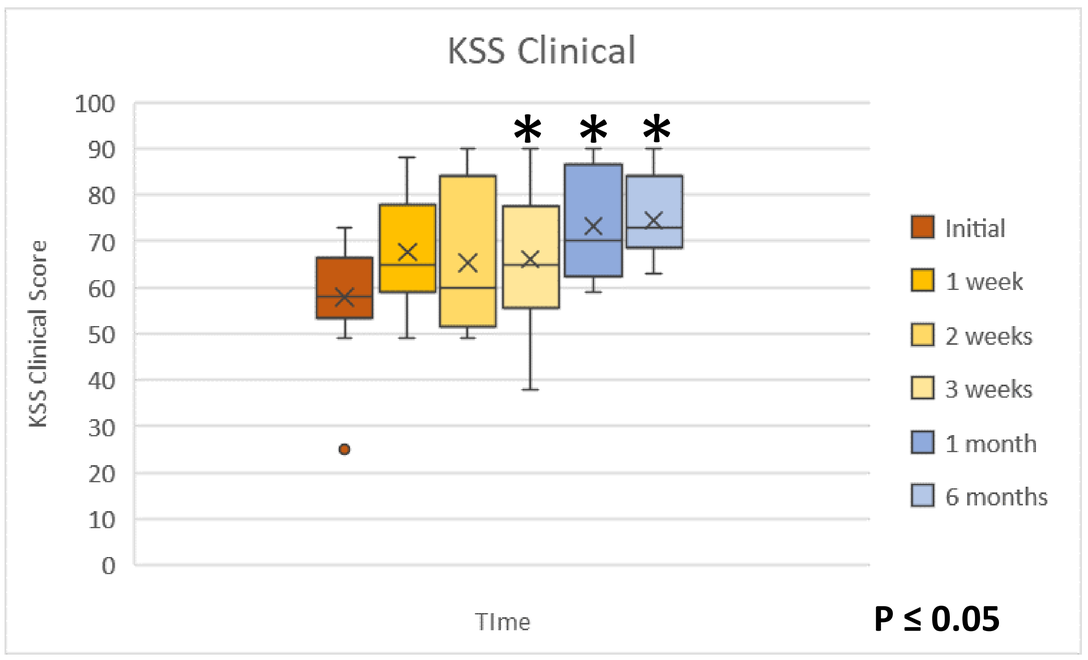
Left: Incubation of whole product at 37°C for 7 hours; *Right*: final serum product in syringe.

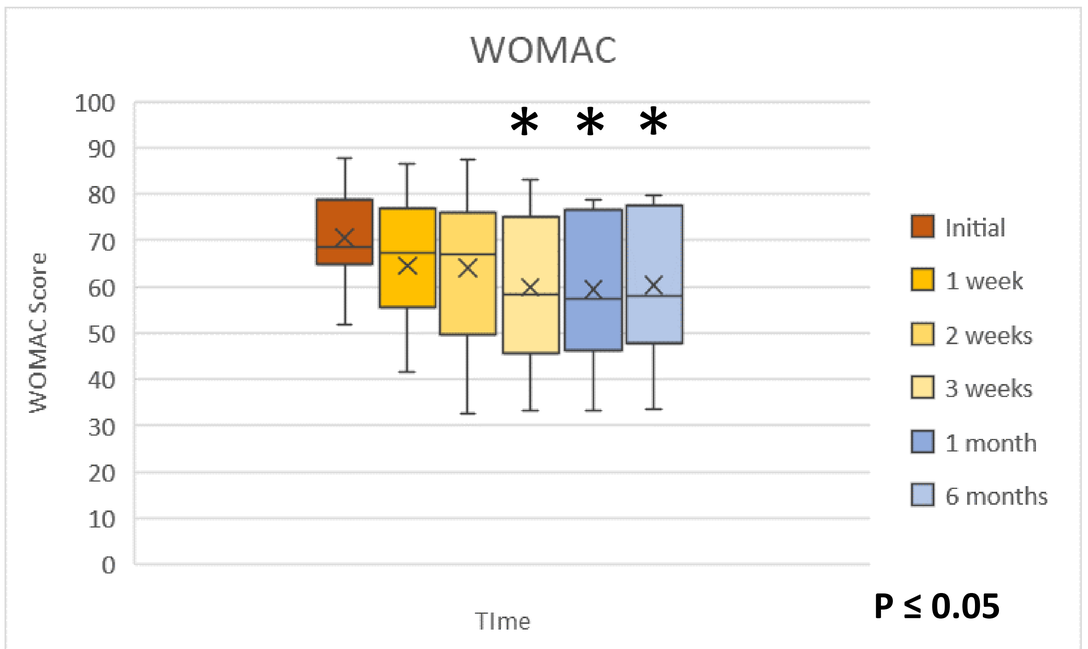
Results

We scored statistically significant improvement of all parameters measured between initial visitation and both follow-up sessions ($p \leq 0.05$). In fact, statistically significant improvement was observed from the 3rd week onwards.

Interestingly, VAS for pain did not decrease in a statistically significant manner between final injection dates and either follow-up ($p \geq 0.05$). We noticed a tendency of increasing variations among scores during the first 4 weeks of treatment, after which variation decreased in follow-up. There were no significant adverse events due to therapy during the study period.







Conclusion

Our results, in conjunction with pre-existing studies in the medical literature regarding ACS, demonstrate the viability of this therapy for the treatment of knee OA. This is yet another tool at the disposal of the orthopedic surgeon to attempt to delay invasive arthroplasty.