



ORTHOPAEDIC DEP.
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A Prospective Comparative Study between Synovial Joint Biomarkers IL-1Beta, TNF-Alfa Estimation Before Treatment by Arthroscopic Drilling plus Stem Cell Therapy versus Post Therapeutic Estimation of Knee Joint OA grade II, III, a Clinical study for 2 years



AIM OF STUDY

To evaluate knee joint synovial biomarkers IL-1 Beta, TNF-Alfa level before and after therapeutic using Stem Cell therapy treatment of knee joint OA in grade II, III supported clinical improvement criteria.

Purposes of Study

Knee joint Osteoarthritis OA progressive staging-grading reaching advance OA changes. We evaluate soluble mediators' synovial biomarkers IL-1 Beta, TNF-Alfa in knee joints aspirates, Before and after therapeutic treatment using Arthroscopic Drilling plus Stem Cell Therapy. The high rate of improvement in knee joint OA in grade II, III, post treatment using this method lead to evaluate this procedure.



Pre-intervention- Post intervention intra-articular picture

PATIENTS AND METHODS

In prospective comparative study patients of knee osteoarthritis grade II, III. The rate of synovial aspirates of IL-1 Beta, TNF-Alfa biomarkers level, before and after therapeutic treatment using Stem Cell intra-articular injection plus Hyaluronate knee joints OA grade II, III. 106 Patients were randomized according to inclusion exclusion criteria into two groups. Group A 54 patients were synovial aspirates estimation of IL-1 Beta, TNF-Alfa biomarkers level from knee joints OA grade II, III early before treatment. Compared to group B 52 patients were depend on synovial aspirates finding estimation of IL-1 Beta, TNF-Alfa biomarkers level post therapeutic treatment of knee joints OA with the same grading II, III, using Arthroscopic Drilling with intra-articular injections of Stem Cell. The patients were followed up for 12, 24 months.



Group A IL-1β	Mean GII	Mean GIII	P- value <	Group A TNF-α	Mean GII	Mean GIII	P- value<
Baseline Before treatment	0.53	0.67		Baseline Before treatment	0.045	0.055	
Post treatment 12 month	0.41	0.46	0.000 1	Post treatment 12 month	0.035	0.047	0.0001
Post treatment 24 month	0.30	0.34		Post treatment 24 month	0.022	0.030	

RESULTS

In group A detection of synovial fluid aspirates of IL-1 Beta, TNF-Alfa biomarkers level from knee joints OA grade II, III in early pretreatment show higher rate of these biomarkers compare to post therapeutic treatment period were significant reduction of these biomarkers level in group B in compare to group A. With significant progressive clinical improvement depending on both Lequesne's and WOMAC scores, from baseline were seen at all follow up visit for 12, 24 Months for group B superior to group A (P-value < 0.0001).

CONCLUSIONS

We concluded that these synovial biomarkers mediators IL-1 Beta, TNF-Alfa are important mediator's detection for knee joint Osteoarthritis, plus post therapeutic treatment Follow up of knee joint OA grade II, III. Also progressive clinical improvement with progressive reduction in synovial biomarkers level for 2 years study.



Post intervention intra-articular picture