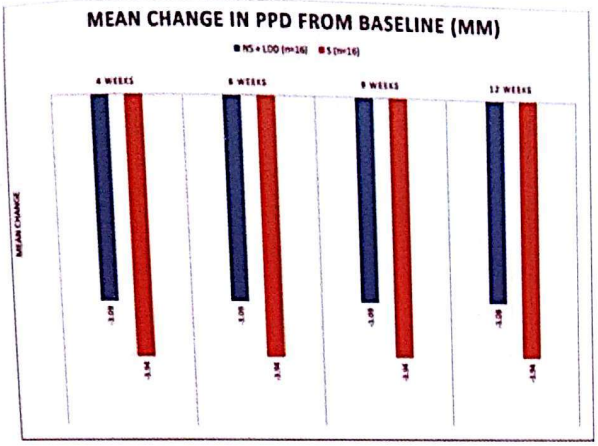

Figure 4: Mean PPD Change across Group NS+LDD and Group S

Mean Clinical Attachment Level (CAL) scores for Group NS + LDD at baseline, 4 weeks, 6 weeks, 9 weeks and 12 weeks post treatment were 6.16 ± 0.57, 3.06 ± 0.36, 3.06 ± 0.36, 3.06 ± 0.36 and 3.09 ± 0.38 respectively. In Group S, the mean CAL measurements at baseline, 4 weeks, 6 weeks, 9 weeks and 12 weeks post treatment were 5.88 ± 0.81, 3.06 ± 0.36, 3.06 ± 0.31, 3.06 ± 0.31 and 3.09 ± 0.38 respectively. Figure 5 describes the changes in mean CAL over the course of

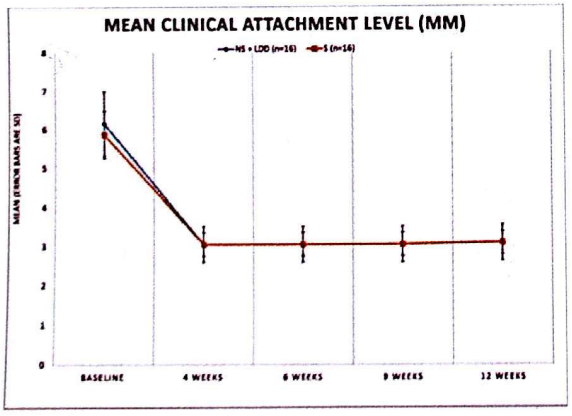

Figure 5: Mean CAL across Group NS+LDD and Group S

the study at both the sites in both the groups. In both the groups at both the sites, statistically significant difference was found in CAL values between baseline and 4 weeks ($p < 0.01$). No statistically significant difference was found between 4 to 6 weeks, 6 to 9 weeks and 9 to 12 weeks in both sites ($p > 0.05$). On comparing mean scores of CAL between the two groups using one way ANOVA, there was no statistically significant difference between Group NS + LDD and Group S (F ratio close to 1), at any time interval (Figure 6).

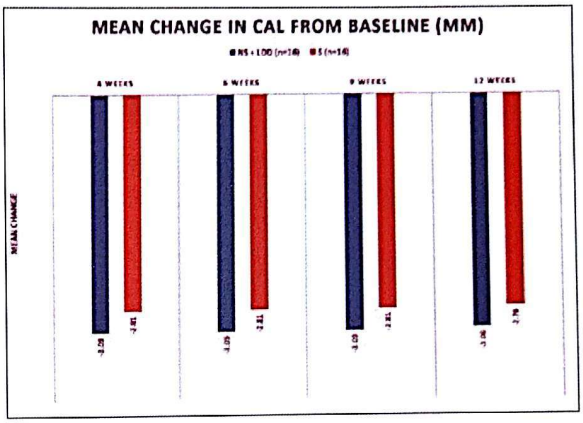

Figure 6: Mean CAL Change across Group NS+LDD and Group S

The mean Plaque Index (PI) score for Group NS + LDD was 1.07 ± 0.29 at baseline, 0.86 ± 0.21 at 4 weeks, 0.74 ± 0.21 at 6 weeks, 0.64 ± 0.22 at 9 weeks and 0.56 ± 0.21 at 12 weeks post treatment. The mean PI score for Group S was 1.05 ± 0.30 at baseline, 0.96 ± 0.29 at 4 weeks, 0.87 ± 0.30 at 6 weeks, 0.77 ± 0.29 at 9 weeks and 0.66 ± 0.29 at 12 weeks post treatment. The mean difference in PI at baseline and 4, 6 9 and 12 weeks was statistically highly significant in both the groups ($p < 0.01$). On comparing mean scores of PI between the two groups using the Mann-Whitney U Test, there was no statistically significant difference in the mean scores at baseline and at the follow-up intervals ($p > 0.05$) (Figure 7). The mean Gingival Index (GI) score for *Group NS + LDD* was 1.37 ± 0.20 at baseline, 0.78 ± 0.15 at 4 weeks, 0.57 ± 0.13 at 6 weeks, 0.49 ± 0.19 at 9 weeks and 0.37 ± 0.17 at 12 weeks post treatment. The mean GI score for Group S was 1.26 ± 0.15 at baseline, 0.74 ± 0.16 at 4 weeks, 0.55

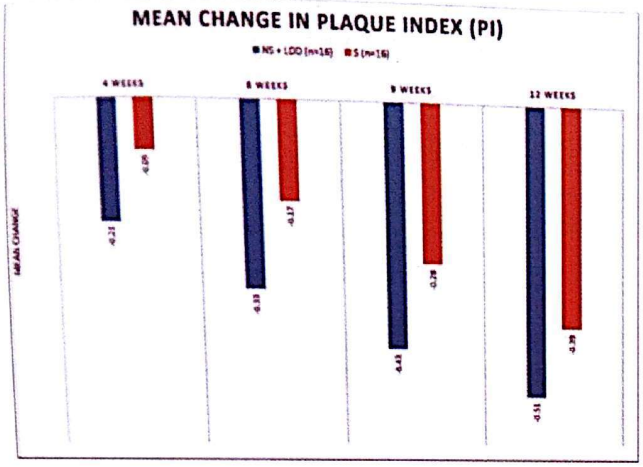

Figure 7: Mean PI Changes across Group NS+LDD and Group S

±0.18 at 6 weeks, 0.44±0.16 at 9 weeks and 0.33±0.16 at 12 weeks post treatment. The mean difference in GI at baseline and 4, 6 9 and 12 weeks post treatment was statistically highly significant ($p < 0.01$) in both the groups. On comparing mean scores of GI between the two groups using the Mann-Whitney U Test, there was no statistically significant difference in the mean scores at baseline and at the follow-up intervals ($p > 0.05$) (Figure 8).

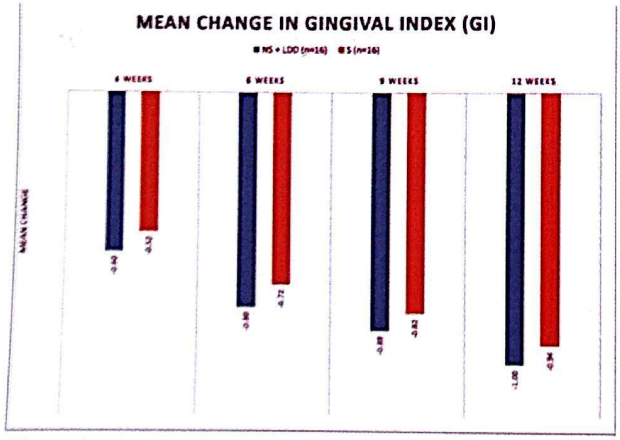

Figure 8: Mean GI Changes across Group NS+LDD and Group S

DISCUSSION

In both the groups, statistically significant reduction in Probing Pocket Depth (PPD) was observed from the baseline to 4, 6, 9 and 12 weeks post treatment. There was a statistically significant difference observed when the two groups were compared to each other. This demonstrates that whereas, both the treatment modalities are effective in reducing in probing pocket depths, the surgical therapy seems to be more effective in doing so than the non-surgical therapy, even when adjuncted with tetracycline local drug delivery. This phenomenon can be explained on the basis of the fact that surgical therapy resulted in more gingival recession than non-surgical therapy adjuncted with local drug delivery. Even so, the 12 weeks mean values of non-surgical therapy adjuncted with tetracycline local drug delivery fall within the limits of periodontal health and hence can be deemed acceptable. The patients treated by non-surgical therapy adjuncted with tetracycline local drug delivery succeeded in maintaining acceptably good oral hygiene with the help of appropriate cleansing aids due to improved periodontal parameters, as demonstrated by the comparable plaque indices of the two groups at the end of the study period.

In both groups, statistically significant reduction in Clinical Attachment Level (CAL) was observed from the baseline to 4, 6, 9 and 12 weeks post treatment. There was a statistically insignificant difference observed when the two groups were compared to each other. This demonstrates that both the treatment modalities are equally effective in gaining clinical attachment level. This once again reinforces the fact that surgical therapy results in more gingival recession than non-surgical therapy adjuncted with local drug delivery.

Also, the reductions obtained in PPD and CAL at the end of 4 weeks were maintained in both the groups till the end of the study period, as demonstrated by insignificant differences at 4, 6, 9 and 12 weeks post treatment within each groups.

The results of the present study in connection with PPD and CAL are in agreement with long-term (12

months to 5 years) trials.[11-17] The present study, however, involved special population i.e. diabetic patients. Also, all the above mentioned trials did not employ any local drug delivery that served as an adjunct to non-surgical therapy. Nevertheless, an overall agreement with the results of these long-term trials could be demonstrated.

In both groups, statistically significant reduction in Plaque Index (PI) and Gingival Index (GI) was observed from the baseline to 4, 6, 9 and 12 weeks post treatment. However there was no statistically significant difference observed when the two groups were compared to each other. This demonstrates that both the treatment modalities result in comparable reduction in the plaque scores of the patients. A general trend of progressive decline in plaque index scores over the duration of the study was seen. This could be due to the repeated reinforcement of oral hygiene habits in recall visits and overall general improvement in periodontal parameters.

The reduction in PI is in agreement with many longitudinal periodontal therapy trials that compare non-surgical therapy with surgical therapy.[11-13,15,18-23] The reduction in GI is also in agreement with many longitudinal periodontal therapy trials that compare non-surgical therapy with surgical therapy.[11,12,14,15,20-22,24]

One of the primary limitation of the present trial was the relatively short duration of study. A trial with a long term follow up can further substantiate the findings of this study. Also, a trial that takes into account other local contributing etiologies like furcations can help in eliminating other confounding factors.

In summary, both non-surgical therapy adjuncted with local drug delivery and surgical therapy were found to be effective in reducing PPD, CAL, PI and GI. No statistically significant difference was found in the efficacy of the two therapies for any of the parameters investigated except PPD, for which surgical therapy was found to be significantly more efficacious of the two. However, the reduction in probing pocket depth with non-surgical therapy adjuncted with local drug delivery was found to be clinically sufficient to restore the health of the periodontal tissues.

CONCLUSION

Based on these observations, within the limits of the study, the following conclusions can be drawn:

- Non-surgical therapy adjuncted with local drug delivery of tetracycline resorbable fibers appears to be clinically as efficacious as surgical therapy for treatment of deep pockets measuring 5-8 mm in controlled non-insulin dependent diabetes mellitus patients.
- Non-surgical therapy adjuncted with local drug delivery may be employed as the preferred therapy in deep pockets measuring 5mm-8mm in individuals with controlled type II diabetes mellitus.

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Source of Support: Nil, Conflict of Interest: None Declared