A non-surgical treatment of peri-implantitis using mechanic, antiseptic and anti-inflammatory treatment: 1y follow up

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Abstract

Background

Peri-implantitis is major concern in the current implantology with growing incidence. Surgical intervention includes resective surgery, open flap debridement or bone augmentation, all with chance of complications and morbidity. Surgical treatment outcomes are controversial in current literature. Non-surgical intervention includes debridement of soft tissue with various materials and instrumentations and slow release devices. Non-surgical treatment exhibit limited success and predictability.

Methods and Materials

To assess the clinical outcome six and twelve months after a non-surgical treatment of peri-implantitis per se or conjunction with combination of local antiseptic and anti-inflammatory treatment. Sixty-eight patients with periodontitis (grade 1-3, and stage A-B) with a total of 102 implants with peri-implantitis were included. Peri-implantitis was defined as radiographic bone loss more or equal to 3 mm, probing depth (PD) more or equal to 6 mm with bleeding on probing (BOP). Treatment of implants was performed with ultrasonic debridement, soft tissue curettage (group MEC), or addition (group MEC+LPA) of implant's surface treatment with rotatory hand piece composed of chitosan bristle, soft tissue curettage combined with application of 0.95% hypochlorite and amino acid and at the end application of 1mg minocycline HCl.

Results

After 6 months both groups (MEC and MEC+LPA) demonstrated significant reductions ($P < 0.05$) of mean PD (1.8 ± 0.6 mm, 2.5 ± 0.5 mm), clinical attachment level (CAL) (1.5 ± 0.8 mm, 1.9 ± 0.6 mm), and BOP ($21.4\% \pm 14.2\%$, $33.2\% \pm 12.3\%$). The improvement was demonstrated after 12 months without significant differences between 6 and 12 months. After 12 months the MEC+LPA group showed significant better results compared to MEC alone in PD (4.2 ± 0.3 mm, 5.1 ± 0.5 mm, respectively, $P < 0.05$) and BOP ($15.3\% \pm 6.2\%$, $25\% \pm 8.2\%$, respectively, $p < 0.05$).

Conclusions

It is suggested that adjunctive of local antiseptic and anti-inflammatory during mechanical phase is positively associated with inflammation reduction and adhesion of connective tissue attachment.

Results

Figure 1: Treat with the new protocol for implant disinfection

After 6 months both groups (MEC and MEC+LPA) demonstrated significant reductions ($P < 0.05$) of mean PD (1.8 ± 0.6 mm, 2.5 ± 0.5 mm), clinical attachment level (CAL) (1.5 ± 0.8 mm, 1.9 ± 0.6 mm), and BOP ($21.4\% \pm 14.2\%$, $33.2\% \pm 12.3\%$). The improvement was demonstrated after 12 months without significant differences between 6 and 12 months. After 12 months the MEC+LPA group showed significant better results compared to MEC alone in PD (4.2 ± 0.3 mm, 5.1 ± 0.5 mm, respectively, $P < 0.05$) and BOP ($15.3\% \pm 6.2\%$, $25\% \pm 8.2\%$, respectively, $p < 0.05$).

Background and Aim

Dental implants are valid choice for lost tooth replacement, with high survival rate. Nevertheless, biological complications are not rare. Main biological complication is peri-implantitis – plaque-associated pathological condition occurring in tissues around dental implants¹. Peri-implantitis exhibits greater tissue and bone destruction compared to periodontitis and as such must be treated and followed more strictly². Today, different methods surgical and non-surgical are available. Both of them comprise risks, adverse events, complications or limited predictability³. The aim the study is to assess the clinical outcome six and twelve months after a non-surgical treatment of peri-implantitis as sole treatment or in conjunction with combination of local antiseptic and anti-inflammatory treatments.

Conclusion

Within the limitations of the present study, additional use of chitosan brush to implant surface decontamination with combine application of 0.95% hypochlorite and 1mg minocycline HCl as part of peri-implantitis non-surgical treatment, resulted in statistically significant and clinical significant better results in terms of changes in pocket depth reduction after 6 and 12 months.

Methods and Materials

Sixty-eight patients with periodontitis (grade 1-3, and stage A-B) with a total of 102 implants with peri-implantitis were included. Treatment of implants was performed with ultrasonic debridement, soft tissue curettage (group MEC), or addition (group MEC+LPA) of implant's surface treatment with rotatory hand piece composed of chitosan bristle, soft tissue curettage combined with application of 0.95% hypochlorite and amino acid and at the end application of 1mg minocycline HCl (Fig 1A-D). At baseline and at 6 (T1) and 12 months (T2), the following clinical variables were recorded.

References

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