The Effect of Periodontal Therapy on Diabetic Patients

Amelia Cohen, Deidra Perreault, Riley Reardon | Dental Hygiene Department, Westbrook College of Health Professions

Research Question

Are diabetic patients receiving periodontal therapy at a decreased risk for large pocket depths compared to those without periodontal treatment?

Abstract

Diabetes mellitus is a common metabolic disease affecting the body’s ability to produce the hormone insulin. The comparison between diabetic patients who received periodontal therapy, as opposed to those who have not, is explored in this report. Factors such as clinical attachment loss, probing depths, and effectiveness of periodontal therapy are measured. Recognizing the study’s limitations, we conclude that non-surgical periodontal treatment on diabetic patients with periodontitis is shown to be clinically significant.

Introduction

• Among adults, some of the most prevalent chronic diseases are diabetes and periodontitis, which influence each other’s progression. 1
• The systemic inflammation produced in diabetes increases the localized inflammation in periodontitis. 2
• Patients with periodontitis respond well to non-surgical periodontal therapy. 3
• Metformin, a common anti-diabetic medication, has positive adjuvant effects on non-surgical periodontal therapy. 4

Review of Literature

• Patients with type-2 diabetes mellitus are 1.17 times more likely to suffer from damaged periodontal tissue than healthy individuals. 3
• Periodontal patients with diabetes taking metformin may experience a more significant effect of periodontal therapy than those without it. 4
• Periodontal inflammation can be caused by glycemic control alone. 2
• Patients with periodontitis and well-controlled diabetes respond similarly to patients without diabetes receiving non-surgical periodontal therapy. 1

Figure 1: How diabetic individuals are at increased risk for changes in the oral microbiome.

Discussion

• Patients with diabetes have a higher prevalence of periodontal disease when compared to patients without diabetes. 3
• Research has shown that diabetic patients explicitly medicated with adjuvant metformin to periodontal therapy have proven to have better periodontal health than those who do not receive metformin during treatment. 4

Limitations of the research:

• The participants were all Japanese patients with poorly controlled type-2 diabetes. 1
• The correlation between periodontal inflamed surface areas and HbA1c levels was narrowed to a population of poorly controlled type-2 diabetes. 3

Suggestions for future research:

• There is a need for larger sample sizes with a more controlled environment to enhance the validity of these outcomes.

Conclusion

• Each of the articles reviewed thus far concludes that diabetic patients receiving periodontal therapy are at a decreased risk for large pocket depths compared to those without periodontal treatment. 1-4
• Diabetes has a significant effect on increased probing depths and clinical attachment loss. 1-4
• Metformin is an acceptable adjuvant treatment to non-surgical periodontal therapy. 4

References


