Treating periodontitis improves blood glucose control



A bidirectional relationship, or two-way link, means that two conditions influence each other in both directions. For example, with diabetes and periodontitis, as one condition worsens, it negatively impacts the other. Therefore, poorly controlled diabetes can increase inflammation and result in more severe periodontitis, while periodontitis can raise blood glucose levels and increase the risk of diabetic complications. Conversely, improving one condition can positively influence the other.

Glycosylated haemoglobin (HbA1c) is one of the key indicators of blood glucose levels and provides a better measure of long-term glycaemic control compared to blood glucose. It is the result of glucose (sugar) sticking to your red blood cells. Red blood cells have a lifespan of 2-3 months, which is why an HbA1c reading is your average blood glucose level for the last 2-3 months.

Periodontitis results in local inflammation (within the mouth) and a systemic inflammatory response (inflammatory response spread throughout the body). Therefore, treating periodontitis may help reduce the spread of systemic inflammation. The treatment of periodontitis involves a sequence of steps, including tailored oral hygiene instructions (OHI), risk factor control, and professional mechanical plaque removal (PMPR) above (supragingival) and below the gum margin (subgingival). In some instances where the disease has not resolved, gum surgery may be recommended. Additionally, antimicrobials may be indicated in some cases.

A Cochrane systematic review (a high-quality, comprehensive summary of research evidence) assessed randomised controlled trials (RCTs) including people (≥16 years old) with diabetes and periodontitis. The individuals were either randomised to the group receiving periodontitis treatment or the control group, which included no or delayed treatment or OHI ± supragingival PMPR. This research demonstrated evidence of reductions in HbA1c in the individuals who received periodontal treatment:

- 4.7mmol/mol (0.43%) at 3 4months
- 3.3mmol/mol (0.30%) at 6 months
- 5.4mmol/mol (0.50%) at 12 months

HbA1c thresholds for diabetes and pre-diabetes in the United Kingdom (UK) are:

- ≥48mmol/mol (≥6.5%) Diabetes
- 42mmol/mol 47mmol/mol (6.0 6.4%) Pre-diabetes (higher than normal blood glucose levels and indicates you are at an increased risk of developing diabetes)

Therefore, this confirmed that periodontal treatment can provide clinically significant improvements in glycaemic control in those with both periodontitis and diabetes.

References

Simpson TC, Clarkson JE, Worthington HV, MacDonald L, et al. Treatment of periodontitis for glycaemic control in people with diabetes mellitus. Cochrane Database Syst Rev. 2022 Apr 14;4(4): CD004714. doi: 10.1002/14651858.CD004714.pub4. PMID: 35420698;