

Interrelation between Glycosylated Hemoglobin and Periodontal Disease

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In the last weeks we have read the article that we have attached and that has been published in a prestigious journal of Oral Medicine.

"Hasuike A, Iguchi S, Suzuki D, Kawano E, Sato S. Systematic review and assessment of systematic reviews examining the effect of periodontal treatment on glycemic control in patients with diabetes. Med Oral Patol Oral Cir Bucal. 2017 Mar 1;22(2):e167-e176".

We have to congratulate the authors for making such a great and exhaustive work. However, we like to make a consideration regarding the first conclusion:

We can conclude that there is a significant effect of periodontal treatment on improvement of HbA1c in diabetes patients, although the effect size is extremely small.

We humbly think that the average decrease of 0.465 HbA1c, which is a data presented by the author on table 3, represents a significant decrease in every patient and especially in those patients with a moderate glycemic control. These patients could spare the use of an anti-diabetic medication and even reduce the long term cardiovascular complications up to 25 - 50%.

According to the American Diabetes Association, glycemic control is the angular stone in type 2 diabetes mellitus management [1]. The historic study published on 1995 [2] regarding the control and complication of diabetes, clearly revealed that glycemic control is key to reduce micro and macrovascular complications of the disease. Also, this clinical randomized study specified that HbA1c > 7.0% is associated with a higher risk of micro and macrovascular complications, which was independent of the treatment used.

High levels of HbA1c increases the risk of hypertriglyceridemia on 2.69 (OR = 1.71-4.23, p < 0,001). Thus, a poor glycemic control increases the risk of hypertriglyceridemia in 2.69% average. This suggests a higher risk of atherogenicity due to the dyslipidemia associated to a deficient control on diabetes. HbA1c > 7.0% is associated with a higher risk of micro and macrovascular complications, independently of the treatment used [3].

There are numerous studies that indicate the importance of a good glycemic control. There are reports on the association between the increase of average HbA1c and the risk of diabetic foot [4], retinopathies [5], renal failure [6], cardiovascular disease [3,4,7] and cerebrovascular disease [4].

Additionally, in the 2013 scientific meeting "Workshop on Periodontitis and Systemic Diseases", a declaration was made on the evidence of the effect of periodontal intervention on glycemic control [8]. This event highlighted that the last clinical randomized studies had consistently demonstrated that mechanical periodontal treatment was associated with HbA1c decrease of 0.4% at 3 months and with a clinical impact equivalent to the addition of a second drug in a diabetes pharmacological regimen [8].

The results on Hasuike., *et al.* 2017 review, showed a global average improvement of 0.46%, agreeing with data from a meta-analysis published by Teshome., *et al.* 2016 [9], where the combined analysis between the control group (CG) and the treatment group (TG) showed a decrease on HbA1c of 0.48% (CI of 95%: 0.18, 0.78, $p = 0.002$) [9]. Although, this percentage of improvement on HbA1c may seem modest, it has a significant clinical impact, because any decrease on glycated hemoglobin is associated to a decrease on long term diabetes complications [4]. Also, there are studies that indicate that every 1% of HbA1c decrease is associated to a 21% reduction on deaths related to diabetes, a 14% reduction on myocardial infarction and a 37% reduction on diabetes microvascular complication [4].

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