



Post Covid 19 HBA1C Level in Non-Diabetic Patients with Chronic Periodontitis at Baseline and 3 Months

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Abstract

Background: This study aims to evaluate the impact of Coronavirus on HB1AC levels in non-diabetic patients and impact of HB1AC levels in treated and untreated periodontitis in post covid patients. **Material & Methods:** 20 post covid patients with chronic periodontitis were taken for the study. Patients were divided into test(SRP) and controlled (without SRP) group. These HB1AC level and clinical parameters were recorded at baseline and 3 months. **Results:** All the clinical parameters and HB1AC levels were statistically significant in test group in comparison to the control group. **Conclusions:** In post covid non-diabetic patients with periodontitis had higher levels of HB1AC, non-surgical therapy was performed, tends to improve the HB1AC level in treated patients than untreated patients.

Keywords:- Covid 19, Diabetes, Periodontitis, HBA1C, Oral health.

INTRODUCTION

In March 2020, the WHO declared a global pandemic due to coronavirus.^[1] The transmission of virus causing the disease occurs by direct or indirect contact with droplets from the airway and respiratory secretions of infected patients.^[2] Dental care has become a potential risk of contagion due to proximity with the patients and the frequent generation of aerosols in clinical procedures. As a result, many patients cancel or postponed their dental treatments. Periodontitis on other hand is also considered as an inflammatory disease. Severe periodontitis affects 10% of the global population. Periodontitis is associated with the

presence of a dysbiotic biofilm triggering the progression of periodontal disease.^[3] Many post covid patients have seen increase in HBA1C level. Diabetes and periodontitis share the same risk factors and bidirectional association. Clinical studies indicate that diabetics patients are more likely to have periodontitis. Moreover, periodontitis in patients with diabetes can adversely affect the glycaemic control thereby increasing the risk of other complications, such as cardiovascular diseases and retinopathy. Therefore, international organizations have suggested a comprehensive oral health care and comanagement of diabetes and periodontitis.^[4] The aim of the present study was to evaluate the impact of coronavirus on HBA1C level in non-

diabetic patients and impact of HBA1C level in treated and untreated periodontitis in post covid patients.

MATERIAL AND METHODS

The present study was conducted on 20 post covid patients with chronic periodontitis in the department of periodontics, Mithila Minority dental Collage and Hospital, Darbhanga, Bihar. This is a clinical study, patients were divided as test (SRP) and controlled (without SRP) groups, HBA1C level data sheet [Figure 1] and clinical parameters were recorded at baseline and at 3rd month [Figure 2] A prior approval of institutional ethical committee was taken to conduct the study.

CLIENT CODE : C00040223 CLIENT'S NAME AND ADDRESS : STANDARD COLLECTION CENTER NEAR NAVIN PHARMACY HOSPITAL ROAD LAHERIA SARAI DARBHANGA, 846003 BIHAR, INDIA 9471871945		SRL LIMITED KRUSHI CARE PVT.LTD,CAPITOL TOWER(B-BLOCK),1ST FLR,OPP.AAKASHWANI BHAWAN CIRCLE,FRASER ROAD PATNA, 800001 BIHAR, INDIA Tel : 0612-2216036-2332005 / 9931770713, Fax : CIN - U74899PB1995PLC045956 Email : wellness.patna@srl.in	
PATIENT NAME : RAJU ACCESSION NO : 00345L006187 AGE : 46 Years SEX : M DATE OF BIRTH : DRAWN : 28/11/2019 REPORTED : 29/11/2019		PATIENT ID : 	
REFERRING DOCTOR : DR. NITESH KUMAR			
Test Report Status	Final	Results	Biological Reference Interval Units
BIO CHEMISTRY			
GLYCOSYLATED HEMOGLOBIN, BLOOD			
GLYCOSYLATED HEMOGLOBIN (HBA1C)	7.5	High Non-diabetic: < 5.7 Pre-diabetics: 5.7 - 6.4 Diabetics: > or = 6.5 ADA Target: 7.0 Action suggested: > 8.0	%

Figure 1:



Figure 2:

Inclusion criteria

1. Non- diabetic pts
2. Chronic periodontitis pts
3. Post covid pts

Exclusion criteria

1. Patients with known systemic disease.
2. Pregnant and lactating mothers
3. Patients with unwillingness to complete the study
4. Tobacco user
5. Patient under medication



Figure 3:

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PATIENT NAME : RAJU ACCESSION NO : 00345L007059 AGE : 46 Years SEX : M DATE OF BIRTH : DRAWN : 24/02/2020 REPORTED : 25/02/2020		PATIENT ID : 	
REFERRING DOCTOR : DR. NITESH KUMAR			
Test Report Status	Final	Results	Biological Reference Interval Units
BIO CHEMISTRY			
GLYCOSYLATED HEMOGLOBIN, BLOOD			
GLYCOSYLATED HEMOGLOBIN (HBA1C)	7.3	High Non-diabetic: < 5.7 Pre-diabetics: 5.7 - 6.4 Diabetics: > or = 6.5 ADA Target: 7.0 Action suggested: > 8.0	%

Figure 4:

Procedure

10 pts were randomly assigned for the test group (SRP) and another 10 pts were assigned for the control group (without SRP). All patients received clinical examination and blood investigation done at baseline and 3rd month. Probing pocket depth, clinical attachment level, Bleeding on probing and gingival index were recorded. Pts blood drawn from antecubital fossa for HbA1C level. Patient consent was taken and SRP was done for test group, oral hygiene instructions were given and all the

patients were recalled after 3 months to check the clinical parameters [Figure 3] and HbA1C level [Figure 4]

RESULTS

A total of 20 covid 19 patients with chronic periodontitis were selected. Clinical parameters and blood were taken. SRP done for test group and patients were recalled after 3 months. All the clinical parameters and HbA1C level were statistically significant in test group in comparison to control group.

Table 1: Comparison of clinical parameters at different time intervals within the groups

Group	Parameters	Mean	Std. Deviation	Paired Difference	T	p value
Test gr	HbA1c baseline	6.79	0.51	.10	8.59	.00*
	HbA1c 3 months	6.68	0.48			
	GI baseline	1.79	0.29	.19	4.80	.00*
	GI 3 months	1.60	0.13			
	PD baseline	4.44	0.40	.39	11.39	.00*
	PD 3 months	4.05	0.23			
	CAL baseline	4.56	0.39	.20	12.92	.00*
	CAL 3 months	4.37	0.34			
Control gr	HbA1c baseline	6.81	0.75	-.01	-.55	.59
	HbA1c 3 months	6.82	0.71			
	GI baseline	1.87	0.16	.02	3.97	.00*
	GI 3 months	1.85	0.15			
	PD baseline	4.67	0.44	.01	1.02	.31
	PD 3 months	4.66	0.44			
	CAL baseline	4.83	0.44	.02	1.16	.25
	CAL 3 months	4.81	0.44			

* Statistically Significant

Table 2: Intergroup comparison of clinical parameters at different time intervals

Parameter	Group	Mean	Std. Deviation	Mean Difference	t	P value
HbA1c baseline	T	6.79	0.51	-.02	-.17	.87
	C	6.81	0.75			
HbA1c 3 months	T	6.68	0.48	-.14	-1.14	.26
	C	6.82	0.71			
GI baseline	T	1.79	0.29	-.08	-1.69	.09



	C	1.87	0.16			
GI 3 months	T	1.60	0.13	-.25	-8.70	.00*
	C	1.85	0.15			
PD baseline	T	4.44	0.40	-.23	-2.73	.01*
	C	4.67	0.44			
PD 3 months	T	4.05	0.23	-.61	-8.65	.00*
	C	4.66	0.44			
CAL baseline	T	4.56	0.39	-.27	-3.23	.00*
	C	4.83	0.44			
CAL 3 months	T	4.37	0.34	-.44	-5.60	.00*
	C	4.81	0.44			

*Statistically Significant

DISCUSSION

The present study in post covid patients raised HBA1C level with periodontitis predominantly revealed that non-surgical periodontal therapy tends to improve the oral health.^[5] Present study aimed to evaluate the HBA1C level in post covid patients with periodontitis and to check the HBA1C level in treated and untreated patients with periodontitis. This study revealed raise in HBA1C level in non-diabetic post covid patients with periodontitis. Also, to evaluate the impact of non-surgical periodontal therapy on the level of HBA1C. Improvement in HBA1C level was seen in treated patients than untreated patients. Periodontitis has been associated with higher level of HBA1C in different populations, with an impact on physical dimensions, such as halitosis and diet, psychological and social related dimensions, which has also been observed in diabetic patients with

periodontitis.⁶ Severity of periodontitis is also associated with HBA1C level. A recent systemic review revealed that periodontitis increased the level of HBA1C and its impact increase the disease severity and extension of disease.^[7] In this regards, periodontal therapy has shown a positive impact on HBA1C level.^[8] In this study non- surgical periodontal therapy was able to improve the HBA1C level in periodontitis patients, those patients were required more stage 2 periodontal therapy but it could not perform due to pandemic.

CONCLUSIONS

In post covid non- diabetic patient with periodontitis had higher level of HBA1C, non-surgical periodontal therapy (SRP) was performed, tends to improve the HBA1C level in treated patients than untreated patients.

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