EFFECT OF HELICOBACTER PYLORI ERADICATION ON DIABETES CONTROL AND ALBUMINURIA IN TYPE 2 DIABETIC DYSPEPTIC PATIENTS

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INTRODUCTION

Diabetes mellitus (DM) is a systemic metabolic disorder characterized by hyperglycemia. Diabetes mellitus is common and increasing around the world.
Helicobacter pylori (H.pylori) is a gram negative bacterium that colonises the gastric mucosa. Infection with H. pylori has been known as a global public health issue.
H.pylori infection has been linked to a variety of metabolic disorders, most notably DM. Also, some studies have proposed a connection between H.pylori infection and endothelial dysfunction; our theory was that a favorable impact on microalbuminuria and diabetes control could be found after H.pylori eradication.

AIM OF THE WORK

To determine the impact of H.pylori eradication on diabetes control and microalbuminuria in patients with T2DM who have dyspeptic symptoms.

PATIENTS AND METHODS

Our study included 25 patients with T2DM, microalbuminuria and H.pylori positive infection before and after successful eradication of H.pylori. The patients enrolled were subjected to history taking, thorough clinical examination and routine laboratory investigations. Microalbuminuria through urinary albumin/creatinine ratio (UACR), the glycemic control through fasting plasma glucose (FPG), 2-hour plasma glucose (2-h PG) and glycated hemoglobin (HbA1c) level and H.pylori by stool antigen were evaluated.

RESULTS

The impact of eradication of H.pylori infection was statistically highly significant on the improvement of microalbuminuriain patients with T2DM on short term follow up. However, no statistical significant effect on the decrease of FPG or HbA1c.

Table 1: Distribution of the studied cases according to different parameters (n = 25)

	No. (%)
Age (years)	
≤50	10 (40%)
>50	15 (60%)
Mean ± SD.	51.4 ± 5.95
Median (Min. – Max.)	51 (38 – 60)
Gender	
Male	10 (40%)
Female	15 (60%)
Weight (kg)	
Mean ± SD.	94.4 ± 15.2
Median (Min. – Max.)	95 (62 – 118)
Height (cm)	
Mean ± SD.	167 ± 11
Median (Min. – Max.)	164 (150 – 182)
BMI (kg/m^2)	
Overweight (25-29.9)	4 (16%)
Obese ≥30	21 (84%)
Mean ± SD.	33.6 ± 3.7
Median (Min. – Max.)	34 (26.5 – 39)
Type of treatment of DM	
Insulin	17 (68%)
Oral anti diabetics	8 (32%)
Duration of DM (years)	
Mean ± SD.	14.04 ± 3.86
Symptoms	
Postprandial fullness	13 (52%)
Early satiation	6 (24%)
Epigastric pain	15 (60%)
Duration of dyspepsia (weeks)	
Mean ± SD.	11.28 ± 2.65
Median (Min. – Max.)	11 (6 – 16)
Systolic	
Mean ± SD.	124 ± 9.2
Median (Min. – Max.)	130 (110 – 140)
Diastolic	
Mean ± SD.	76.8 ± 5.4
Median (Min. – Max.)	80 (70 – 85)
Positive of H.pylori	
Before treatment	25 (100%)
After treatment	0 (0%)
H. pylori treatment	
Kacid+ PPI+ Amoxicillin	17 (68%)
Kacid+ PPI+ Tinidazole	2 (8%)
Levofloxacin+ PPI+ Amoxicillin	6 (24%)

Table 2: Comparison between before and after treatment according to different parameters (n=25)

	Before treatment	After treatment	Test of Sig.	p
Weight (kg)				
Mean ± SD.	94.4 ± 15.2	94.4 ± 14.7	t= 0.185	0.855
Median (Min. – Max.)	95 (62 – 118)	96 (65 – 117)		
BMI (kg/m^2)				
Mean ± SD.	33.6 ± 3.71	33.6 ± 3.97	t= 0.379	0.708
Median (Min. – Max.)	34 (26.5 – 39)	34 (25.9 – 40.2)		
Fasting blood glucose				
Mean ± SD.	167.8 ± 45.19	159.5 ± 45.55	t= 1.350	0.190
Median (Min. – Max.)	164 (97 – 240)	160 (78 – 252)		
Post prandial blood glucose				
Mean ± SD.	209.5 ± 50.57	237.6 ± 75.78	t= 2.767*	0.011*
Median (Min. – Max.)	224 (121 – 290)	250 (124 – 372)		
HbA1c				
Mean ± SD.	8.56 ± 1.42	8.42 ± 1.39	t= 1.035	0.311
Median (Min. – Max.)	8.50 (6.80 – 12.4)	8.10 (6.80 – 13.1)		
Albumin creatinine ratio				
Mean ± SD.	186.7 ± 80.6	87.4 ± 62.1	Z= 4.374*	<0.001*
Median (Min. – Max.)	213 (37 – 280)	86.1 (12.9 – 235)		

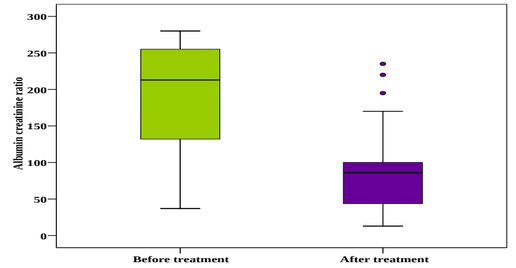

Figure: Comparison of UACR before and after treatment

CONCLUSION

H.pylori eradication was found to have a highly significant impact on the improvement of microalbuminuria in patients with T2DM.