Abstract / Povzetek predavanja

Long-term effect of Helicobacter pylori eradication on risk factors for cardiovascular disease – is there a connection?

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INTRODUCTION

Cardiovascular disease (CVD) remains the leading cause of mortality worldwide and although traditional risk factors for atherosclerosis are well established, accumulating evidence suggests that inflammatory parameters may also play a pivotal role in its pathogenesis. Recently, *Helicobacter pylori* infection has gained increasing attention as a potential contributor to CVD risk. Thus, our aim was to investigate the long-term effects of successful *H. pylori* eradication on several CVD risk factors.

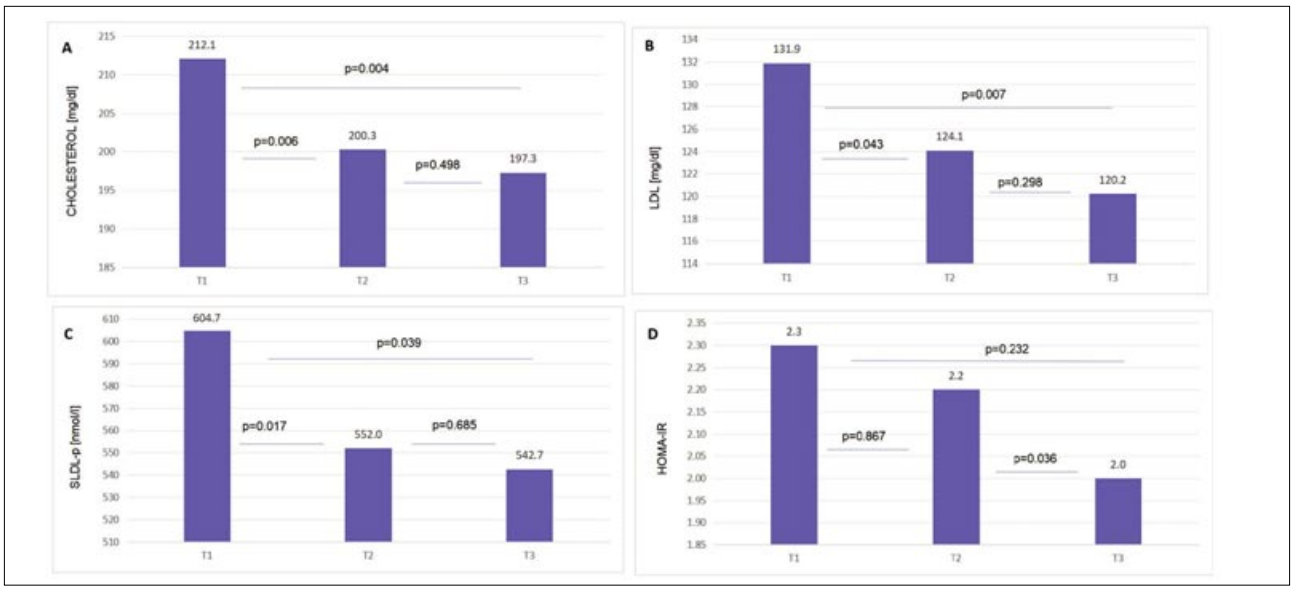

Figure 1. Total cholesterol, low density lipoprotein (LDL), small low density lipoprotein particles (SLDL-p) and insulin resistance (HOMA-IR) levels following H. pylori eradication.
Legend: T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication

Table 1. Changes in various parameters over time in the entire cohort.

	T1 (n=62)	T2 (n=62)	T3 (n=62)	p-value between times
Body mass index	27.0 ± 4.4	27.0 ± 4.3	26.8 ± 5.2	0.910
Waist circumference	92.8 ± 11.8	92.6 ± 12.0	93.7 ± 11.8	0.325
Antihypertensive therapy	14 (22.6%)	14 (22.6%)	14 (22.6%)	1.000
Dyslipidaemia therapy	6 (9.7%)	7 (11.3%)	7 (11.3%)	0.321
Insulin resistance (HOMA-IR)	2.3 ± 2.1	2.2 ± 1.4	2.0 ± 1.1	0.342
Cholesterol (mg/dl)	212.1 ± 39.5	200.3 ± 40.4	197.3 ± 41.9	**0.004**
LDL (mg/dl)	131.9 ± 34.0	124.1 ± 37.0	120.2 ± 35.4	**0.011**
HDL (mg/dl)	56.1 ± 15.5	54.0 ± 14.7	55.2 ± 15.3	0.159
Triglycerides (mg/dl)	141.3 ± 74.7	136.8 ± 63.1	135.8 ± 76.6	0.686
SLDL-p (nmol/l)	604.7 ± 334.0	552.0 ± 351.4	542.7 ± 351.9	**0.029**
TMAO (mg/l)	38.3 ± 29.9	29.2 ± 18.8	31.5 ± 30.4	**0.050**

T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication
LDL – low density lipoproteins, HDL – high density lipoproteins, SLDL-p – small low density lipoprotein particles, TMAO – trimethylamine N-oxide

METHODS

A total of 72 patients meeting the inclusion and exclusion criteria were enrolled (July 2020 to November 2022). Participants were randomly assigned to two treatment groups (group 1: 14-day regimen with esomeprazole, amoxicillin, and clarithromycin; group 2: 14-day regimen with esomeprazole, amoxicillin, metronidazole and colloidal bismuth subcitrate). We evaluated changes in insulin resistance (HOMA-IR score), lipid profiles and subtypes (nuclear magnetic resonance spectroscopy) and trimethylamine N-oxide (TMAO; Cardio Test INFAI) at baseline, two months, and one year following successful H. pylori eradication.

RESULTS

Of the 72 patients included, 13.9% (10/72) did not complete the study protocol. At baseline, no statistically significant differences were observed in CVD risk factors between the two groups. Following successful *H. pylori* eradication (Table 1 and Figure 1), both groups demonstrated significant reductions in total cholesterol (p = 0.004), low-density lipoproteins (p = 0.011), small dense lipoprotein particles (p = 0.029), and TMAO levels (p = 0.05). No statistically significant changes were observed in body mass index (BMI, p=0.910), waist circumference (p = 0.325) or insulin resistance (p = 0.342).

CONCLUSION

Successful eradication of chronic *H. pylori* infection was associated with a significant reduction in total cholesterol, low-density lipoproteins, small dense lipoprotein particles and TMAO in both treatment *groups. These findings suggest that chronic H. pylori* infection may influence lipoprotein levels and potentially increase the risk for CVD, possibly through increased systemic inflammation.

References

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