

Aim of the study

The aim of the study was to compare levels of asymmetric dimethylarginine (ADMA) in patients with coronary heart disease (CHD) in the presence or absence of metabolic dysfunction-associated steatotic liver disease (MASLD) and assess the possible association between ADMA and metabolic disorders.

Methods

The study included 50 patients with CHD, divided into two equal groups: 25 patients with MASLD and 25 patients without MASLD. The CHD was diagnosed based on clinical, electrocardiographic, and coronarographic data. MASLD was diagnosed using liver ultrasound. ADMA levels were assessed using enzyme-linked immunosorbent assay (ELISA) of the blood serum sample.

Results

The mean age in the MASLD group was 54.2 years, and in the group without MASLD, it was 53.8 years. The mean body mass index (BMI) of patients with MASLD was significantly higher (32.8 kg/m^2) than that of patients without MASLD (27.1 kg/m^2 , $p < 0.01$). Arterial hypertension was present in 80% of MASLD patients and 48% of patients without MASLD ($p < 0.05$). Type 2 diabetes mellitus (T2DM) was diagnosed in 52% of MASLD patients and 20% of patients without MASLD ($p < 0.05$). ADMA levels in patients with MASLD were significantly higher ($165.85 \pm 24.27 \text{ ng/mL}$) than in patients without MASLD ($129.44 \pm 20.22 \text{ ng/mL}$, $p < 0.001$). Moreover, the presence of three or more metabolic criteria (e.g., obesity, arterial hypertension, and diabetes mellitus) was associated with even higher ADMA levels ($190 \pm 20 \text{ ng/mL}$).

Conclusion

The obtained data confirm the necessity of a personalized approach to treating patients with CHD and MASLD, focusing on the correction of metabolic disorders to reduce ADMA levels.