

P24 Restored Physiological Local Carotid Pulse Wave Velocity After Bariatric Surgery in Obese Subjects

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ABSTRACT

Obesity is a risk factor for cardiovascular events and is associated with increased arterial stiffness [1,2]. However, the effect of drastic changes in Body Mass Index (BMI) on arterial mechanics has not been fully investigated. Our study aimed at evaluating changes in local carotid PWV (cPWV) in obese patients before and 6 months after bariatric surgery. $N = 20$ obese subjects free of cardiovascular events and diabetes (44 ± 9 years, 5 men, $BMI = 48.8 \pm 7.5$ kg/m²) undergoing bariatric surgery were recruited in the Pisa University Hospital (Italy). Flow and diameter waveforms were acquired by ultrasound scanner (Aloka Alpha10, Hitachi Group, Japan) (1 kHz) at the right common carotid artery at baseline, after a 32.4 ± 7.6 days diet period, and 6.5 ± 2.7 months post-intervention. The InDU-loop method was used for the estimation of cPWV [3]. Basal cPWV was 6.05 ± 1.21 m/s. The 1-month diet period produced a 2 kg/m² reduction in BMI, while cPWV decreased by approx. 0.6 m/s. 6–7 months after bariatric surgery, BMI dropped to 35.3 ± 6.5 kg/m² and cPWV furtherly decreased of approx. 0.9 m/s reaching a mean value of 4.57 ± 1.02 m/s (76% of the basal value) (Figure 1). Bariatric surgery and the consequent intensive weight loss produced a significant decrease of arterial stiffness and restored cPWV to physiological values of age-matched healthy subjects [4]. The fast reversal of increased arterial stiffness suggests a functional mechanism possibly related to a reduced haemodynamic load. Moreover, while having a small effect on the BMI, 1-month diet regulation effectively decreased cPWV by 10%, possibly indicating the short-term positive effects of a healthy lifestyle on haemodynamics.

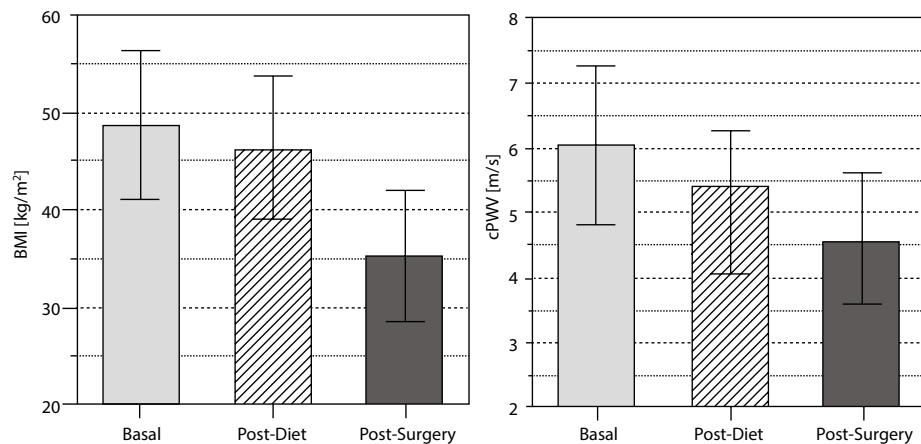


Figure 1

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