

PRE-OPERATIVE PHASE ANGLE PREDICTS BODY COMPOSITION AFTER BARIATRIC SURGERY

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Rationale: Obesity is associated to chronic low-grade inflammation that causes alterations in body cell mass and cell membrane dysfunction. Phase angle (PhA) is a bioelectrical impedance analysis (BIA) parameter that reflect cellular health and quality of lean body mass. The aim of this study was to determine whether pre-operative PhA predict weight loss outcomes and body composition after bariatric surgery.

Methods: This prospective study was conducted at bariatric surgery clinic, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand. We enrolled 87 participants (75% female) who underwent bariatric surgery between January 2018 and December 2019. Body composition and PhA were determined, using multifrequency bioelectrical impedance analysis (BIA) with eightpoint tactile electrodes (InBody 770; Biospace, Seoul, Korea), at pre-operative visit and at 6- and 12-month after operation.

Results: In all, 63 patients (72.4%) underwent laparoscopic Roux-en Y gastric bypass, and 24 patients (27.6%) underwent laparoscopic sleeve gastrectomy. Baseline mean age (SD) and mean body mass index (SD) was 35.8 ± 9.9 years and 46.9 ± 9.7 kg/m² respectively. Preoperative PhA was negatively associated with percent body fat (%BF; $r = -0.338$; $p < 0.05$) at 12-month post-operative. Moreover preoperative PhA was positively associated with percent skeletal muscle mass (%SMM; $r = 0.430$; $p < 0.05$) at 12-month post-operative. The associations remained significant even after adjusting with age, sex, and comorbidities. However, we could not demonstrate the significant correlation between preoperative PhA and percent excess weight loss at 12-month after surgery.

Conclusion: Our study demonstrated that higher preoperative PhA is associated with higher %SMM and lower %BF at 12 months after surgery. Pre-operative PhA may be a useful predictor of weight loss surgery outcomes.

Disclosure of Interest: None declared