Abstract
Objective: Malnutrition is associated with complications and prolonged hospital stay in critically ill patients. We assessed whether the measurement of the thickness of the adductor pollicis muscle (TAPM), a new tool to assess malnutrition is a valuable prognostic indicator in critically ill patients. Methods: Open cohort study including 248 patients admitted for either medical or surgical intensive care treatment in a tertiary hospital. Two were discharged for having age below 18 years-old and therefore 246 subjects of both sexes completed the entire analysis. Subjective global assessment and APACHE II scores were used to score the patients. TAPM of both hands was measured at admission with a caliper and correlated with mortality, days of mechanical ventilation, and length of hospital stay (LOS). Results: There was a significant correlation (R = 0.84, p < 0.001) between TAPM of the right and the left hand. Severe malnourished patients showed TAPM of both the left (12.3 ± 5.5 mm) and right sides (12.9 ± 5.3 mm) significantly lower (p < 0.001) than either patients scored as nourished (right hand = 17.2 ± 5.4 mm and left hand = 15.8 ± 4.6 mm). Risk of death was approximately 8 times higher in patients with APACHEII score above 20 (OR: 8.6, 95% CI: 3.7- 20.2; p < 0.001), and approximately 6 times higher in subjects with abnormal TAPM (OR: 6.3, 95% CI: 1.2-32.6; p = 0.02). However, TAPM did not correlate with length of stay and days of mechanical ventilation. Conclusion: TAPM is a valuable tool to predict mortality in critically ill patients.

Keywords
Nutritional assessment, Adductor pollicis muscle, Prognosis, Critically ill patients.