

BIOELECTRICAL PHASE ANGLE ON HOSPITAL ADMISSION AS PREDICTOR OF SHORT- AND MIDDLE-TERM MORTALITY IN ELDERLY MEDICAL PATIENTS.

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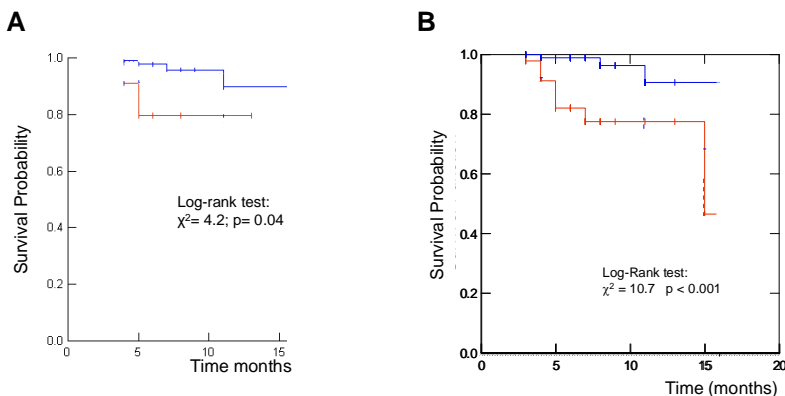
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Malnutrition in elderly hospitalized patients is a significant public health problem affecting 60-70% of this subpopulation. In fact, it is recognized as an important independent risk factor for morbidity and mortality. To date there are no well-defined clinical, instrumental and blood markers to diagnose malnutrition in this specific group of patients and to allow adequate follow-up of nutritional treatment as well as to predict events. The bioelectrical impedance analysis (BIA) is now a widely used method for the evaluation of body composition. In particular, the phase angle (PA), a BIA derived indicator based on body resistance and reactance and resistance, is assumed as an indicator of cellular membrane integrity and water distribution between the intra- and extra-cellular spaces and for these reasons it has also been used as an indicator of general and nutritional wellness. Moreover, even the Mini Nutritional Assessment (MNA) is a test that has been used for the assessment of nutritional status in the elderly.

This study was carried out to evaluate longitudinally the ability of BIA and MNA tests to predict mortality in the short and medium term beyond the traditional anthropometric and laboratory measurements in a group of hospitalized elderly patients.

One-hundred-fifty patients aged 73.5 ± 7.9 years (mean \pm sd) admitted to the internal medicine ward were included in the study regardless of the admitting diagnosis. After discharge clinical informations were obtained via telephone contact every 4 months with a maximum follow-up duration of 16 months (4 months: n = 130, 8 months: n = 94, 12 months n = 24, 16 months: n = 7 patients). At the end of the observation period 12 deaths were recorded. The definition of malnutrition according to the MNA was not able to predict mortality (P= 0.73). According to the median values of PA (4.0°), MNA (22) and serum albumin concentration (2.7 g/dl), the values of these variables were dichotomized as "low" or "high" respectively when below or above the median value. A low PA value was able to predict mortality (figure 1A) and even more when a cluster that aggregates low PA, low MNA and low albumin concentrations was considered (figure 1B).

Figure 1. Kaplan-Meyer curves describing the probability of surviving of resident elderly medical patients according to (A) the value of PA ($\leq 4.0^\circ$, red -lower- line; $>4.0^\circ$, blue -upper- line) or (B) a combination of PA $\leq 4.0^\circ$ + albuminemia ≤ 2.7 mg/dl + score of MNA test < 22 (red -lower- line) or, respectively, $> 4^\circ$ + > 2.7 mg/dl + ≥ 22 (blue -upper- line).



Although the preliminary results of this study need to be confirmed in a larger sample of patients and for a longer follow-up period, it seems that BIA is a good candidate for the diagnosis of malnutrition and to predict mortality.

References

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