

The relationship between phase angle and body composition in patients undergoing radiotherapy

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BACKGROUND: Bioimpedance electrical analysis (BIA) is a non-invasive, accurate, fast and safe method that is able to estimate the body composition. It consists of passing an electric current of low amplitude and high frequency by the body which allows measuring resistance, reactance, impedance, phase angle and lean/fat body mass. Several studies state that the phase angle is a predictor of malnutrition and inflammation in hospitalized patients and also reveal the importance of the fractionation of body components and is considered effective in scoring the nutritional status of cancer patients. Patients undergoing radiotherapy may experience adverse effects that lead to compromised nutritional status and could even stop treatment, as consequent morbidity and mortality of cancer patients.

HYPOTHESIS: To conduct descriptive analysis of patients undergoing radiotherapy and to evaluate the correlations between phase angle, lean body mass, fat body mass, age and body mass index (BMI)

METHODS: Retrospective study of 332 adult patients who have datas from BIA analysis and underwent radiotherapy performed at Oncology and Hematology Center of Albert Einstein Israelita Hospital, Unit Morumbi, in Sao Paulo, Brazil (2004-2012). The datas were collected from medical records: weight (kg), height (m), BMI (kg/m²), phase angle (°), fat body mass (%), lean body mass (%). The variables were described by means and standards deviations. The analyses were made from Anova program.

RESULTS: It has been found in the study group mean values of 55.4 ± 15 years old , 62.8 kg weight , BMI 24.04 kg / m², phase angle ± 1 5.9 degrees and lean mass 66.88 %. There is not correlated with the phase angle weight or age (p = 0.286 , 0.169 respectively) alone. However, showed strong significant relationship between groups according to ANOVA (p = 0.000) for age, BMI, phase angle , lean mass and fat mass , that is a significant difference between groups .