VAL 91 – Impedance ratio Z200/Z5 compared to phase angle at 50 kHz better predicts nutritional status and length of stay in hospitalized patients.

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OBJECTIVE: To evaluate the Z200/Z5 impedance ratio (IR) compared to the phase angle (PA) at 50 kHz as a prognostic clinical tool.

SUBJECTS / METHODS: This study retrospectively analyzed 316 (188M, 128F) hospitalized patients with an IR of 0.75-1.0 on admission to internal medicine, gastroenterology, and oncology wards, with over half undergoing surgery. Measurements were made using a bioimpedance spectroscopy device (Bodystat QuadScan 4000). Relationships between IR (or PA) and nutritional status (objectively defined by weight loss and BMI parameters), and length of stay (LOS) were evaluated by logistic (odds ratio, OR) and linear regression (beta) analysis, respectively.

RESULTS: Subject characteristics (mean±SD) were: age 58±18y, BMI 25±5, LOS 11±11days, IR 0.817±0.036 and PA 5.49±1.16. 27% of the patients were severely malnourished. For each 0.1 increase in the IR at admission, the odds ratio of severe malnutrition was 5.775 (2.669-12.498; p<0.001), and the LOS increased by 4.2±1.8 days (p=0.019). For each unit increase in PA at admission, the odds ratio of severe malnutrition was 2.019 (1.175-3.571; p=0.011), and the LOS increased by 2.3±1.3 days (p=0.076).

CONCLUSION: PA has been used as a prognostic indicator in various clinical populations. In this mixed inpatient group, the IR appears to better predict nutritional status and LOS compared to PA.

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