

# ESPEN 2013 - Abstract Submission

## *Nutritional assessment*

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### **BIOIMPEDANCE ILLNESS MARKER COMPARED TO PHASE ANGLE AS A PREDICTOR OF MALNUTRITION IN HOSPITALISED PATIENTS**

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**Rationale:** Both phase angle (PA) at 50 kHz and the ratio of impedances at 200 and 5 kHz (illness marker, IM) have been suggested as potentially useful predictors of nutritional status. Our objective was to compare these markers for their utility in predicting malnutrition in hospitalised patients.

**Methods:** Bioimpedance measurements were carried out in 109 hospital patients (52 M, 57 F; median age 57 y, range 17-87 y) with gastrointestinal disorders who were referred for nutritional support and underwent determination of total body protein (TBP) by neutron activation analysis. PA was derived from resistance and reactance measurements at 50 kHz (BIA-101, RJL Instruments) and IM from bioimpedance spectroscopy (4000B, Xitron Technologies). The same measurements carried out in healthy volunteers were used to establish cut-offs for low (abnormal) PA (<5.0° M, <4.1° F) and high (abnormal) IM (>0.78 M, >0.82 F). Patients were assessed as being significantly malnourished if measured TBP was <77% of that predicted from regression equations based on sex, age and height established in healthy volunteers.

**Results:** Of the 109 patients, 71 were malnourished, 22 had low PA, and 74 had high IM. High IM was associated with a 4.15-fold (95%CI: 1.77-9.75, P=0.001) increased odds of being malnourished while for low PA the corresponding odds ratio was 1.55 (0.55-4.37, P=0.41). Each 0.1 increase in IM was associated with a 4.64-fold (1.65-15.13, P=0.006) and each unit decrease in PA a 1.55-fold (1.10-2.18, P=0.012) increased odds of malnutrition.

**Conclusion:** In this patient group, IM was a more sensitive indicator of malnutrition than PA and may have application in bedside assessment of nutritional status.

**Disclosure of Interest:** None Declared

**Keywords:** bioimpedance, malnutrition