Influence of electrodes on body composition measurement by bioelectrical impedance analysis in supine position

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NRS-2002 (NRS-2002≥3) and MNA-SF (MNA-SF≤11), respectively. The comparison of screening test scores between deceased and alive group were given at Table-1. There were significantly differences between groups for risk of sarcopenia, malnutrition and frailty.

Table 1: The comparison of screening test scores between deceased and alive group

	Deceased (n:14)	Alive (n:58)	P value
CFS	5.0(4.0-6.0)	3.0(2.0-4.0)	0.001
SARC-F	6.0(4.0-8.0)	0(0-3.0)	<0.001
MNA-SF	6.0(4.7-9.0)	10.0(8.0-12.0)	0.001
NRS-2002	4.0(3.7-5.0)	3.0(0-4.0)	0.006

Conclusion: The patients who died within 9 months from admission to hospital had much higher risk of sarcopenia, malnutrition and frailty. These three diseases, who are interacted with each other should be screened and managed for all hospitalized patients with acute disease, especially COVID-19

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AIWW: A NEW NUTRITION SCREENING TOOL FOR THE ONCOLOGIC POPULATION

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Rationale: Malnutrition is a common comorbidity among patients with cancer. A quick and easy nutrition screening tool with high sensitivity and easy to use is needed for this population.

Methods: Malnutrition was defined by Scored Patient-Generated Subjective Global Assessment (PG-SGA). A screening tool named AIWW (Age, Intake, Weight loss, Walk for physical activity) had been built for oncologic population which only cost less than 2 min for screening. A total of 11360 patients with 6024 (53.0%) males were included in the final study cohort. All patients underwent the complete questionnaires including the PG-SGA, Nutritional Risk Screening 2002 (NRS-2002), Malnutrition Screening Tool (MST), and the Global Leadership Initiative on Malnutrition (GLIM) by professionals.

Results: 6363 patients were malnutrition by PG-SGA. Based on the AIWW, NRS 2002 and MST, there were 7545, 3469 and 1840 patients at risk of malnutrition respectively. The sensitivity and specificity of AIWW, NRS-2002, MST risk were 0.934 and 0.637, 0.531 and 0.946, 0.285 and 0.975. The Pearson r of AIWW, NRS-2002, MST risk were 0.588, 0.501, and 0.326. The area under the curve of AIWW risk, NRS-2002 risk, and MST risk were 0.785, 0.739, and 0.630, respectively. Consistency metrics of AIWW with different questions about diminish of physical function showed that they have a moderate-to-strong concordance with malnutrition (Kappa > 0.700). The GLIM malnutrition assessment with NRS-2002 included 3013 patients; and GLIM malnutrition assessment with AIWW included 4446 patients.

Conclusion: AIWW showed a better nutrition screening effect than NRS-2002 and MST in patients with cancer. It is an easy-to-use tool and does not need professional training. In malnutrition assessment of GLIM, AIWW is more suitable for screening malnutrition in oncologic population than NRS-2002.

Disclosure of Interest: None declared

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INFLUENCE OF ELECTRODES ON BODY COMPOSITION MEASUREMENT BY BIOELECTRICAL IMPEDANCE ANALYSIS IN SUPINE POSITION

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Rationale: The electrodes used to perform bioelectrical impedance analysis (BIA) in the supine position could affect body composition measurement. This study aimed to compare the BIA results obtained with four different electrodes.

Methods: Body composition was measured with 4 different electrodes (A: Data Input Bianostic AT; B: 3M Red Dot; C: Ambu BlueSensor 2300; D: Ambu BlueSensor SU-00-C/100) in sequential order (ABCD, BCDA, CDAB and DABC) on 24 healthy subjects in the supine position using the Nutriguard-M® (Data Input) BIA device. Resistance (R), reactance (Xc), phase angle (PhA), fat-free mass (FFM) and fat mass percent (FM%) obtained with electrodes B, C and D were compared with the values obtained with the reference electrodes A, provided by the Nutriguard-M® manufacturer, using Pearson correlations, biases ± 1.96 SD [LoA] and paired *t*-tests (a), $P < 0.05$; (b), $P < 0.01$; (c), $P < 0.001$.

Results: The study population included 9 men and 15 women with a mean age of 40 ± 13 years, body weight of 69.5 ± 11.6 kg, height of 169.3 ± 9.5 cm and BMI of 24.2 ± 3.3 kg/m^2. Compared to electrodes A, electrodes B and D gave significantly different Xc and PhA values (Table), but only electrodes D gave significantly different FFM and FM%, with biases [LoA] of -1 kg [-1.8 ; -0.2](c) and +1.4% [0.3 ; 2.6](c), respectively.

Table: Differences in BIA measurements at 50 kHz when using four different electrodes

	Electrodes A	Electrodes B	Electrodes C	Electrodes D
R (Ω)	526.8 ± 59.5	526.8 ± 59.7	527.3 ± 58.2	528.2 ± 57.7
Xc (Ω)	59.4 ± 7.5	58.6 ± 7.8(a)	58.9 ± 7.9	52.6 ± 7.3(c)
PhA (°)	6.5 ± 0.6	6.4 ± 0.7(b)	6.4 ± 0.6	5.7 ± 0.9(c)

Conclusion: The type of electrodes can affect the BIA measurement in the supine position. Therefore, it is necessary to specify the brand and model of electrodes used in body composition studies and carry out comparative tests before changing consumables or suppliers to ensure the comparability of BIA measurements over time and between settings.

Disclosure of Interest: None declared

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THE DEVELOPMENT OF A QUANTIFIED FOOD FREQUENCY QUESTIONNAIRE AND DIETARY ADHERENCE SCORE SHEET FOR PREDIALYSIS CHRONIC KIDNEY DISEASE PARTICIPANTS

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Rationale: Adherence to dietary guidelines in Chronic Kidney Disease (CKD) is low due to the complexity of diet. Specific tools for assessing these in CKD are lacking, making comparisons of dietary intake in trials difficult. We therefore aimed to develop a quantified food frequency questionnaire (QFFQ) and diet adherence score sheet for CKD predialysis participants to measure dietary intake and adherence.

Methods: Nested within an intervention trial, this study was conducted in CKD predialysis participants in a resource limited clinic in Cape Town, South Africa. The 160- item interview administered QFFQ was adapted from an existing QFFQ to include more potassium, sodium and phosphate containing foods, especially considering the biological value of phosphate and potassium from additive rich foods. The QFFQ consisted of food items from various food groups so that CKD specific nutrients such as energy, protein and micronutrients (especially sodium, potassium and phosphate)