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CORRELATION OF MUSCLE (RECTUS FEMORIS CROSS-SECTIONAL AREA) AND ADIPOSE TISSUE (FEMORAL AND ABDOMINAL) PARAMETERS OF NUTRITIONAL ULTRASOUND WITH THE VECTORIAL BIOIMPEDANCE MUSCLE MASS AND FUNCTIONALITY TEST IN HIP FRACTURE PATIENTS.

Poster ID: P019-T

Background

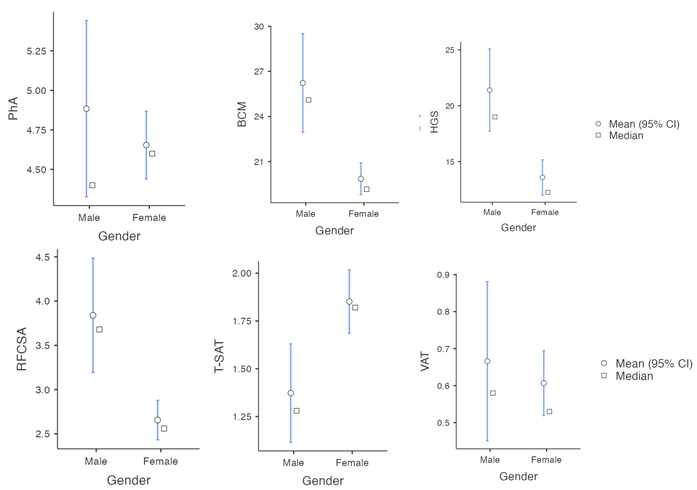
- Elderly hip fracture patients (EHFp) undergoing surgery are often malnourished or at risk.
- Baseline nutritional status of these patients could worsen clinical outcomes. Muscle wasting during the convalescence could contribute to functional disability.
- Nutritional ultrasound (NU) is positioning itself as a "point of care of ultrasound" (POCUS) technique in the nutritional assessment of sarcopenia risk and complications.

Results

85 patients, 75.9% female, mean age 80.7 years (± 6.8), weight 69.2±12.1 kg and length 159±9.15 cm. 72% of the fractures were extracapular and 28% intracapsular. According to MNA 10.6% were at risk of malnutrition and according to EWGPT they had sarcopenia 42.7% (HGS<27/16, 70.2%, ASMM <20/15 51.8%). The Barthel questionnaire showed 54.9% independent, 38% with mild dependency, 7% with moderate-severe dependency.

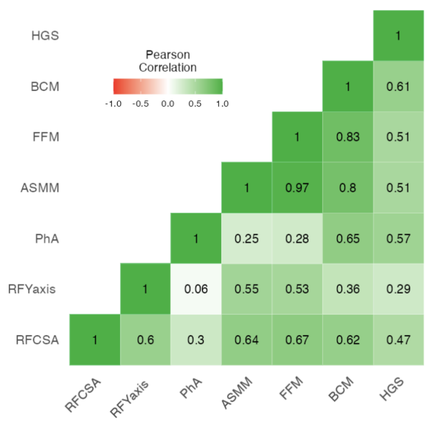
Baseline characteristics:	HHS (n=45)	Control (n=40)	p
Mean age: years (SD)	80.6 (6.8)	80.7 (7.3)	p(median)=0.831
Gender: Female Male	 32 13	 34 6	 p(χ2)= 0.125
Femoral fracture type: Intracapsular Extracapsular	 20 25	 17 23	 p(χ2)= 0.857
Hospital length: days (min-max)	6 (4 – 11)	7 (5 – 17)	p(median)=0.369
Anthropometrics: Mid-braquial Ø cm (SD) Waist circumf, cm (SD)	 27.1(4.3) 101(7.5)	 27 (2.7) 103 20.8	 p(median)=0.274 p(median)=0.666
BIA: PhA: degrees(SD)	4.59 (0.8)	4.82 (1.1)	
Hand grip strength: Kg(SD)	14.4(6.4)	15.9 (9.0)	

Figures 1: Description of the morphofunctional techniques by gender :

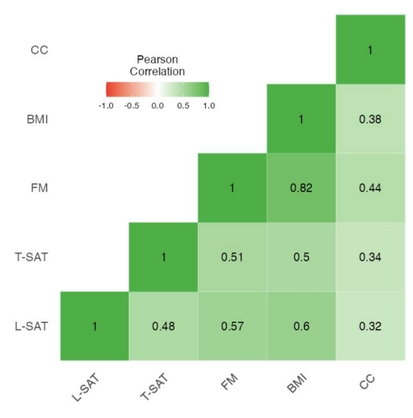


Figures 2: Reliability of the morphofunctional assessment model

A positive correlation is observed between the **muscle parameters** (BIVA-NU-HGS). Cronbach's=0.80.



A positive correlation is observed between the **adipose tissue parameters** (BIVA-NU-anthropometry). Cronbach's=0.50.



Method

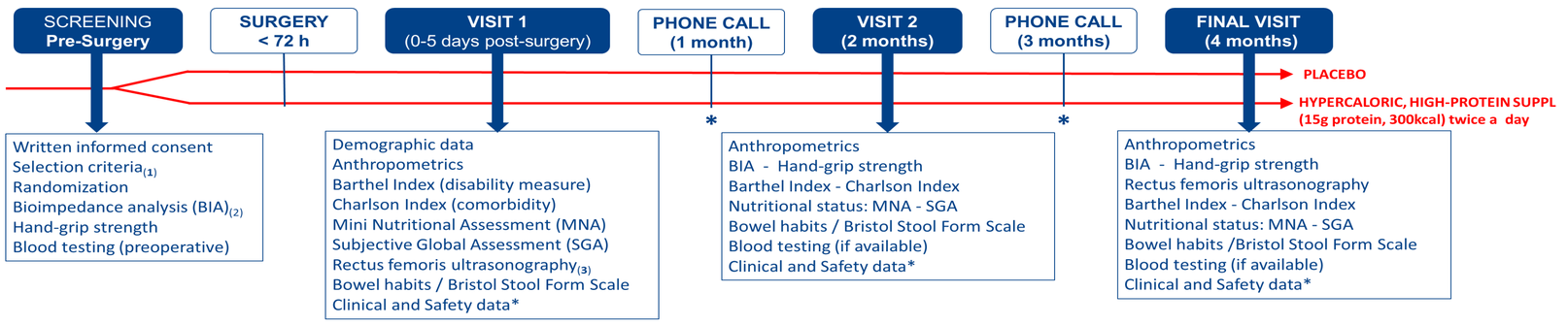
- **Inclusion criteria**: Males and females with hip fracture, age>65 years, surgery <72 hours after hospital admission
- **Exclusion criteria**: pathologic fracture, kidney or liver insufficiency, insulin-treated diabetes mellitus, pacemaker patients, previous orthopedic hip surgery.

(2): Bioimpedance analysis: phase angle (PhA), resistance, reactance, lean body mass, fat mass, total body water, intracellular and extracellular water.

(3): Rectus femoris cross-sectional area measured at the midpoint of muscle.

(*): **Safety data:** adverse events, product tolerance.

Double-blind, randomized, placebo-controlled trial



Summary/ Highlights

Nutritional ultrasound shows a good correlation with other basic (anthropometry) and advanced (BIVA and HGS) nutritional assessment techniques. It is necessary to establish new simple tools that relate the nutritional and functional situation of the patient in this complex pathology with high morbidity and mortality, in order to define strategies to optimize treatment.

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