METABOLIC BONE DISEASE IN ADULT PATIENTS WITH CHRONIC INTESTINAL FAILURE: EXPERIENCE FROM A THIRD LEVEL HOSPITAL

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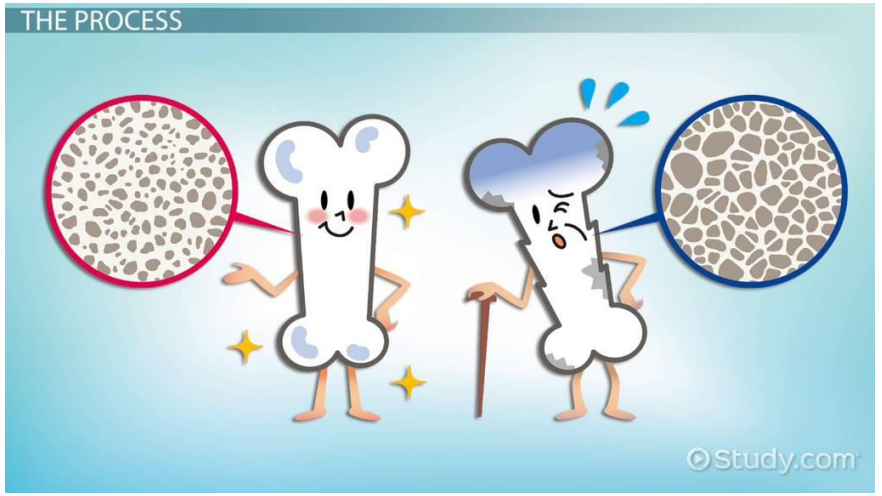
RATIONALE

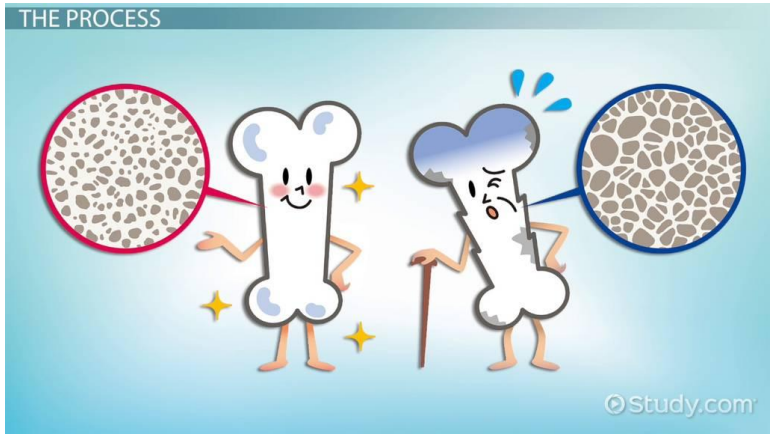
Metabolic Bone Disease (MBD) is quite common in patients affected by Chronic Intestinal failure (CIF) and it's most likely related to the underlying disease, malabsorption, or chronic inflammation[1].



1) Pironi et al. ESPEN guideline on chronic intestinal failure in adults -Update 2023. Clinical Nutrition 42(2023); 1940-2021

AIM OF THE STUDY

To assess the prevalence and severity of MBD in a cohort of CIF patients referring to a third level hospital and describe the association with the patients' characteristics.



METHODS

Retrospective cross-sectional study carried out at the the CIF Center of Sant'Orsola Hospital, IRCCS, Bologna, Italy, from 2020 until 2024.

Clinical data: age, gender, Body Mass Index (BMI), Bioelectrical impedance analysis (BIA), underlying disease, mechanisms of CIF, HPN program, blood tests. MBD assessment by DEXA.

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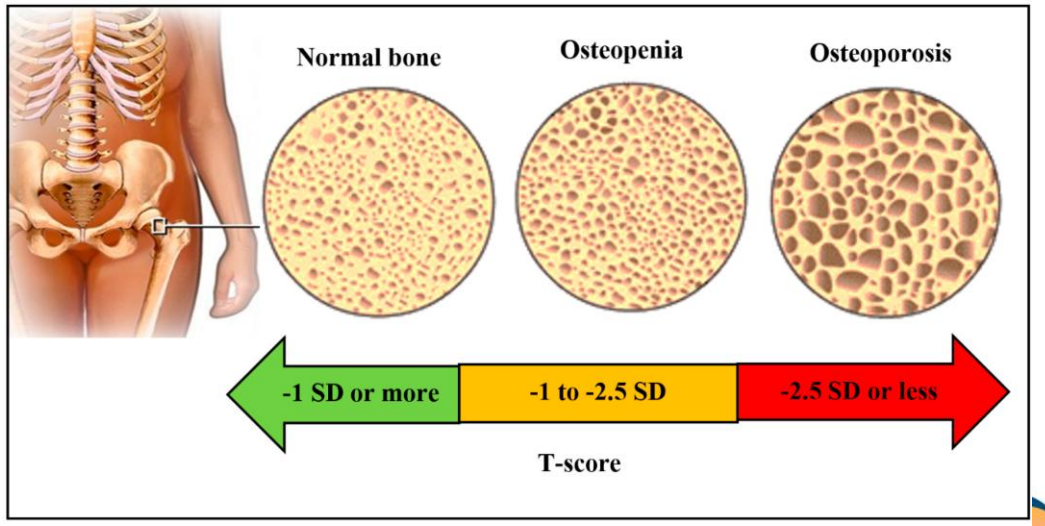
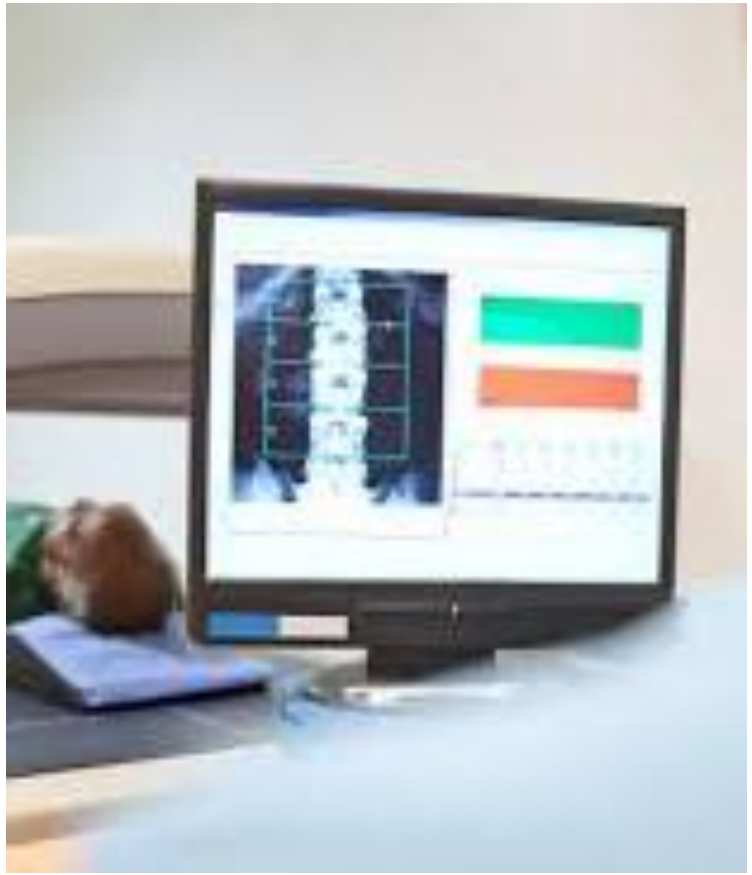
Group 1 (G1, normal): T-score > -1;
Group 2 (G2, osteopenia): -1 > T-score < -2.5;
Group 3 (G3, osteoporosis): T-score > -2.5



RESULTS - prevalence of MBD

70 patients, female 70%, Short Bowel Syndrome 58.5%. Age (years): 51(31)*, PN duration (months): 91.5(122)*

*median(IQR)



Osteopenia 31%, Osteoporosis: 55%

RESULTS – anthropometric values

BMI (kg/m2):

G1: 21(3)*

G2: 20.3(3.9)

G3: 18.9(3.8)

p=0.041

Body Cell Mass Index (kg/m2):

G1: 8.0(2.4)*

G2: 7.3(1.6)

G3: 6.6(2.9)

p=0.036

Energy by HPN (kcal/day):

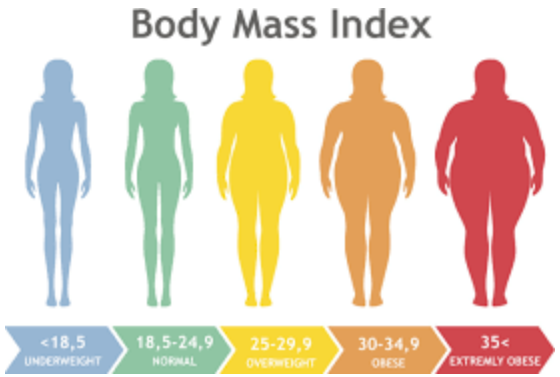
G1: 536(869)*

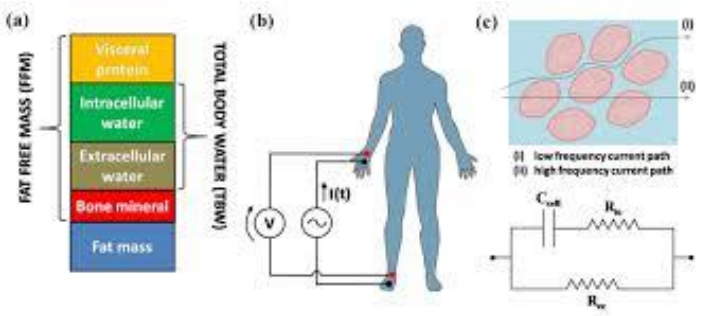
G2: 1471(588)

G3: 1086 (950)

p=0.028

*median (IQR)





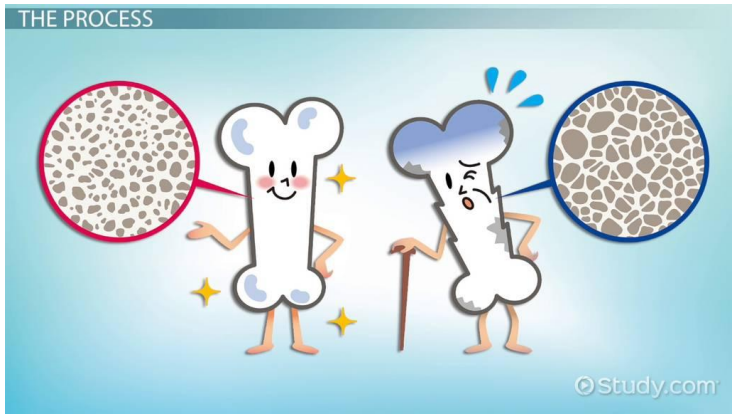
RESULTS – lab tests related to MBD

Laboratory				P	P
	G1	G2	G3		
Vitamin D (ng/mL)*	18 (13)	30 (18)	37 (21.4)	**0.090**	**0.006** G1 vs G3
PTH (pg/mL)	41 (76)	38 (61)	53 (44)	0.798	41 (76)
Osteocalcin (ng/mL)	20.9 (24.0)	20.3 (17.0)	24.6 (25.3)	0.445	
BAP (µg/L)	18.2 (5.3)	25.5 (13.4)	26.0 (18.2)	0.311	
Cross-laps (ng/mL)	0.354 (0.34)	0.310 (0.53)	0.523 (0.44)	0.239	
Calcium (mg/dL)	9.7 (0.9)	9.4 (0.4)	9.3 (0.7)	0.279	
Phosphate (mg/dL)	3.5 (1.3)	3.5 (0.6)	3.4 (0.8)	0.608	

Vit D: 25-hydroxyvitamin D; PTH: parathyroid hormone; BAP: bone alkaline phosphtase.

*median (IQR)

CONCLUSIONS



- The results confirmed the high frequency of MBD in CIF
- Serum vit. D levels should be regularly monitored to prescribe an effective supplementation
- The severity degree of MBD could be associated with the degree of malnutrition and of HPN dependency
- A good nutritional status in patients with CIF may be protective against the risk of MBD

Grazie per l’attenzione