

METABOLICALLY HEALTHY OBESITY CHARACTERIZATION AND RELATION WITH VITAMIN D

- STUDY IN A BARIATRIC SURGERY POPULATION

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INTRODUCTION

Obesity not associated with metabolic syndrome is defined as metabolically healthy obesity. The prevalence is variable - from 18 to 44%¹. Certain clinical, analytic and imagiologic features are recognised in obese patients without metabolic syndrome². However, the pathophysiology involved remains unknown. The aim of this study was to determine the prevalence and compare metabolically healthy obese with metabolically unhealthy obese in an obese population undergoing bariatric surgery, with a particular focus on vitamin D.

METHODS

Retrospective study that involved 217 patients followed at Braga Hospital, Endocrinology/General Surgery outpatient consultation from 2013-2015. Metabolically healthy obesity was defined by absence of metabolic syndrome and body mass index ≥ 30 kg/m². Metabolic syndrome was classified according to the National Cholesterol Education Program, Adult Treatment Panel (NCEP ATP III) updated version. Exclusion criteria: previous bariatric surgery, current supplementation with cholecalciferol, chronic renal disease and no clinical data available. Statistic analysis: IBM® SPSS™ Statistics version 20.

RESULTS

47,5% (n=103) METABOLICALLY HEALTHY OBESE

	TOTAL	MHO	MUHO	p
Sample, n	217	103	114	
Female, n	183	90	93	0,266
Male, n	34	13	21	0,266
Age (years), mean \pm SD	41 \pm 10	37 \pm 9	45 \pm 10	< 0,001 *
BMI (kg/m ²), median (IQR)	42,6 (6,8)	42,3 (6,9)	42,9 (6,9)	0,445

Table 1. GENERAL CHARACTERIZATION

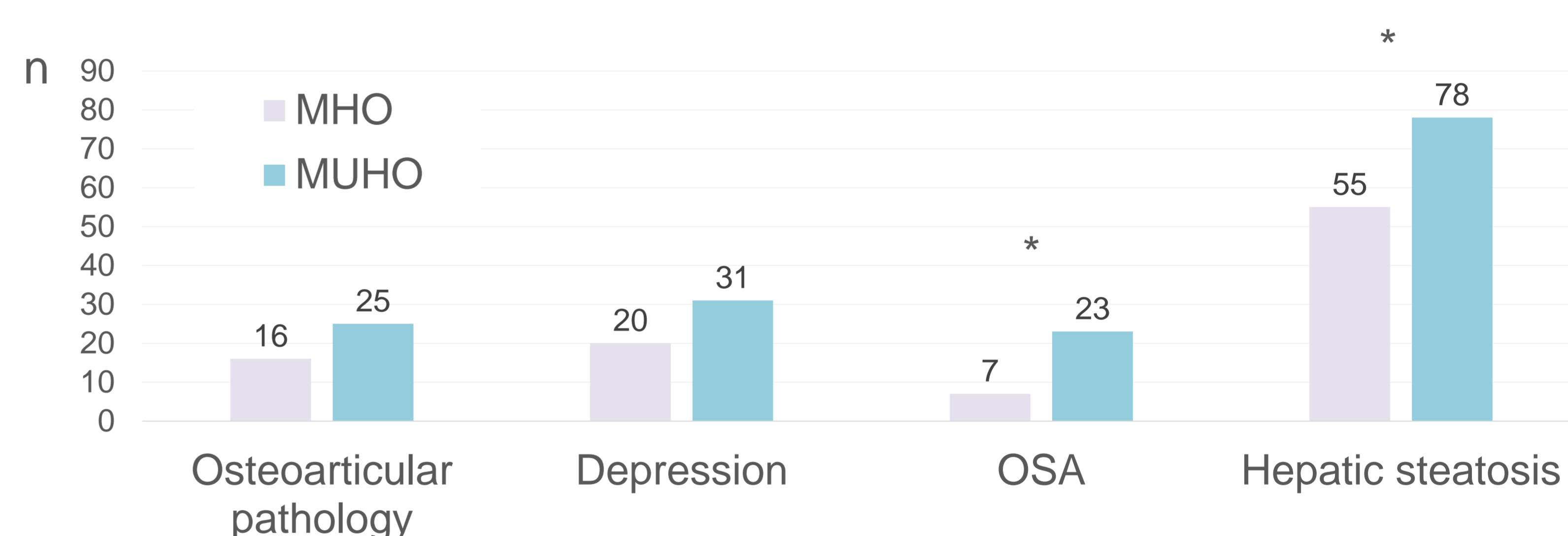
	MHO	MUHO	p
25(OH)D (ng/ml)	14	12	0,023 *
Calcium (mg/dL)	9,1	9,2	0,244
Phosphorus (mg/dL)	3,4	3,4	0,356
Magnesium (mg/L)	19	18	0,043 *
Albumine (g/dL)	3,9	3,9	0,763

Table 2. BIOCHEMICAL STUDY

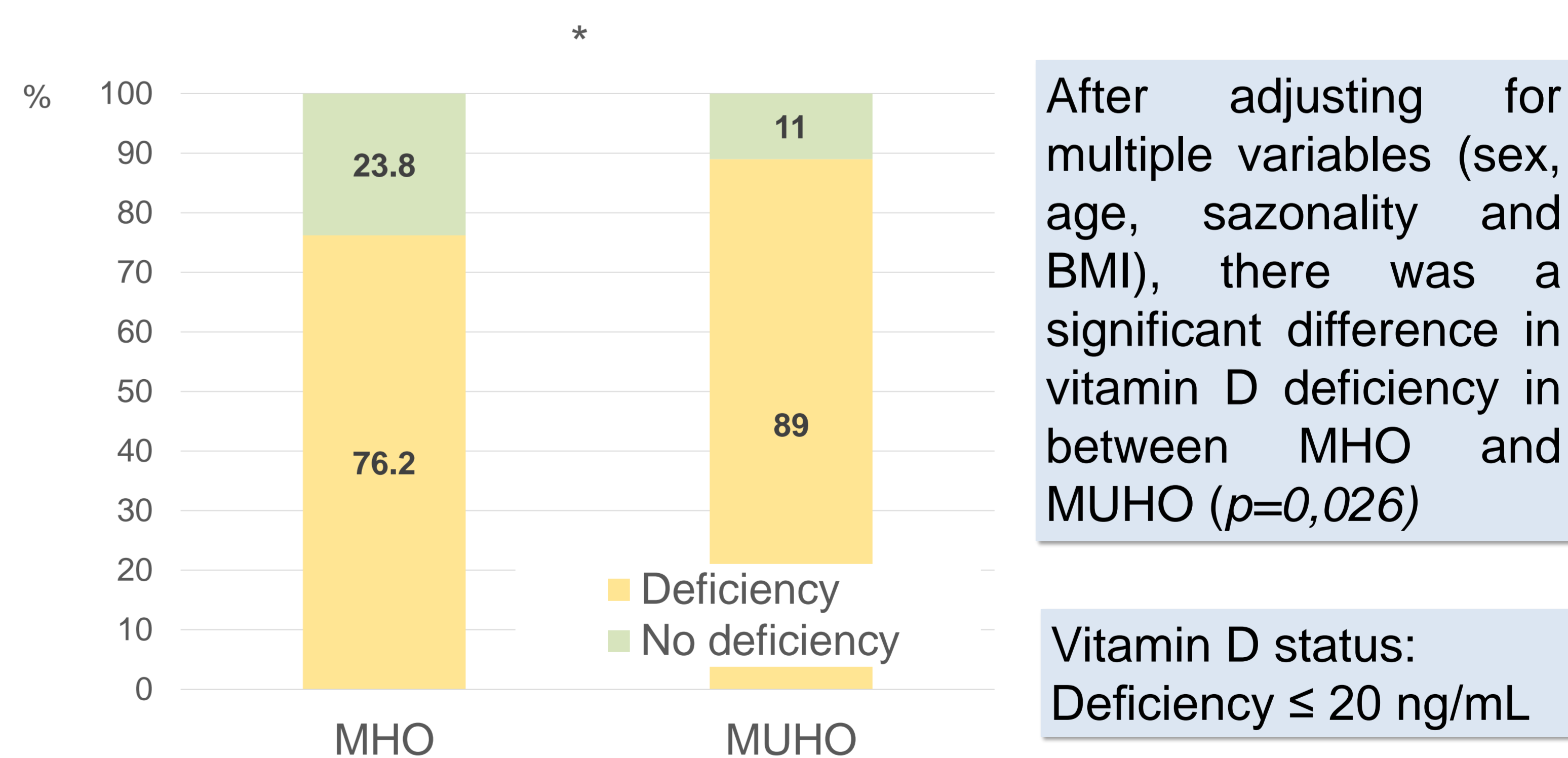
HOMA-IR was superior in the MUHO group (p<0,001)

Legend:
MHO – Metabolically healthy obesity. MUHO – Metabolically unhealthy obesity.
OSA – Obstructive Sleep Apnea

p significance level of 0.05. Marked with * if statistically significant



Graphic 1. COMORBIDITIES



Graphic 2. VITAMIN D STATUS

DISCUSSION

Facing literature data, our study showed a superior frequency of MHO. Patients with MHO were in average 8 years younger, which may corroborate the theory of MHO as a transitory phenotype. Vitamin D deficiency was predominant in both groups. Nevertheless, we found differences in between MHO and MUHO concerning vitamin D status. These findings suggest that vitamin D may be relevant in metabolically healthy obesity.