

BONE MASS AND BODY COMPOSITION IN COPD PATIENTS

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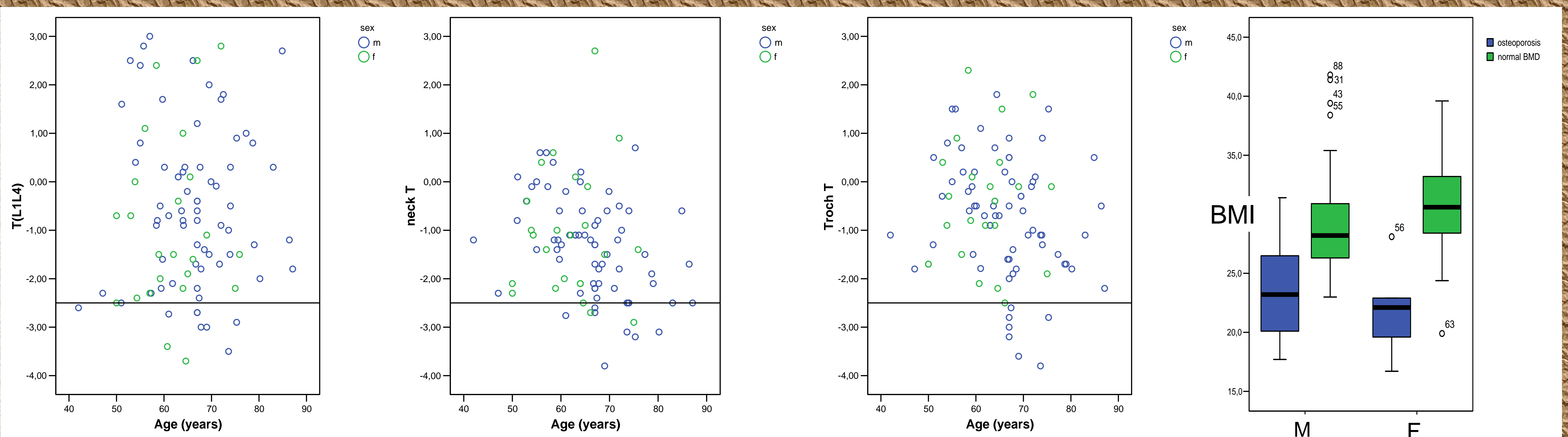
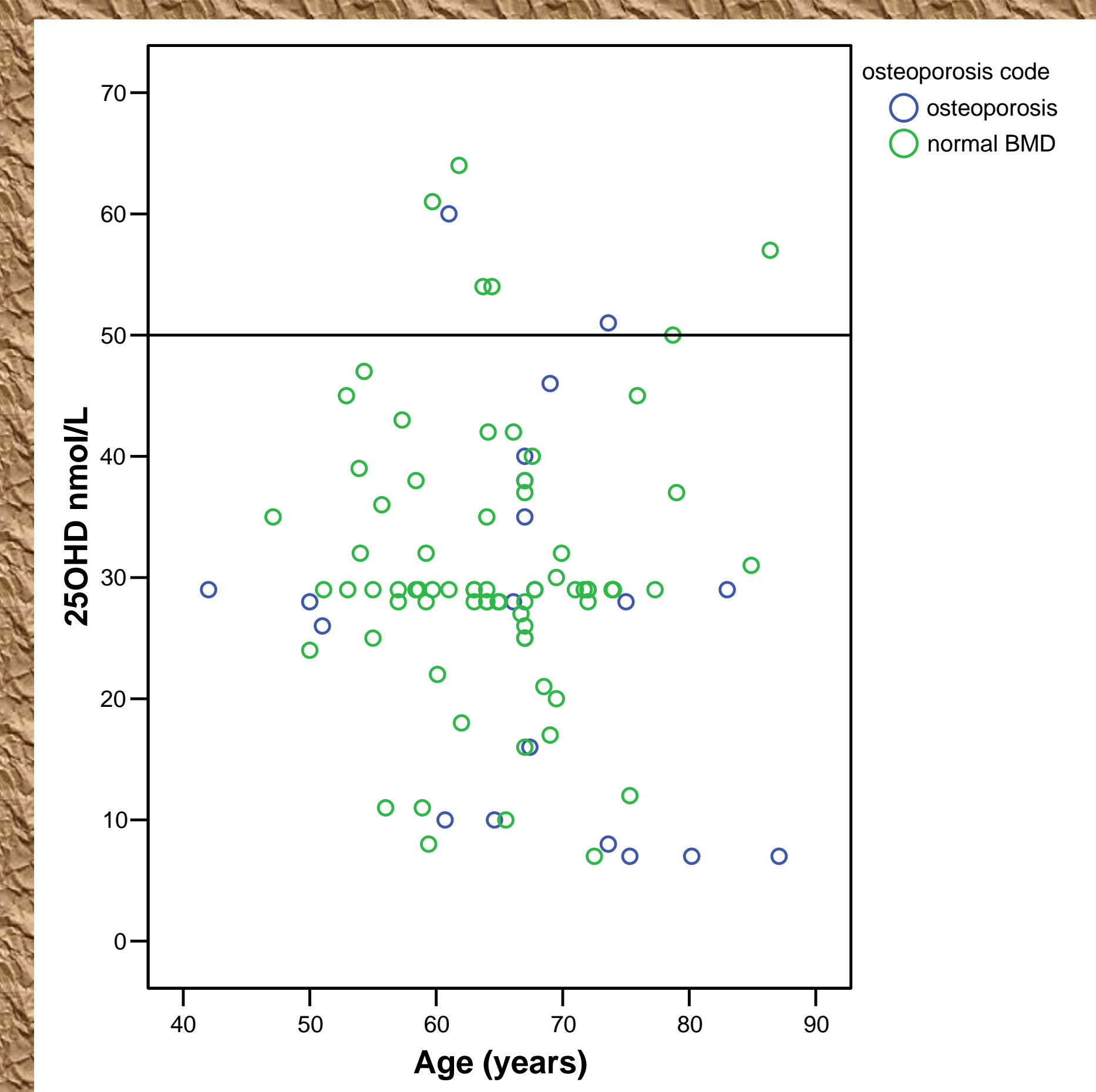
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IS A MULTISYSTEMIC DISORDER. AFFECTING ALSO THE MUSCULOSKELETAL SYSTEM AND BODY COMPOSITION.

WE INVESTIGATED IN A GROUP OF 93 COPD PATIENTS (69 MEN. AGE 66.3+/-9.0 YEARS; 24 WOMEN. AGE 61.9+/-7.2 YEARS) ASSOCIATIONS OF BONE MINERAL DENSITY (BMD). BODY COMPOSITION (BMI – BODY MASS INDEX. FMI - FAT MASS INDEX. FFMI - FAT-FREE MASS INDEX). SEVERITY OF COPD (GOLD CLASSIFICATION) AND VITAMIN D STATUS. STANDARD CLINICAL (DEXA) AND LABORATORY METHODS WERE USED.

RESULTS - OSTEOPOROSIS WAS FOUND ON AT LEAST ONE MEASURED SITE (LUMBAR SPINE. FEMORAL NECK OR TROCHANTER) IN 23% MALE AND 21% FEMALE PATIENTS. PATIENT GROUPS WITH OSTEOPOROSIS OR NORMAL BMD DID NOT DIFFER REGARDING COPD SEVERITY. 25-OH D CONCENTRATIONS OR AGE. OSTEOPOROSIS IN BOTH SEXES WAS ASSOCIATED WITH SIGNIFICANTLY LOWER BMI (P<0.001) AND FMI (P<0.002). AND IN MEN WITH LOWER FFMI (P<0.003). BMI WAS ON AVERAGE NORMAL IN PATIENTS WITH OSTEOPOROSIS AND INCREASED IN PATIENTS WITH NORMAL BMD IN BOTH SEXES. PATIENTS OF BOTH SEXES WITH NORMAL BMD HAD INCREASED FMI. MALE OSTEOPOROSIS PATIENTS HAD NORMAL OR INCREASED FMI AND FEMALE OSTEOPOROSIS PATIENTS HAD NORMAL FMI. FFMI WAS INCREASED IN ALL MALE PATIENTS. IN WOMEN WITH OSTEOPOROSIS FFMI WAS MOSTLY DECREASED AND IN THOSE WITH NORMAL BMD WAS NORMAL OR DECREASED. ALL FEMALE PATIENTS HAD HYPOVITAMINOSIS D (<50 NMOL/L). HYPOVITAMINOSIS D WAS FOUND IN MOST MALE PATIENTS; IN 14/16 PATIENTS WITH OSTEOPOROSIS AND IN 47/53 PATIENTS WITH NORMAL BMD.

MEN	AGE	BMI	FMI	FFMI	25-OH D	L1-L4 (BMD)	T-score (L1L4)	FEMORAL NECK BMD	FEMORAL NECK T-score	FEMUR TROCHANTER BMD	FEMUR TROCHANTER T-score
N	69	69	69	69	69	69	69	68	69	68	69
Median	67.0	27.15	8.46	18.14	29.00	1.127	-0.700	.0899	-1.300	0.858	-0.600
Minimum	42	17.7	2.04	14.24	7	.791	-3.50	.582	-3.80	.508	-3.80
Maximum	87	41.8	23.02	23.74	64	1.583	3.00	1.200	.70	1.123	1.80

WOMEN	AGE	BMI	FMI	FFMI	25-OH D	L1-L4 (BMD)	T-score (L1L4)	FEMORAL NECK BMD	FEMORAL NECK T-score	FEMUR TROCHANTER BMD	FEMUR TROCHANTER T-score
N	24	24	24	24	24	24	24	24	24	23	23
Median	62.50	29.68	13.820	15.27	28.00	0.999	-1.500	0.815	-1.250	0.750	-0.400
Minimum	50	16.7	3.08	12.39	10	.738	-3.70	.635	-2.90	.511	-2.50
Maximum	76	39.6	21.29	18.79	47	1.520	2.80	1.090	2.70	1.038	2.30



CONCLUSION. OSTEOPOROSIS WAS OBSERVED IN MORE THAN 20% OF COPD PATIENTS AND HYPOVITAMINOSIS D IN MOST PATIENTS. IN MALE COPD PATIENTS WITH OSTEOPOROSIS MUSCLE MASS WAS PRESERVED AND FATTY TISSUE NORMAL OR INCREASED. IN FEMALE COPD PATIENTS WITH OSTEOPOROSIS BOTH MUSCLE MASS AND FATTY TISSUE WERE DECREASED.