SINPE
Società Italiana di Nutrizione Artificiale e Metabolismo

SINPE 2022 Riunione Monotematica
Cancer & Malnutrition

SARCOPENIA IN MEN WITH PROSTATE CANCER TREATED WITH ANDROGEN DEPRIVATION THERAPY: EFFECTS OF DENOSUMAB

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Background

In men with prostate cancer androgen deprivation therapy (ADT) causes sarcopenia and bone loss. Denosumab, an osteoclast inhibitor used to prevent ADT-induced osteoporosis has independent effects on muscle mass and function.

Aims

To evaluate the prevalence of sarcopenia, low muscle mass and strength in a cohort of men with prostate cancer at baseline (T0) and after 3 (T1) and 6 (T2) months of ADT. The effect of denosumab was also analyzed.

Methods

Body composition was evaluated by bioimpedence analysis. Muscle strength was measured using dynamometry. Sarcopenia was defined if handgrip strength (HGS) <27 kg and appendicular skeletal muscle index/height (ASM/h2) <7 kg/m2.

Results

24 patients (75,4±0,4 yrs, BMI: 25,3±0,2 kg/m2) were recruited. ADT and vitamin D supplementation were started in all patients at T0, while denosumab was initiated randomly after DEXA. The prevalence of sarcopenia was 12,5% at T0, 15% at T1 and 16.7% at T2. Between T0 and T2, a strong reduction of ASM/h2 was detected in the whole cohort, while HGS didn't change. Considering those treated with denosumab (D+), at T2 conserved HGS was demonstrated (28,8 vs 31,9 kg, Δ +2,4 kg), unlike those who had not yet received it (D-) (HGS: 32,9 vs 31,4, Δ -1,5 kg; D+ vs D-: p=0,02). In contrast, no differences in ASM/h2 between subgroups were demonstrated.

Conclusions

ADT causes early changes in muscle, with rapid loss of mass while function is less compromised. Despite the small sample size, a beneficial effect of denosumab on muscle strength is demonstrated by these findings.