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ASSESSMENT OF BONE MINERAL DENSITY IN YOUNG WOMEN WITH ANOREXIA NERVOSA BY MEANS OF RADIOFREQUENCY ECHOGRAPHIC MULTISPECTROMETRY (REMS) TECHNOLOGY

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Objective: Bone loss and increase risk of fragility fracture are common complication of anorexia nervosa (AN). BMD by DXA present several limits in subjects with AN. Recently, an innovative echographic approach for osteoporosis diagnosis, defined as REMS, has been introduced and clinically validated. This study aimed to evaluate the usefulness of the new REMS technique in the assessment of bone status in young women with AN.

Methods: In 50 subjects with restrictive AN and 30 healthy age-matched controls we measured BMD at the lumbar spine (LS-BMD), at femoral neck (FN-BMD) and total hip (TH-BMD) using a DXA device; In all women, an echographic scan of the same anatomical sites was performed with the REMS technique.

Results: BMD evaluated by DXA and REMS technique were all significantly ($p<0.01$) lower at all sites in subjects suffering from AN subjects than in controls. Good correlations were detected between BMD by DXA and BMD by REMS measurements at LS ($r=0.64$, $p<0.01$) at FN ($r=0.86$, $p<0.01$) and at TH ($r=0.84$, $p<0.01$) in subjects suffering from AN. This good agreement between the two techniques were confirmed also by Bland-Altman analysis. Moreover, the subjects suffering from AN with previous vertebral fragility fractures presented lower values of both BMD-LS and BMD-TH by DXA and by REMS with respect to those without fractures; however, the difference was significant only for BMD-TH by REMS ($p<0.05$).

Conclusion: Our preliminary study suggest that REMS technique due to its characteristic of precision and reproducibility may represent an important tool for the evaluation of the BMD in AN young women, especially during the fertile age.