

Abstract of an oral presentation at ECO2011 Istanbul May 2011

Christensen P, Bartels EM, Riecke BF, Bliddal H, Leeds AR, Astrup A, Winther K, Christensen R. A Weight loss formula diet improved vitamin d status in obese, older individuals: a cohort study exploring safety in a randomised controlled trial. Obesity Reviews 2011; 12 (Suppl 1) 59-60 (T5:OS3.4)

Introduction: Poor micronutrient status may be found in obese subjects. Vitamin D deficiency is associated with secondary hyperparathyroidism and bone loss. Weight loss has been seen to affect bone mineralisation negatively.

Methods: In a prospective cohort study in obese (BMI>30) older (age>50 years) individuals following an intensive weight loss program, plasma vitamin D, P-parathyreoidea hormone (PTH), bone mineral content (BMC) and bone mineral density (BMD) were measured. Participants followed an 8 week all-provided Cambridge formula very low-energy or low-energy diet followed by an 8 weeks 1200 kcal/day program with normal food including 2 Cambridge Diet formula products a day. Statistical analyses were based on paired sample t-tests.

Results: 175 participants (142 women) completed the follow-up (w16). Mean age was 63 years (SD: 6). At baseline mean values were: weight 102.4 kg (14.5), BMI 37.1 (4.4), vitamin D 48.9 nmol/L (20.1), PTH 6.35 pmol/L (2.2), BMC 2780.7 g (462.5) and BMD 1.20 g/m² (0.09). At week 16 the participants had lost a mean of 14.0 kg (95%CI: -14.7to-13.3; P<0.0001). Vitamin D increased by 15.3 nmol/L (95%CI: 13.2to17.3; P<0.0001) and PTH decreased with 0.87 pmol/L (95% CI:-1.12 to -0.62; P<0.0001). BMC was unchanged (P=0.18) whereas BMD increased statistically significant with 0.004 g/cm² (P=0.025).

Conclusion: Although intensive weight loss and formula diets have been suspected to have a negative impact on bone status, this formula diet improved vitamin D status and induced a drop in PTH levels towards normal. Bone mineral content was unchanged.

1. Conflict of Interest: A. R. Leeds is employed as medical director of the Cambridge Manufacturing Company [Cambridge Weight Plan[®]]. Pia Christensen, Henning Bliddal, Birgit Falk Riecke, Robin Christensen and Arne Astrup received travel grants to attend scientific meetings from the Cambridge Manufacturing Company.

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