ISGE
GYNECOLOGICAL ENDOCRINOLOGY
THE 18TH WORLD CONGRESS
7-10 MARCH 2018 FLORENCE, ITALY

Prevention of osteoporosis in anorexia nervosa: what is new?

M Birkhaeuser (CH) [1]

AN is a condition of severe low weight that is associated with low bone mass, impaired bone structure, and reduced bone strength contributing to increased osteopenia and fracture risk. Adolescents with AN have decreased rates of bone accrual compared with normal-weight controls. They risk to start adult life with a suboptimal peak bone mass.

Weight gain and menstrual recovery are critical for improving bone health in AN. Weight restoration is essential for restoration of normal endocrine function; however, residual deficits may persist, such as hypercortisolemia, high peptide YY levels, and ghrelin dynamics which may not completely normalize. As well, hypogonadotropic hypogonadism and menstrual irregularities may persist in some patients.

It has to be stressed that oral oestrogen–progesterone combinations are not effective in increasing bone density in adults or adolescents with AN. Physiological transdermal testosterone replacement does increase bone accrual rates in adolescents with AN to approximate that in normal-weight controls, leading to a maintenance of bone density Z-scores. Transdermal oestradiol has to be combined with cyclic progesterone. However, oestrogen replacement alone cannot prevent progressive osteopenia in young women with AN.

Hypovitaminosis D may counteract the efficacy of refeeding in AN through increased bone resorption mediated by secondary hyperparathyroidism, which strongly supports the use of vitamin D supplements for bone health in AN.

In contrast to adolescents, transdermal oestradiol is not effective in increasing bone density in adult women with AN while bisphosphonates can be used to improve BMD in adults: risedronate has been shown to increase bone density at the spine and hip in adult women with AN. Because of their long half-life and potential for teratogenicity, bisphosphonates should not be used in women of reproductive age. In young potentially fertile women bisphosphonates should be considered only in patients with low bone density and clinically significant fractures when non-pharmacological therapies for weight gain are ineffective.

Recombinant human IGF-1, Leptin, Vitamin K2, Testosterone, DHEA and teriparatide have been used in a few studies as bone anabolic therapies. Further studies are necessary to determine the best therapeutic strategies for low bone density in AN.

[1] University of Berne, Switzerland, Basel