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Salivary adiponectin levels are associated with training intensity but not with bone mass or reproductive function in elite Rhythmic Gymnasts[☆]



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Elite Rhythmic Gymnasts (RGs) constitute a unique metabolic model and they are prone to developing Anorexia Athletica. The aim of the present study was to evaluate the effect of training intensity on salivary adiponectin levels and assess a possible role of salivary adiponectin levels as a predictive factor of reproductive dysfunction and bone mass acquisition in elite RGs. The study included 80 elite female RGs participating in the World Rhythmic Gymnastics Championship tournament held in Montpellier, France on September 2011. Anthropometric values were assessed, training data and menstrual pattern were recorded, bone mass was measured with Broadband ultrasound attenuation (dB/Mhz) and baseline salivary adiponectin levels were determined. The athletes were classified as intensely and very intensely trained, considering the mean training intensity (40.84 h/week). Moreover, considering their reproductive status, they were divided into RG's with normal menstruation, primary amenorrhea and oligomenorrhea. All comparisons were adjusted to age, BMI and body fat percentage differences. Very intensely trained RGs showed higher salivary adiponectin levels ($p=0.05$). Moreover, salivary adiponectin levels showed significant correlation with training intensity ($r=0.409$, $p=0.003$). On the other hand, no association of salivary adiponectin levels was documented with either reproductive function or bone mass acquisition. The results of the present study suggest that, in elite RGs, salivary adiponectin levels are associated with the intensity of training, possibly reflecting the deterioration of energy balance rather than the training stress. On the other hand, a predictive role of salivary adiponectin levels in reproductive dysfunction or bone mass acquisition could not be supported.

Expensive therapies in children: benefit versus cost of combined treatment of recombinant human growth hormone and gonadotropin-releasing hormone analogue in girls with poor height potential

Abstract

Objective: The combination therapy of gonadotropin-releasing hormone analogues (GnRHa) and recombinant human growth hormone (rhGH) has been used to increase growth in children with premature sexual maturation and attenuated growth. The aim of this report was to study the benefit over cost of combined treatment in girls with central precocious puberty (CPP) and poor height prognosis and in girls with idiopathic short stature (ISS) and early puberty. Should this expensive treatment be given to such patients?

Subjects and methods: Two patient groups were included: five girls with central precocious puberty (CPP) who reached final height (FH) at 16.3 ± 1.2 years and eight girls with ISS who reached FH at 14.7 ± 0.8 years. Patients were treated for 3.5 ± 0.6 years.

Results: In both groups, FH improved significantly; in CPP from -1.3 to -0.5 standard deviation score (SDS) ($p=0.030$) and in ISS from -2.6 to -1.7 SDS ($p=0.012$). Only girls with CPP reached their target height (-0.5 vs. -0.6 SDS) ($p=0.500$).

Conclusions: Both groups had a total height gain of 5 cm. Each centimetre cost about €2700 per patient. This treatment should be considered only in patients with extremely low height prediction and very early pubertal onset.