

The IGF-I Response to Growth Hormone Is Related to Body Mass Index in Short Children with Normal Weight

Roman, Rossana

Iniguez, German

Lammoglia, Juan Javier

Avila, Alejandra

Salazar, Teresa

Cassorla, Fernando

Aim: We investigated whether the insulin-like growth factor (IGF)-I response to growth hormone (GH) is regulated by body mass index (BMI) in short children with normal weight. **Methods:** We studied 37 prepubertal children with idiopathic short stature (ISS), comparing children with high-normal BMI (standard deviation scores, SDS 1.23 ± 0.11 , $n = 20$) and low-normal BMI (SDS -0.93 ± 0.12 , $n = 17$). The IGF-I response to GH was determined with an abbreviated IGF-I generation test, by measuring serum IGF-I concentrations at baseline and 24 h after the administration of GH (0.033 mg/kg). **Results:** Children with high- and low-normal BMI had similar age (8.5 ± 0.7 vs. 8.7 ± 0.7 years) and height (-2.0 ± 0.1 vs. -2.2 ± 0.2 SDS). However, children with high-normal BMI exhibited higher mean basal IGF-I (191 ± 15 vs. 139 ± 11 ng/ml, $p < 0.05$), higher mean IGF-I levels 24 h after GH administration (261 ± 22 vs. 164 ± 14 ng/ml, $p < 0.05$) and a higher IGF-I percent increase after GH administration (37 ± 5