

Comparative analysis of clinical, biochemical and genetic aspects associated with bone mineral density in small for gestational age children

Silvano, Liliana

Miras, Mirta

Pérez, Adriana

Picotto, Gabriela

De Barboza, Gabriela Díaz

Muñoz, Liliana

Martin, Silvia

Sobrero, Gabriela

Armellini, Pedro

Mericq, Verónica

De Talamoni, Nori Tolosa

Clinical, biochemical and genetic analysis related to bone mineral density (BMD) were carried out in children born small for gestational age (SGA) that failed to achieve postnatal catch-up growth (CUG), SGA children that completed CUG and adequate for gestational age (AGA) children. Serum IGF-I, IGF-II, IGF binding protein-3 and acid-labile subunit were lower in the SGA-CUG children as compared with the other groups. Frequencies of polymorphic variants of vitamin D receptor, estrogen receptor and collagen genes were similar among groups. The genotype 194-192 of the IGF-I gene was higher in the SGA-CUG and 196-192 was higher in the SGA+CUG group. In the SGA-CUG group, the genotype SS of the COLIA1 gene was associated with lower BMD. Therefore, IGF system and COLIA1 polymorphism distinguish prepubertal SGA-CUG children from the SGA+CUG children of the same age. Furthermore, COLIA1 polymorphism could be useful to predict osteopenia in SGA-CUG children. © 2011 by Walter de Gruyter Berlin B