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Serum leptin level as a marker of bone metabolism in pre-term babies

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Many hormonal changes can be observed in hormonal environment after birth. These changes lead to an increase in endosteal bone resorption. The adaptation process in preterm infants is different, and depends on the maturity. Thus, two mainstream hypotheses for the role of leptin on bone have emerged: (i) direct regulation through increased osteoblast proliferation and differentiation and (ii) indirect suppression of bone formation through a hypothalamic relay. At the present time, it remains unclear whether these effects are relevant in only extreme circumstances (i.e. models with complete deficiency) or play an important homeostatic role in the regulation of peak bone acquisition and skeletal remodeling. The leptin acts primarily through peripheral pathways and increases osteoblast numbers and activity. Leptin plays an important role in the regulation of bone metabolism. It directly influences osteoblast proliferation and differentiation. Indirectly, leptin affects bone formation through a hypothalamic relay. The leptin level in the cord blood of preterm newborns is significantly lower than the leptin level in the cord blood of term delivered newborns. However, leptin levels in the cord blood in newborns delivered between 32+0 and 36+6 weeks of gestation do not significantly influence the lumbar spine BMD at 2 years of age.

Biography

Petra Kaniokova Vesela has completed her medical studies from Charles University and is working at Pediatric Department. She is a PhD student at Charles University. She has published 4 papers in reputed journals.

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