conferenceseries.com

23rd Annual Congress on

Pediatrics & Neonatology

November 05-06, 2018 Bangkok, Thailand





Maulana Azad Medical College, India

Growth faltering: Role of insulin like growth factors

rowth is a sensitive indicator of a child's health, nutritional state and genetic background. Growth of a child is not only Gontrolled by hormones but by many other factors like nutrition and chronic systemic illnesses like hypothyroidism, chronic liver disease, diabetes mellitus, malabsorption, etc. Principal hormones influencing growth are Growth Hormone (GH), thyroid hormones, adrenal androgens, sex steroids, glucocorticoids, vitamin D, leptin and insulin. Growth hormone promotes longitudinal bone growth. GH mediates its effects on target tissues via stimulation of hepatic Insulin like Growth Factor (IGF-1) production. IGF-1 is a single chain polypeptide hormone with structural homology to proinsulin, produced from liver. IGF-1 is at least in part GH dependent and mediates many of the anabolic and mitogenic actions of GH. Alternative hypothesis is the dual effector theory, which is based on the premise that growth is a result of the differentiation of precursor cells, followed by clonal expansion. GH directly promotes the differentiation of cells and the development of IGF-1 responsiveness. Clonal expansion of these differentiated cells is mediated by local production of IGF-1 in response to GH. IGF-1 appears to be critical for fetal and postnatal growth. Levels of IGF-1 are inversely related to Body Mass Index (BMI). Inadequate calorie intake and/or protein intake is by far the most common cause of growth failure. Protein energy malnutrition is frequently characterized by elevated basal serum GH concentration. In generalized malnutrition i.e. marasmus, GH levels may be near normal or even lower. In both the conditions, serum IGF-1 concentrations are typically low. Malnutrition is a form of GH Insufficiency (GHI) in which serum IGF-1 concentrations are reduced in presence of normal or elevated GH levels. Elevated GH levels represent an adaptive response whereby protein is spared by the lipolytic and anti-insulin actions of GH. Reduced serum IGF-1 concentration is a mechanism by which precious calories are shifted from use in growth to survival requirements. Rare causes of IGF-1 deficiency leading to severe growth failure are hypothalamic dysfunction, pituitary GH deficiency and primary or secondary GHI. Hence these patients with growth failure are evaluated by careful auxologic assessment and appropriate measures of GH-IGF axis. Establishment of deficiency of IGF-1 and IGFBP-1, IGFBP-3 then necessitates a thorough evaluation of hypothalamic-pituitary-IGF function. Hence along with all other factors regulating growth, insulin like growth factors has a crucial role in growth attenuation.

Biography

Sangita Yadav is the Head of the Department of Pediatrics, Maulana Azad Medical College, a premier institute of University of Delhi. She has more than 35 years of teaching experience. She is also the Head of Department and a recognized PhD Supervisor. She is currently the Joint Secretary Liaison of Indian Academy of Pediatrics. Chair Person of Adolescent Health Academy of IAP. Her area of interest is pediatric and adolescent endocrinology. She was awarded WHO Fellowship for training in USA. She is one of the Founder Member of Indian Society of Pediatric and Adolescent Endocrinology. Her interest is in adolescent health. She is the Founder Member of Adolescent chapter in 2000 and its task force. She has published more than 100 papers/articles in books and journals. She is an active and enthusiastic Member of Indian Academy of Pediatrics.

sangtri35y@hotmail.com