Growth and Metabolic Abnormalities in Children Born Small for Gestational Age

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Small for gestational age (SGA) refers to a group of infants with birth weight and/or length is less than the 10^{th} percentile of the population and the reported incidence was around 6.61% in China, with a multi-factorial etiology. A number of genomic imprinted disorders were associated with SGA, including Prader Willi syndrome, Angelman syndrome and Silver Russell syndrome with characteristic clinical and molecular features. Most SGA infants will develop catch-up in growth, normalizing their height by the age of 2 and achieving a final height within normal range. About 10% of SGA failed to achieve catch-up growth, resulting in childhood and adult height -2SD below the mean. Aside from acute perinatal adverse events, the children born SGA often manifest with long-term metabolic and endocrine consequences including insulin resistance, metabolic syndrome and social neuro-developmental problems. Recombinant human growth hormone (rhGH) was approved as an indication for short SGA by the FDA, EMEM and other authorities at 2 to 4 years of age, and was recommended by consensus guidelines from pediatric endocrine societies. Current data suggest that rhGH treatment can safely improve height and HRQoL in children born SGA. Whether the rhGH treatment should be started at or before the first year of age is under debate.