Letter to the Editor
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Letter to the Editor for manuscript entitled Extreme Premature Small for Gestational Age Infants Have Appropriate Catch-up Growth at Term Equivalence Compared with Extreme Premature Appropriate for Gestational Age Infants

Short Title: Nutritional Thrift

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To the Editor,
Extremely premature small for gestational age (SGA) children are more prone to medical conditions such as insulin resistance, type 2 diabetes mellitus, precocious puberty, polycystic ovarian syndrome, hypertension, hyperlipidemia and cardiovascular disease (1-4). There is balance between prenatal and postnatal weight gain in life. This balance allows to store fat safely in subcutaneous adipose tissue. SGA children may have greater risk of endocrine and metabolic problems, if there is mismatch between prenatal and postnatal weight gain (1-4).
Small for gestational age fetuses can make metabolic organization for surviving, if they do not take enough blood supply from placenta (1-3). These fetuses can tend to be economizer because of lack of enough blood supply from placenta (1-3). They constitutively send blood supply to brain for maintaining their life, while their bodies receive inadequate blood supply. Furthermore, their pancreases, livers, kidneys and other organs receive inadequate blood supply in prenatal period (1-3). Pancreatic beta cells can not tolerate more energy intake in later life, if there is mismatch between prenatal and postnatal weight gain and decreased insulin sensitivity may occur (1-4). This mismatch is also associated with central adiposity in later life. They are also susceptible of precocious puberty, polycystic ovarian syndrome, hypertension, hyperlipidemia (1-4). They tend to have lower risk of insulin resistance and cardiovascular disease, as long as these children may have restricted food supply in later life as prenatal period (1-4). Ng et al reported that extremely premature SGA infants achieved catch up growth with postnatal nutrition (5), but they tend to have greater risk of insulin resistance, type 2 diabetes, polycystic ovarian syndrome, hypertension, hyperlipidemia and coronary artery disease because of nutritional thrift.
Catch-up growth is important for reaching higher adult height in extremely premature SGA infants, but nutritional thrift should be considered for insulin resistance, type 2 diabetes mellitus, polycystic ovarian syndrome, hypertension, hyperlipidemia and cardiovascular disease. Mismatch between prenatal and postnatal weight gain may cause more serious medical disorders than short stature. Nutritional balance should be provided for mitigating the risk of metabolic and endocrine disorders.
Keywords: Nutritional thrift, Small gestational age, Postnatal weight gain
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