Global Prevalence of Small for Gestational Age Births

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Fetal growth restriction is found both in babies who are preterm or full-term, and in either case it has important adverse effects on subsequent survival, health, growth and development [1]. The assessment of the adequacy of fetal growth requires knowledge of the gestational age of the newborn, usually by documentation of the last menstrual period or ideally fetal ultrasound examination early in pregnancy. Thus, fetal growth restriction is assessed in regard to achievement of the expected weight for a given gestational age. Being small for gestational age (SGA) is usually defined as having a birthweight below the 10th percentile for gestational age compared to an appropriate reference population. Some of these babies will be small at birth because they are constitutionally small, but for many the fetal growth restriction is due to maternal nutritional deficiencies, infections during pregnancy, abnormal placental function or fetal malformations. Newborns who are at the expected weight whether preterm, at or after 37 weeks are referred to as appropriate for gestational age. Newborns who are lower than the expected weight whether preterm or full term are referred to as SGA. Low birthweight (LBW) referring simply to being <2,500 g at birth includes some newborns who are preterm, some who are SGA and some who are both, with the relative proportions in populations varying by setting and other factors. The designation of LBW does not include newborns who weigh 2,500 g or more, but are SGA.

In the last 2 years, a set of analyses has focused on prevalence of fetal growth restriction and its consequences. These analyses have been published in research papers [2–4] and as part of a series of papers on maternal and child nutrition published in The Lancet in mid-2013 [1, 2]. Detailed methods are published in these papers. Briefly, SGA was defined as birthweight below the tenth percentile of a reference population for a given gestational age and sex. The reference used for these analyses included more than 3 million nationally representative, multiethnic births in the United States in 1991 [5]. Preterm birth was considered to be delivery at less than 37 weeks.
These estimates indicate that in 2010 32.4 million babies were born SGA, 27% of all births in low- and middle-income countries (LMICs) [3]. About 20% of the preterm births in these countries were also SGA. Figure 1 shows the estimated national prevalence of SGA births in LMICs in 2010. The highest prevalences were in South Asia and the Sahelian countries of Africa. India has not only the largest number of SGA births of any country, 12.8 million (uncertainty range 11.5–14.3 million), but also an extremely high proportion of all births in India are SGA (46.9%).

As shown in figure 2, the prevalence of SGA, including both term and preterm births, is approximately double the prevalence of LBW in all the world regions. SGA is largely in babies born at term with only a small proportion of babies being both preterm and SGA.

SGA has both short-term consequences for survival and linear growth (i.e. stunting) and long-term adverse effects on cognitive and psychosocial development, adult stature and risk of adult metabolic diseases. Thus, SGA is an important global problem, and an even more critical one for countries in South Asia and some countries in Africa. Success in reducing neonatal and child mortality and stunted linear growth in these countries may depend on addressing the problem of fetal growth restriction. Improved diets for pregnant women, as well as specific interventions, such as targeted balanced protein energy supplementation and multiple micronutrient supplementation in pregnancy, which are proven to reduce SGA, should be implemented in ways to achieve high coverage in pregnant women who can benefit. Additional nutritional interventions,

Fig. 1. Estimated prevalence of SGA births in 138 LMICs. Reprinted from Lee et al. [3] with permission from Elsevier.
e.g. in adolescence and before conception, should be evaluated and implemented if effective. Control of maternal infections may also reduce fetal growth restriction.

References