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Home > Vol 96, No 3 > [Jariyapitaksakul](#)

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The Occurrence of Small for Gestational Age Infants and Perinatal and Maternal Outcomes in Normal and Poor Maternal Weight Gain Singleton Pregnancies

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Abstract

Objective: To assess the occurrence of small for gestational age (SGA) infants and perinatal and maternal outcomes in singleton pregnancies with normal and poor maternal weight gain.

Material and Method: Pregnant women with normal pre-pregnancy body mass index (BMI) and attending the antenatal clinic at King Chulalongkorn Memorial Hospital (KCMH) between 2006 and 2010 were eligible for the present study. The Thai population guidelines recommend a total weight gain of 10 to 16 kg or ≥ 0.27 kg/week during pregnancy. In contrast, in 2009 the Institute of Medicine (IOM) guidelines recommended a total weight gain of 11.5 to 16 kg or ≥ 0.31 kg/week. Our patients were analyzed using both sets of guidelines based on a normal pre-pregnancy BMI (18.5-24.9 kg/m²). SGA infants, perinatal outcomes, and maternal outcomes were compared between women whose weight gain met or exceeded the recommendations (normal weight gain) and women who did not meet these recommendations (poor weight gain).

Results: A case-control of 1,152 singleton pregnancies was used for the analyses. Women with poor weight gain by the recommendation of the Thai population guidelines were significantly associated with SGA infants (1% in normal weight gain group and 2.6% in poor weight gain group adjusted odd ratio (aOR) 2.77, 95% confidence interval (CI) 1.06 to 7.28), preterm births (aOR 2.20, 95% CI 1.43 to 3.38), and low birth weight (LBW) infants (aOR 2.57, 95% CI 1.60 to 4.13). Women with poor weight gain by the recommendation in the 2009 IOM guidelines were significantly associated with preterm births (aOR 2.04, 95% CI 1.31 to 3.17), LBW infants (aOR 2.75, 95% CI 1.66 to 4.55), but not SGA infants (aOR 1.97, 95% CI 0.74 to 5.20). Maternal weight gain < 0.27 kg/week (Thai guidelines) was more likely to associate with SGA infants than maternal weight gain < 0.31 kg/week (2009 IOM guidelines). Women with normal weight gain by both recommendations were more likely to have pregnancy-induced hypertension and less likely to have gestational diabetes compared with women with poor weight gain.

Conclusion: Poor maternal weight gain during pregnancy was associated with SGA infants, preterm births, and LBW infants. The Thai guidelines were a better predictor of SGA infants. The 2009 IOM guidelines should be used with caution in Thai patients.

Keywords: Maternal weight gain, Small for gestational age (SGA), Poor weight gain

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