Serum immunoglobulin E level and its impact on the pregnancy outcome associated with fetal growth restriction: a prospective cohort study

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ABSTRACT. We evaluated the relationship between total serum immunoglobulin E (IgE) levels and pregnancy outcome in a prospective cohort study focusing on fetal growth restriction (FGR). Sixty women with FGR and twenty with normal singleton pregnancy were enrolled during their third trimester. Infants were followed up for 6 months. Blood samples were obtained from pregnant women during the third trimester; cord blood samples were also taken. Six months after birth, blood samples were obtained from infants. Demographic and baseline characteristics were compared between groups. Birth weight, length and head circumference of neonates in the FGR group were lower than those in the control group. Total serum IgE level was significantly
increased in third-trimester pregnant women with FGR compared with normal group (P < 0.05). However, this trend was not observed in the cord blood at birth or peripheral blood of 6-month-old infants. The prevalence of atopic eczema between the 2 groups was similar. Linear regression analysis revealed that the IgE level in the third trimester was negatively correlated with birth weight (P < 0.05). Higher serum IgE level in the cord blood was significantly associated with an increased risk of being small for gestational age (P < 0.05). In conclusion, IgE levels in the third trimester of pregnancy and cord blood are strongly related to birth outcomes of FGR.

**Key words:** Cohort study; Fetal growth restriction; Immunoglobulin E