

Association of birth weight with risk of diabetes mellitus in adolescence and early adulthood: analysis of the Indonesian Family Life Survey

ABSTRACT

Purpose: We aimed to investigate the association of birth weight with the risk of diabetes mellitus in adolescence and early adulthood in the Indonesian population. **Methods:** This study analyzed data from the Indonesian Family Life Survey, a longitudinal study of the Indonesian population with repeated measurements at 3 time points (1997, 2007, and 2014). The subjects observed were children aged 0–59 months in 1997, who were 10–15 years old in 2007, and 17–22 years in 2014. We performed a generalized linear model to investigate the association between birth weight at baseline and the level of hemoglobin A1c (HbA1c) at the 2 follow-up periods. We adjusted the association for the characteristics of the children, parents, and household. **Results:** The mean standard deviation level of HbA1c was 7.35%±0.95% in 2007 and decreased to 5.30%±0.85% in 2014. The crude β (95% confidence interval [CI]) of the association between birth weight and HbA1c was 0.150 (-0.076, 0.377) in 2007 and 0.146 (-0.060, 0.351) in 2014. After adjustment for the sociodemographic characteristics of the children, parents, and confounding factors, the adjusted β (95% CI) was 1.12 (0.40–1.85) in 2007 and 0.92 (0.35–1.48) in 2014. The HbA1c of the parents, father's employment status, percentage of food expenditure, and underweight were the covariates that had significant associations with HbA1c. **Conclusion:** HbA1c level was higher in adolescence than in early adulthood. Birth weight was associated with HbA1c level in both periods. The HbA1c of the parents, father's employment, percentage of food expenditure, and underweight partly explained the association between birth weight and the HbA1c level.