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Maternal education and elevated thyroid-stimulating hormone levels in newborns

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Objective: To examine the relationship between neonatal thyroid function and the formal education of mothers.

Study Design: Participants came from a population-based Congenital Hypothyroidism (CH) screening program in Tianjin, China.

Methods: Of 66,390 registered births in 2015, 60,568 mothers and newborns had complete data. Mothers were assigned to one of four categories based on their educational attainment: (1) Mid-school or less, (2) high school or equivalent, (3) university or (4) postgraduate. Newborn (Thyroid-Stimulating Hormone) TSH level was measured on day 3-7. Two neonatal groups were created using cutoffs of TSH>10 µIU/ml and TSH>20 µIU/ml. Odds Ratios (OR) for CH risk by maternal education were estimated from logistic regression models after adjusting for potential confounders.

Results: For TSH>10 µIU/ml, the screen positive incidence rate for CH was 1:201 or 4.98 per 1,000 births; for TSH>20 µIU/ml, the incidence rate was 1:2,222 or 0.45 per 1,000 births. Screen positive incidence rates decreased with increasing maternal education level. Compared to mothers with a post-graduate education, the ORs (95% CI) for mid-school or less, high-school or equivalent and university were 2.09 (1.08, 4.04), 1.45 (0.73, 2.90) and 1.61 (0.85, 3.06) using a cutoff of TSH>10 µIU/ml. At the higher cutoff of TSH>20 µIU/ml ORs (95% CI) for mid-school or less and high-school or equivalent were 3.05 (1.20, 7.74) and 3.34 (1.24, 8.97), compared to a composite reference of university and post-graduate level education.

Conclusion: Maternal education is inversely related to neonatal thyroid function though by what mechanism remains unexplained.

Biography

Jian Liu is an Epidemiologist, works in the areas of early life risk factor's exposures and their impact on later life chronic diseases with special attention to cardiovascular disease.

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