

Environmental exposure to metals and children's growth to age 5 years: a prospective cohort study

Deskripsi Lengkap: <https://lib.fkm.ui.ac.id/detail.jsp?id=102075&lokasi=lokal>

Abstrak

In this prospective cohort study, based on 1,505 mother-infant pairs in rural Bangladesh, we evaluated the associations between early-life exposure to arsenic, cadmium, and lead, assessed via concentrations in maternal and child urine, and children's weights and heights up to age 5 years, during the period 2001-2009. Concurrent and prenatal exposures were evaluated using linear regression analysis, while longitudinal exposure was assessed using mixed-effects linear regression. An inverse association was found between children's weight and height, age-adjusted z scores, and growth velocity at age 5 years and concurrent exposure to cadmium and arsenic. In the longitudinal analysis, multivariable-adjusted attributable differences in children's weight at age 5 years were -0.33 kg (95% confidence interval (CI): -0.60, -0.06) for high (> 95th percentile) arsenic exposure and -0.57 kg (95% CI: -0.88, -0.26) for high cadmium exposure, in comparison with children with the lowest exposure (<= 5th percentile). Multivariable-adjusted attributable differences in height were -0.50 cm (95% CI: -1.20, 0.21) for high arsenic exposure and -1.6 cm (95% CI: -2.4, -0.77) for high cadmium exposure. The associations were apparent primarily among girls. The negative effects on children's growth at age 5 years attributable to arsenic and cadmium were of similar magnitude to the difference between girls and boys in terms of weight (-0.67 kg, 95% CI: -0.82, -0.53) and height (-1.3 cm, 95% CI: -1.7, -0.89).