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Title: A comparison of lung function and atopy between children with intrauterine growth retardation and normal birth weight in a birth cohort with documented wheeze

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Body: RATIONALE: Low birth weight and intra uterine growth retardation has been implicated in lower lung function and a higher incidence of atopy. This was tested in a birth cohort. AIM: To compare atopic status and lung function between IUGR and normal birth weight children with documented wheeze. METHODS: Children aged 3-7 yrs from a birth cohort with documented wheezing or a parental history of child wheezing and a doctors prescription for bronchodilators were studied. IUGR was defined as birth weight of less than 2.5kg. All the children underwent spirometry and skin prick test. Spirometry was done before and after bronchodilator according to ATS guidelines. Skin prick test was done using 10 antigens. Positive test was defined as wheal of more than 3mm of that of the negative control. RESULTS: A total of 92 children who were comparable were studied, out of which 36 (33%) were low birth weight and 56 (51.52%) were normal birth weight. IUGR children had a lower FEV1 / FVC ratio (FEV1 / FVC 87.26 ± 11.55) than children with normal birth weight (FEV1 / FVC 93.74 ± 7.62) p value - FEV1/FVC-0.002. They also had a lower FVC % value when compared to normal birth weight children. FVC% in IUGR -81.46 ± 10.97 and that of normal birthweight children were -86.91 ± 10.92 with a p value of 0.025. The skin prick test positivity in both groups were comparable (15.7% in normal birth weight and 16.7 % in IUGR children, p value -0.92) CONCLUSION: IUGR had lower FEV1/FVC ratio and FVC% as compared to normal birth weight children. Atopic status was comparable in both groups.