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| **The effect of moderate-late preterm birth on childhood lung function** |
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| **Introduction/Aim:** The detrimental effect of birth at <32 weeks’ gestation on lung function is well established. However, the effect of moderate-late preterm (32 to 36 completed weeks’ gestation; MLP) birth on lung function during childhood remains unclear. Our aim was to assess the effect of being born MLP, compared with being born at term (≥37 weeks’ gestation), on lung function at 9 years of age.**Method:** A prospective cohort of children born either a) MLP or b) at term at the Royal Women’s Hospital, Victoria, Australia, were assessed. Participants completed pre- and post-bronchodilator spirometry, DLCO, whole-body plethysmography and nitrogen multiple breath washout at 9 years of age. Mean differences [MD] in z-scores between those born MLP and at term were estimated using linear regression models with adjustment for potential confounding. A risk ratio [RR] was used to assess the risk of a positive bronchodilator response in the MLP group relative to the term group.**Results:** 148 children born MLP and 113 term controls were assessed. Compared with term controls, MLP children had lower z-scores (MD, 95% confidence interval) for FEV1: -0.39, (-0.64, -0.17), FVC: -0.27, (-0.51, -0.02), FEV1/FVC: -0.28, (-0.51, -0.04), FEF25-75%: -0.36, (-0.62, -0.10) and DLCO: -0.25, (-0.47, -0.04). Similar z-scores were observed for TLC: -0.13, (-0.33, 0.08), RV: 0.02, (-0.1, 0.1), RV/TLC: 0.01, (-0.1, 0.1) and lung clearance index at 2.5% [LCI2.5]: -0.07, (-0.43, 0.30) between birth groups. Children born MLP were no more likely to demonstrate a positive bronchodilator response than term born controls (RR, 95% confidence interval: 1.37, (0.73, 2.56)).**Conclusion:** Reductions in expiratory airflows and diffusion capacity in the first decade after birth occur in children born MLP, which may predispose them to later chronic obstructive lung disease.**Key Words:** preterm, moderate-late preterm, pulmonary function, paediatric, bronchodilator**Grant Support:** This work is supported by grants from the National Health and Medical Research Council (Centre of Research Excellence #1153176, Project grant #1161304). C. Du Berry’s PhD candidature is supported by the Melbourne Research Scholarship and the Centre of Research Excellence in Newborn Medicine. |