Structural lung disease in adult survivors of bronchopulmonary dysplasia

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Objective: To determine the nature and extent of structural lung abnormalities on high resolution computed tomography (HRCT) of the chest in a cohort of adult survivors of bronchopulmonary dysplasia (BPD) compared with adults born preterm who did not develop BPD. Methods: 20 adult BPD (14 male, mean (SD) age at study 24.4 (3.5) years, mean gestational age 27.8 (2.2) weeks, mean birthweight 901 (260) g) and 19 preterm non BPD subjects (14 male, mean (SD) age at study 25.88 (3.7), mean gestational age 30.6 (2.1) weeks, mean birthweight 1248 (188) g) underwent HRCT scanning of the chest. A validated scoring tool was used to assess HRCT scans, independently by two thoracic radiologists, blinded to the subject’s group. Results: The BPD group had more severe scores [mean (SD) 7.11 (4.7); range: 2 -20]) than the non BPD group [Mean (SD) 2.11 (2.11); range: 0-6], (p=0.001). This was significant when corrected for birthweight and gestational age. Abnormal HRCT findings were seen in all BPD adults and two-thirds of preterm non BPD. Among BPD adults, the most common findings were subpleural opacities (20/21), air-trapping (16/21), bullae (4/21), sub-segmental atelactasis (4/21) and mosaic perfusion (4/21). In the preterm non BPD group, the common abnormalities were subpleural opacities (9/19) and air-trapping (6/19). Subpleural opacities were significantly more likely in BPD (p=0.008). Conclusion: Significantly more structural lung abnormalities are present in adult survivors of BPD compared to those born preterm without BPD. References: 1. Aukland SM, et al. Neonatal BPD predicts abnormal pulmonary HRCT in long term survivors of EP birth. Thorax 2009;64:405-10.