European Respiratory Society
Annual Congress 2012

Abstract Number: 4033
Publication Number: 2846

Abstract Group: 7.6. Paediatric Respiratory Epidemiology
Keyword 1: Chronic disease **Keyword 2:** Infants **Keyword 3:** Lung growth/development

Title: Development of postnatal lung function in very low birth weight infants with or without BPD

Dr. Charles 23800 Roehr christoph.roehr@charite.de MD [1], Ms. Silke 23801 Wilitzki silke.wilitzki@charite.de [1], Dr. Hans 23802 Proquitté hans.proquitte@charite.de MD [1], Prof. Dr Christoph 23803 Bührer christoph.buehrer@charite.de MD [1] and Prof. Gerd 23804 Schmalisch gerd.schmalisch@charite.de MD [1]. [1] Neonatology, Charitè Medical Centre, Berlin, Germany, 10117 Berlin .

Body: Background: Very low birth weight (VLBW) infants (<1500g) with bronchopulmonary dysplasia (BPD) may suffer lung damage through mechanical ventilation and maturational arrest. Functional lung development was compared between VLBW infants with and without BPD. Patients and methods: Sequentially lung function tests (LFT) were performed at 50, 70 and 100 weeks postmenstrual age in 55 VLBW infants (29 with BPD (O2 supplementation at 36 weeks gestational age) and 26 VLBW infants without BPD (controls)). Mean gestational age (26 vs 29 weeks), birth weight (815 g vs 1125 g), and rates of mechanical ventilation ≥7d (55% vs 8%) differed significantly between BPD and controls. Main results: Body weight and length were persistently lower in BPD infants, as compared to controls, no significant differences were seen for respiratory rate, respiratory and airway resistance, functional residual capacity (FRC), maximal expiratory flow at FRC and blood gas values. Tidal volume, minute ventilation, respiratory compliance and FRC determined by SF6 multiple breath washout were significantly lower in BPD infants compared to controls, but the differences vanished after normalization to body weight. Conclusions: While somatic growth and some lung function parameter were delayed in BPD infants, their lung function appeared to develop along trajectories of non-BPD infants when actual body weight is being considered. Longitudinal LFT of preterm infants after discharge may help to identify BPD infants at risk of incomplete recovery of respiratory function, which can lead to respiratory problems later on.