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**Title:** Effects of salbutamol therapy on pulmonary mechanics and chronic lung disease in very low birth weight infants

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**Body:** Background. To determine the changes in pulmonary mechanics before and during salbutamol therapy and to evaluate the effect of salbutamol on the duration of mechanical ventilation in very low birth weight (VLBW) ventilator-dependent infants. Methods. A prospective single-centre trial was conducted. Forty-three patients (birth weight 600 to 1500 g, gestational age 24 to 32 weeks) who failed to be weaned from the respirator at 7 to 14 days of age were enrolled; 23 infants received a 7-day course of salbutamol (2.5 mg 4 times per day via nebulizer) and 20 patients were in the control group. A similar mean airway pressure (MAP) and fractional inspired oxygen concentration (FiO<sub>2</sub>), respiratory system mechanics (tidal volume (VT), respiratory compliance (C<sub>rs</sub>) and respiratory resistance (R<sub>rs</sub>)) were measured before and on days 2, 5, and 7 of the study. Results. There was a significant increase in C<sub>rs</sub> and VT in the salbutamol group as compared with the control group (P < .001). No major changes in R<sub>rs</sub> were observed. Salbutamol therapy significantly decreased FiO<sub>2</sub> and MAP (P < .001) and facilitated successful weaning from mechanical ventilation. In addition to a shorter duration of mechanical ventilation (P < .01), the occurrence of CLD (FiO<sub>2</sub> > 0.21 at 36 weeks of corrected gestational age, chest radiograph changes) was significantly decreased in the salbutamol group (P < .01). Conclusions. Our study indicate that salbutamol therapy in VLBW infants significantly improves lung's mechanics and facilitates extubation in infants and reduces the duration of mechanical ventilation and decreases CLD (at 28 days and 36 weeks) in a population of VLBW infants.