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Title: The evaluation of lung function measured by impulse oscillometry method in very low birth weight born children at preschool age

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Body: Introduction: Chronic lung disease is one of the most important complications of prematurity and results in short and long-term morbidity. Survival of more prematurely born babies leads to an increase in the incidence of bronchopulmonary dysplasia (BPD). Aim: To evaluate the lung function of babies who were born under birth weight of 1500 grams using impulse oscillometry in preschool age. Methods: Eighty-six children who were 3-6 years old and followed in our neonatology clinic (born under birth weight of 1500 grams) were enrolled in the study as the patient group and 40 term-born healthy children as the control group. The demographic data of the patients, duration of mechanical ventilation and oxygen therapy and presence of BPD were recorded. After routine physical examination, lung functions of children were measured by impulse oscillometry. The data were evaluated by SPSS 16 program. Results: Forty-nine (57%) of 86 patients were non-BPD, 20 were mild BPD, 14 were moderate BPD and 3 were severe BPD. Weight and height of premature and control groups were similar. There was a statistically significant difference between the two groups in terms of resistance (R5,R10,R20), reactance (X5,X10,X20) and resonant frequency (fres). The airway resistance was significantly higher and reactance was significantly lower in the premature group. However, there was no difference between BPD and non-BPD groups. Conclusion: Although premature babies can catch-up their peers at 3-4 years old in terms of their body percentiles, their lungs still reflect the traces of prematurity.