

levels and bronchial asthma phenotype in schoolchildren ( $\chi^2=22,2$ ,  $p<0,001$ ). The phenotype of virus-induced, effort induced and unresolved asthma is clinically presented by mild symptoms. Allergen-induced asthma is dominated by severe forms of the disease.

Phenotype allergen-induced asthma is identified in 70% of

children included in the present study and is characterized by high levels of the total serum IgE. The low values of total IgE in children with virus-induced, effort induced and unresolved asthma demonstrates the implication of slow allergic reactions.

**Key words:** bronchial asthma, total IgE, phenotype, children.

## Chest imaging findings in children with cystic fibrosis

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Cystic fibrosis (CF) is an inherited chronic life-threatening disease that most critically affects the lungs. It causes the production of sticky mucus that clogs the lungs and leads to inflammation. The severity of lung damage determines the evolution of the disease and requires instrumental confirmation.

Research was performed to determine the structural changes of the lung tissue in children with CF by the conventional chest X-ray and thorax spiral computed tomography (CT).

In this study we evaluated the chest X-rays of 55 patients (32 girls and 23 boys) and the CT scans of 36 patients with CF (21 girls and 15 boys), from 2 to 18 years. Four patients had a mild evolution of CF, 10 children had moderate, and 21 suffered from the severe form of the disease.

The most common chest radiographic findings in CF patients were hyperinflation (87.3%), bronchial thickening (94.5%) and dilatation (41.8%), an increase in interstitial markings (76.3%), and pneumofibrosis (85.4%).

Abnormal findings were detected in 94.4% patients examined by CT. Bronchiectasis developed in 77.7% CF patients, including 28.6% cases in the upper or mid lobes and 71.4% children with generalized bronchiectasis. Cystic bronchus deformations with liquid levels were identified in 2 of the patients with severe evolution of CF. Sectors of fibrosis were revealed in 6 spiral CT images. In two of the CF children CT findings of chronic obstructive bronchitis were detected, and in other two patients no structural bronchial changes were founded.

The method of spiral tomography offered more complete and detailed information about the anatomic-morphological substrate of pulmonary modifications in children with cystic fibrosis.

In children with CF structural bronchopulmonary spiral CT reveals modifications such as focal fibrosis, and sometimes widespread bronchial deformations with saccate bronchiectasis.

**Key words:** cystic fibrosis, lungs, children.

## The treatment of bronchiolitis in infants and young children

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Bronchiolitis is swelling and mucus buildup in the smallest air passages in the lungs (bronchioles) usually due to a viral infection (RSV, adenovirus, influenza, Parainfluenza). Bronchiolitis usually affects children under the age of 2, with a peak in the age of 3 - 6 months. It is a common, and sometimes severe illness.

Risk factors for bronchiolitis include: exposure to cigarette smoke at an age younger than 6 months old, living in crowded conditions, not being breastfed, and prematurity. Sometimes, no treatment is necessary.

The basic management of typical bronchiolitis is anchored in the provision of therapies that assures the patient is clinically stable, well oxygenated, and well hydrated. The main benefits of hospitalization of infants with acute bronchiolitis are the careful clinical monitoring, maintenance of a patient's airway (through positioning, suctioning, and mucus clearance) and adequate hydration, and parental education.

It is recommended to consider monitoring the cardiac and respiratory rate in hospitalized patients during the acute stage of bronchiolitis when the risk of apnea and/or bradycardia is greatest: premature infants, infants with underlying chronic conditions predisposing to apnea, infants with a witnessed episode of apnea, and infants less than three months of age who contract RSV.

It is recommended to administer supplemental oxygen when the saturation is less than 91% and consider weaning oxygen when the saturation is higher than 94%.

Systemic corticosteroids and inhaled bronchodilators are widely used by clinicians caring for infants with bronchiolitis. Clinical practice guidelines have recommended against their routine use, although there may be some instances where they will be useful: in older patients (> 12 months) with asthma risk factors (parental history of asthma, *in utero* exposure to parental smoking, and repeated wheezing before age 1) and any history of wheezing. It