

## Case Report : Bronchiolitis

**Inggrit Anggraini<sup>1\*</sup>, Supriadi Supriadi<sup>2</sup>, Muhammad Yoga Rizki Danil<sup>3</sup>,  
Destri Linjani<sup>4</sup>**

<sup>1,2,3,4</sup> Doctoral Program, Faculty of Medicine, Abdurrah University, Indonesia

Address: Jl. Riau Ujung No 73 Pekanbaru – Riau - Indonesia

Author correspondence: [inggrit.anggraini@univrab.ac.id](mailto:inggrit.anggraini@univrab.ac.id) \*

**Abstract.** *Bronchiolitis is an acute inflammatory injury to the bronchioles usually caused by a viral infection (most commonly respiratory syncytial virus). This condition can occur in people of any age, but severe symptoms are usually only seen in young babies.*

**Keywords :** *Bronchiolitis, Virus, Respiratory Syncytial Virus (RSV)*

### 1. INTRODUCTION

Bronchiolitis is an acute inflammatory injury to the bronchioles usually caused by a viral infection (most commonly respiratory syncytial virus). This condition can occur in people of all ages, but severe symptoms are usually seen only in young infants. (Maraqa, N., 2021) Bronchiolitis usually occurs in children aged <2 years. About 95% of cases occur in children under 2 years of age and 75% of them are under 1 year of age with a peak incidence at 2-6 months of age. Respiratory Syncytial Virus (RSV) is the cause of bronchiolitis Most frequently, approximately 95% of cases of bronchiolitis are serologically proven to be caused by RSV invasion. (Orenstein DM., 2000).

Bronchiolitis is a self-limiting disease, but bronchiolitis can cause respiratory disorders and can lead to respiratory failure requiring further treatment in addition to supportive management so it is important for clinicians to know the risk factors for severe bronchiolitis. (Rahajoe Nastiti N, et all, 2008). In addition, the clinical symptoms of bronchiolitis are almost similar to asthma and pneumonia. (Turner T, et all. 2008). Clinicians need to recognize and differentiate bronchiolitis from other differential diagnoses so that inappropriate management can be avoided. (Turner T, et all. 2008).

### Case Report

Patient An. MD aged 6 months came with complaints of shortness of breath since 3 days ago which was felt to be getting worse since 1 day ago, complaints were felt continuously, complaints worsened when the patient was active and reduced when resting, other complaints were fever, cough, nausea and vomiting. Previously the patient had never complained of the same complaints, but 3 days ago the patient fell from the sofa while lying face down. From physical examination, anemic conjunctiva, chest wall retraction and wheezing were found in

both lung fields. From supporting examinations, hemoglobin was found 6.3 gr / dl, MCV 54.8 Fl, MCH 15%, MCHC 27.5%, RDW 22.2%, Hematocrit 22.9% with an impression of Hypochromic Microcytic Anemia. On chest X-ray examination, an impression of bronchiolitis was obtained.

## 2. RESULTS AND DISCUSSION

An. MD aged 6 months came to the emergency room of Siak Regional Hospital with complaints of shortness of breath that had worsened since 1 day ago, the complaints had been felt since 3 days ago, the complaints were felt continuously and worsened during activities and decreased when resting, in addition the patient also complained of weakness and fever that came and went, appeared in the afternoon towards evening and went down in the morning, the patient also complained of coughing up phlegm but was difficult to expel, nausea and vomiting especially when food was taken in, the patient had difficulty drinking breast milk and had not received complementary feeding, urination and defecation were within normal limits.

The patient was born at 34-35 weeks of gestation by breech section a/i gemelli, the home environment was clean but crowded, then the patient's neighbor was an active smoker and often smoked near the patient, the patient's father was also an active smoker and often smoked near the patient too.

Bronchiolitis is an acute lower respiratory infection (ARI-B) characterized by airway obstruction caused by acute inflammation, edema, and necrosis of epithelial cells lining the small airways and increased mucus production. Bronchiolitis most often occurs in children under 2 years of age with the most frequent incidence at approximately 6 months of age. Premature babies, especially those under <29 weeks of age, have a higher risk of developing bronchiolitis. Severe bronchiolitis is more common in males than females. Cigarette smoke, which contains tar, nicotine and polyaromatic hydrocarbons, has a negative effect on the lungs of infants. Exposure to cigarette smoke during prenatal and postnatal periods can affect lung development and the immune system in children, which increases the risk of bronchiolitis.

From the anamnesis results, the patient's symptoms and risk factors point to bronchiolitis, but to ensure the patient's diagnosis, a physical examination and supporting examinations are needed. From the results of the physical examination, the patient appeared moderately ill with a good physical appearance, anemic conjunctiva was found on the conjunctiva examination, chest wall retraction was found, wheezing was found in both lung fields on auscultation examination, warm acrales were found on extremities. Other examinations were within normal limits. Anemia is a condition where red blood cells cannot meet the needs. The physiological state of each individual's body is different because it is influenced by factors

such as age, gender, altitude, smoking habits, and pregnancy. Anemia is characterized by low hemoglobin concentration in the blood. Bronchiolitis mainly attacks young infants, and its initial clinical manifestations are unclear. Possible early symptoms are signs of acute upper respiratory infection such as cough, mild runny nose and fever, wheezing, difficulty breathing (shortness of breath) which is usually on expiration, cyanosis, grunting, vomiting after coughing, irritability and decreased appetite, increased respiratory rate (tachypnea), tachycardia, increased temperature above 38.5°C may be present.

From the results of physical examination leading to symptoms of bronchiolitis, and also found that the patient also experienced anemia, then supporting examinations are needed to determine the classification of anemia. From the results of supporting examinations, blood tests and chest X-rays, the results of hemoglobin 6.3 gr / dl MCV 54.8 fl MCH 15% MCHC 27.5% RDW 22.2% Hemotocrit 22.9% from blood tests obtained the impression of Microcytic Hypochromic Anemia. On chest X-ray examination, the results of increased bronchovascular patterns were obtained, a relatively homogeneous opaque image appeared in the paratrachea to the perihiler (thymus) with the impression of Bronchiolitis.

Chest X-ray of children with bronchiolitis often shows nonspecific and patchy hyperinflation and atelectasis that can be mistaken for consolidation. Symptoms of iron depletion or iron deficiency are nonspecific. Diagnosis is usually based on laboratory test results, namely decreased serum ferritin/transferrin saturation and serum iron levels. Patients receive 2L Oxygen therapy, 3 mg Dexamethasone Inj., IVFD Kaen 1B 26 Tpm, Combivent Nebulizer, Ceftriaxone Inj., 0.5 mg salbutamol, 1 mg Ctm, 2 mg Zinc and PCR transfusion. Oxygen supplementation is indicated in children whose hemoglobin saturation levels are below 92%. Children with bronchiolitis usually come with difficulty eating and drinking, therefore it is important to assess hydration status. Corticosteroids are commonly used in the treatment of bronchiolitis as anti-inflammatory agents. In theory, corticosteroids should be useful in reducing the inflammatory response of the lower respiratory tract due to viral infections. And blood transfusion is performed to treat anemia in patients.

### **3. CONCLUSION**

Bronchiolitis is an acute lower respiratory infection (ARI-B) characterized by airway obstruction and wheezing. Bronchiolitis is caused by a virus that often attacks children aged <2 years and occurs in the first year of life. Various viruses cause bronchiolitis and 95% of cases are caused by Respiratory syncytial virus (RSV). Bronchiolitis is a self-limited disease, most of the management of bronchiolitis is supportive, namely supplementation of oxygen and

hydration or patient nutrition, after adequate supportive therapy, administration of medication can be considered.

In general, the long-term prognosis for bronchiolitis is very good if supportive therapy is adequate. The majority of children recover without side effects, but it is necessary to recognize the risk factors for severe bronchiolitis.

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