

# Epidemiology, Clinical Characteristics, Laboratory Findings of Bronchiolitis in Fallujah Teaching Hospital for Women and Children

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## Abstract:

**Background:** Bronchiolitis is the most common disease of the lower respiratory tract during the first year of life. Which is usually caused by respiratory syncytial virus. The treatment is usually supportive, so epidemiology, clinical, laboratory, and radiologic findings might facilitate early diagnosis and treatment of bronchiolitis cases.

**Objectives:** The aim of our study was to evaluate the clinical characteristics and laboratory findings of children hospitalized due to bronchiolitis.

**Patients and Methods:** In this cross sectional study 143 patients with bronchiolitis were selected who age 1-24 months old who were admitted to the Fallujah teaching hospital for women and children, over the period of 6 months from 1<sup>st</sup> of October 2018 to 1<sup>st</sup> of April 2019. The patients were selected from large number of cases admitted to Hospital according to bronchiolitis criteria.

**Results:** A total number of 143 patients were included in this study, 52.4% were male and 47.6% were female. The most common clinical findings were tachypnea, dyspnea, cough, fever, wheeze consecutively. Hyperinflation was the most common radiological study, while lymphocytosis was the most common laboratory finding.

**Conclusions:** In our study Bronchiolitis was mostly diagnosed in the first 6 months of age, most of patients from urban area, tachypnea was most common sign while hyperinflation was the most common radiological finding and lymphocytosis was most common CBC finding. These data might facilitate early diagnoses and treatment of bronchiolitis cases.

**Keywords:** Epidemiological, clinical characteristics, laboratory findings of bronchiolitis.

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## Introduction:

Bronchiolitis is the most common disease of the lower respiratory tract during the first year of life (1). Respiratory syncytial virus is the underlying cause of most bronchiolitis and this infection is associated substantial morbidity in young children(2,3). Annual bronchiolitis hospitalization among infants younger than one year has been assessed at 31.2/1000 of USA pediatric admission in 1996, most of bronchiolitis cases occur during winter (4). The rate of total hospitalization among children younger than one year associated with bronchiolitis increased from 5.4% in 1980 to 16.4% in 1996 in USA (5). Bronchiolitis characterize by cough, coryza, fever, expiratory wheezing, grunting, tachypnea, retraction, and air trapping (6,7). On examination there are fine inspiratory crackles and/or high-pitched expiratory wheeze (8,9,10). Chest radiographs often show air

trapping or hyperinflation or they may appear normal, respiratory syncytial virus bronchiolitis and pneumonia may be hard to distinguish clinically; however, bronchiolitis does not require antibiotic therapy (11). Epidemiology, race, and health status play a role in the prevalence of bronchiolitis. In Simoes et al study in Indonesia 2011, prevalence of bronchiolitis was lower in infants younger than 6 months of age and higher in infants more than 6 months of age (12). While in Espinola et al study in Spain 2008 the prevalence was higher in infants between one month to one year of age than one to two years of age (13).

## Patients and methods:

In this study we select 143 patients whose age between one to 24 months who present with first attack of bronchiolitis and diagnosed based on clinical criteria. These patients were admitted to the Fallujah teaching hospital for women and children over the six months period from first of October 2018 to first of April 2019 , Data were collected from designed questionnaire which involve age, sex,

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residency, clinical signs and symptoms which include fever, dyspnea, tachypnea, cough, fine crackles, wheeze, anorexia, irritability, sneeze, nausea, vomiting, nasal congestion, cyanosis, apnea, intercostals recession, radiological abnormality include hyperinflation , pulmonary congestion, complete blood count (CBC) include , lymphocytosis, leucopenia. Data was descriptive and qualitative variable represented as percentage and number.

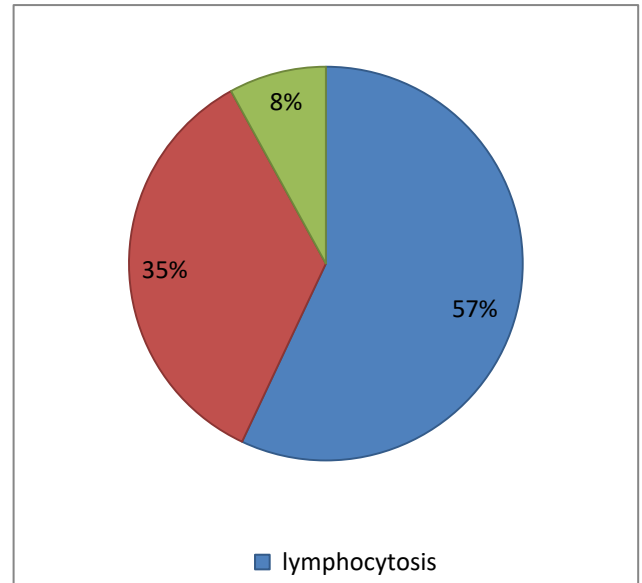
**Results:**

From a total of 143 patients, 75(52.4%) males and 68(47.6%) females. About age of patients, 85(59.4%) were 1 to 6 months, 48(33.6%) were 6 to 12 months and 10(7%) were 12 to 24 months .86 patients (60%) were from urban area while 57 patients (40%) were from rural area. Signs, symptoms, clinical and laboratory findings are shown in (Table 1). The most common sign was tachypnea. Radiological findings which include hyperinflation seen in 92 patients (64%) while pulmonary congestion seen in 28 patients (20%),others were normal . Regarding CBC findings lymphocytosis seen in 82 patients (57%) while leukopenia seen in 11 patients (8%), others were normal as shown in (Figure 1).

**Statistical Analysis:** Our study was a descriptive study so we use a frequency and percentage to describe collected data

**Table 1: Clinical and laboratory findings in studied patients**

Signs and symptoms	Frequency (%)
Tachypnea	77%
Dyspnea	73%
Cough	72%
Fever	64%
Wheeze	62%
Nasal congestion	52%
Fine rales	51%
Vomiting	36%
Irritability	34%
Sneeze	31%
Anorexia	30%
Intercostals recession	25%
Cyanosis	19%
Nausea	14%
Apnea	4%
Abnormal x-ray findings	84%
Abnormal complete blood count	65%



**Figure 1: Complete blood count results in studied patients**

**Discussion:**

In this study bronchiolitis occur in 75 males (52.4%) and 68 female (47.6%). These results are comparable with Borchers et al in California 2013 (14).Patients with bronchiolitis from urban areas were 86(60%)and from rural areas were 57(40%).These results were similar to Boyce et al in USA in 2000.and AL Janabi et al in Iraq in 2007 studies that shows that rates of bronchiolitis are higher in urban areas(15,19).In this study bronchiolitis occur most commonly between 1-6 months age .This result was comparable to other study from developed country(16).The most common clinical symptoms in this study were tachypnea (77%) followed by dyspnea, cough, fever, wheeze. These results were nearly comparable to other study which shows that the course of bronchiolitis is variable and dynamic (17). Soleimani et al, showed that lymphocytosis is a common complete blood count findings and most common radiologic findings were normal chest x ray followed by hyperinflation and pulmonary congestion (18). In our study lymphocytosis was a common complete blood count findings which is compatible with Soleimani et al, while the most common radiologic findings were hyperinflation followed by normal chest x ray, and pulmonary congestion.

**Conclusions:**

In our study Bronchiolitis was mostly diagnosed in the first 6 months of age, most of patients from urban area, tachypnea was most common sign while hyperinflation was the most common radiological finding and lymphocytosis was most common CBC finding. These data might facilitate early diagnoses and treatment of bronchiolitis cases

**Authors' contributions:**

Dr majeed hameed: Concienved and designed the analysis, Wrote the paper)

Dr mohammed shukr (Collected the data)

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## علم الاوبئة ، الخصائص السريرية ، النتائج المختبرية لالتهاب القصيبات عند الاطفال في المستشفى

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**الخلاصة :** الخلفية التهاب القصيبات هو المرض الاكثر شيوعا للجهاز التنفسي السفلي خلال السنه الاولى من العمر. وهو عادة يحدث بسبب الفيروس المخلوي التنفسي. العلاج عادة ساند لذلك علم الاوبئه والنتائج السريره والمختبريه والاشعه ربما تسهل التشخيص المبكر والعلاج لحالات التهاب القصيبات .

**الهدف :** الهدف من دراستنا هي لتقييم الصفات السريره والنتائج المختبريه للاطفال الراقدين في المستشفى نتيجة التهاب القصيبات.  
**المرضى والطرق :** في دراسة المقطع العرضي هذه 143 مريض لديهم التهاب قصيبات تم انتقايم وتتراوح اعمارهم من 1-24 شهر والذين تم ادخالهم مستشفى الفلوجه التعليمي للنسائيه والاطفال خلال فترة 6 اشهر من الاول من تشرين الاول 2018 الى الاول من نيسان لعام 2019. المرضى تم انتقايم من عدد كبير من المرضى الراقدين في المستشفى حسب معايير التهاب القصيبات.  
**النتائج :** العدد الكلي ل 143 مريض تم شمولهم في هذه الدراسه 52.4% منهم ذكور و 47.6% اناث. النتائج السريره الاكثر شيوعا كانت تسارع النفس، ضيق النفس، سعال ، حمى ، ازيز، على التوالي . التضخم كان الدراسه الاشعاعيه الاكثر شيوعا بينما للمفاويات كانت النتيجة المختبريه الاكثر شيوعا.

**الاستنتاجات :** التهاب القصيبات شخصت غالبا في الستة اشهر الاولى من العمر . معظم المرضى من الحضريه ، تسارع النفس كان هو علامه الاكثر شيوعا، بينما التضخم كان النتيجة الشعاعية الاكثر شيوعا وازدياد الخلايا للمفاوية كان الاكثر شيوعا في فحص الدم، هذه البيانات ربما تسهل التشخيص المبكر والعلاج لحالات التهاب القصيبات .  
**الكلمات الدالة:** علم الاوبئه، الصفات السريره، النتائج المختبرية لالتهاب القصيبات.