Prevalence of Bronchiolitis among Hospitalized Children less than Two Years in Babylon Province

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Abstract

Background: Bronchiolitis is one of viral lower respiratory tract infections that constitute a heavy burden to public health in the Pediatric population worldwide, which occurs most frequently before age 2 years in the winter and early spring months and most frequently induced by a viral infection (respiratory syncytial virus).

Settings and Design: A survey descriptive study conducted in Babylon Province through-out the period of "1st January 2019 to 30 March 2019" (three) special hospitals of pediatrics.

Method and Materials: Non-probability "purposive" sample consists of 3374 subjects, which collected through a review of patient records for (2016, 2017, 2018) in the statistical units in Babylon hospitals. The information of data was collected retrospectively through-out the special questionnaire obtained from the patient's sheets in the statistical unit.

Statistical analysis used: The data are coded and tested by the application (SPSS) through the descriptive and inferential analysis.

Results: The analysis of the study indicated that the majority of the children (62.7%) were aged (1- 6) months old who lived in rural areas, the male percentage was higher than the female. In addition, the study indicated that the prevalence of bronchiolitis progressed during the last three years.

Conclusions: The study concludes that the higher morbidity of bronchiolitis was in 2018, most of them admitted to the hospital in January months. Also, the duration of hospital stay was > 4 days.

Key-words: *Epidemiology, Prevalence, Bronchiolitis, children.*

Introduction

Respiratory disorder is considered the most frequent reason for hospitalization and illness in children[1,2]. Bronchiolitis is the most relevant infection of the LRTI during infancy through the 1 year of life. "Respiratory syncytial virus" (RSV) is the main cause of this condition as it is considered a major leading cause of increasing the rate of morbidity and hospitalized patients number and cost[3]. As long as, the epidemiology of RSV in developing countries has identified that the most common viral cause of LRI globally[4], bronchiolitis constitutes a heavy burden to public health in the Pediatric population worldwide, particularly in the United States, which causes significant morbidity and mortality in infants and young children[5]. Bronchiolitis mortality rate is roughly 2 per 100 000 infants and is higher in developing than in developed countries, and statistical data showed that globally there are 150 million new cases of bronchiolitis annually[6]. Also, it has been reported that hospitalization of children during seasonal Respiratory syncytial virus epidemics about 2-3 % of all infants less than 1 year[7]. In the United States, there is significant season-to-season variation in RSV with the period of the peak prevalence varying by as much as 7 weeks (ranging from early January to late February) between seasons[8]. In Egypt, during the period between "October 2016 and March

2017; found that most of the children 53.3% were diagnosed with bronchiolitis and 31.7% were diagnosed with pneumonia. The median duration of the hospital stay four days[9]. Prophylaxis is considered the most effective and safe method that is used in the prevention of respiratory syncytial virus (RSV) disease in infants[10].

Methodology

The study aims to determining the prevalence of bronchiolitis among hospitalized children less than two years

Study design: A cross-sectional descriptive study" that conducted through the period of 1 January 2019 to 30 March 2019.

Setting study: the studyconducted in in Babylon province at ''Pediatric Teaching hospitals''.

Sample of study: A total of 3374 is selected by a convenience non-probability sample through a review of statistical records which were selected out from the main hospitals in Babylon province.

Study instrument: The information of data was collected retrospectively through-out the special questionnaire obtained through a review of patient records for (2016, 2017, 2018) in the statistical units in Babylon hospitals.

Data Analysis: The data are coded and tested by the application "statistical package of social science (SPSS)(Version 24)". A descriptive analysis includes frequencies and percentage; inferential data analysis included the correlation coefficient, ANOVA test.

Results

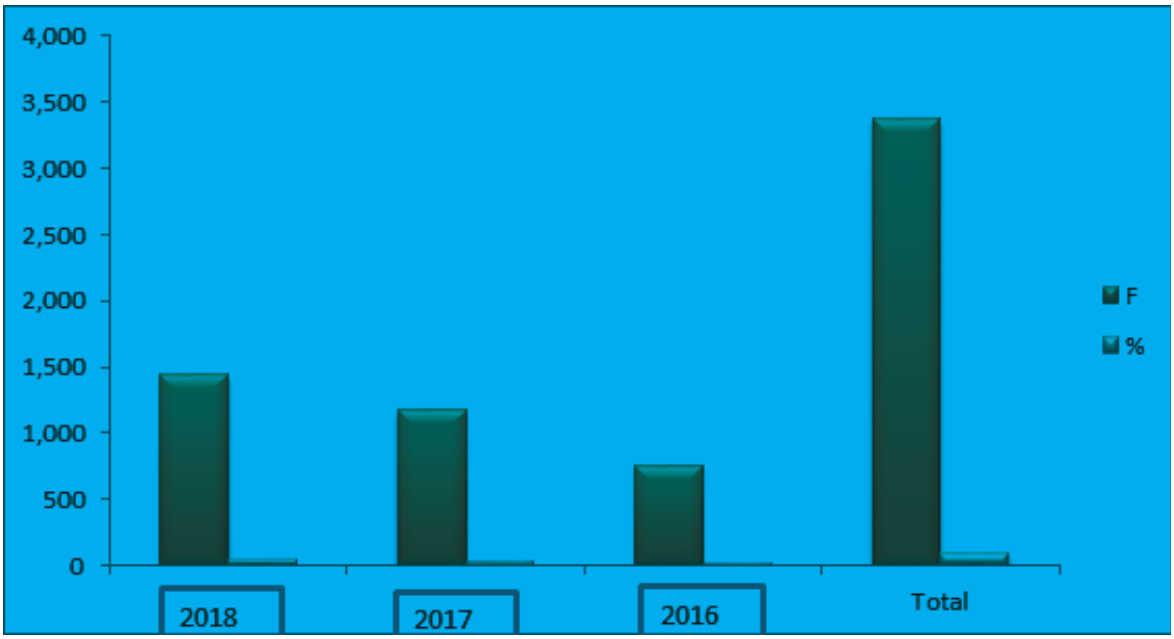

Figure (1) the prevalence of bronchiolitis disease in Babylon province for the last three years (2016-2017-2018). (Total=3,374)

Figure above clearly indicated that the prevalence of bronchiolitis progressed during the last three years and the peak percent 1,442 (42.7%) of the sample occurred in 2018.

Table (1) Distribution of Bronchiolitis prevalence data from statistical records in the hospital.

Variables		Frequency	Percent
Age	1-6	2,116	62.7
	7-12	770	22.8
	13-18	313	9.3
	19-24	175	5.2
	Total	3,374	100.0
Gender	Male	2,051	60.8
	Female	1,323	39.2
	Total	3,374	100.0
Residency	Urban	1,420	42.1
	Rural	1,954	57.9
	Total	3,374	100.0
Duration of hospitalization stay	less than 4 day	2,581	76.5
	≥ 4 days	793	23.5
	Total	3,374	100.0
Month of admission	January	2,170	64.3
	February	783	23.2
	March	421	12.5
	Total	3,374	100.0
Outcome of discharge	Well	2,182	64.7%
	Un recover or chronic	542	13.4%
	Dead, un known	740	21.9
	Total		
Years of admission	2018	1,442	42.7
	2017	1,176	34.9
	2016	756	22.4
	Total	3,374	100.0

Table (1) reveals that the majority of children were male in the past three years which signified as (60.8%) with (62.7 %) of babies aged less than 6 months; most of them admitted in January and recovered within a short period of hospitalization stay(less than 4 days). The highest percent 57.9 %were lived in the rural area.

The findings in the table above also reported that the prevalence of bronchiolitis was raised in the last three years, particularly in 2018.

Discussion

Prevalence of bronchiolitis disease for the last three years (2016-2017-2018)

The findings in the figure (1) reveals that the higher morbidity of bronchiolitis was in 2018. The researcher indicated in the present study that bronchiolitis was increased gradually in the last three years (2016,2017,2018) consequently. This study go along with a retrospective study carried out in Italian about "Comparing of two different epidemic seasons of

bronchiolitis", which done to evaluate the differences of bronchiolitis frequency and characteristics of the bronchiolitis-related hospitalization between two seasons; S1(2015-16), S2(2016-17). The author indicated that the bronchiolitis morbidity rising from 17% in 2015-16 to 26% in 2016-17. Also, it showed an increased rate of hospitalization[11]. Another study conducted at AL-Zarqa Government Hospital, Jordan. It's goal to analyze the epidemiology of RSV infection on 271 children less than 24 months with bronchiolitis, from January 1997and May 1999. The results indicated gradual rising with peak incidence were in 1999([12]). Rationally speaking, Iraqi children's displacement and migration, particularly during the winter season, live in a crowded situation with bad earnings and health facilities that increased the incidence of communicable diseases with missing or dropping out in the immunization follow-up timetable.

Distribution of Bronchiolitis prevalence data from statistical records

In related to the prevalence of bronchiolitis as shown in the table (4.6), the study underhand proved that the majority sample was males aged less than six months who lived in a rural area, admitted in January, 76.5% stayed less than four days in the hospital which increased within two years progressed. a prospective study at Al-Bashir Hospital, Jordan, on children's admission < 24 months. The author mentioned that the majority sample 60% were male,(53%)were < 6 months, with the annual peak during January and February. In reason, low immunity and high incidence of RSV in children less than 6 months during the winter season. Furthermore, the research showed that the duration of hospital stay was 4 days, the length of stay as indices for the severity of bronchiolitis and linked with absence of breastfeeding, reduced age, greater viral load and sepsis. Certain study indicated that the length of hospital stay was 3 days. The period varied in this study from 4 days in 2010 to 3 days in 2015, and the mean length of stay similar to that reported in Spanish studies[13]. In the term of discharge outcome in the present study, more than half 64.7% were well status. The outcome discharge and LOS are dependent on effective management. Evidence study conducted at Meherpur General Hospital, about the RSV outbreak to determine the etiology and explore possible risk factors. Which indicated that no death among analysing cases, (36%) Still sick after 5 days of illness and (39%) recovery within 5 days[14].

Conclusion

The study concludes that predominant age is (1-6) months with a majority to male than female, the higher prevalence of bronchiolitis was in 2018, LOS was less than four days in majority of children, with improved status.

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing, University of Babylon, Hilla City, Iraq and all experiments were carried out in accordance with approved guidelines.

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