

The Impact of late prematurity on respiratory hospitalizations

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DISCLOSURE

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Introduction

Late prematurity and late respiratory morbidity

How do you define respiratory morbidity?

- ☐ Cough
- ☐ Wheezing
- ☐ Dyspnea
- ☐ Desaturation

How do you define late prematurity?

Born at 34-0/7 to 36-6/7 weeks gestational age

ACOG committee opinion No. 404 April 2008. Late-preterm infants. Obstet Gynecol.2008;111(4):1029–1032

Respiratory Morbidity and Lung Function in Preterm Infants of 32 to 36 Weeks' Gestational Age

AUTHORS: Andrew A. Colin, MD,^a Cynthia McEvoy, MD,
MCR,^b and Robert G. Castile, MD^c

Pediatrics 2010;126:000

“Because the number of studies exclusive to infants aged 34 to 36 weeks' GA was limited, selected studies also included infants aged 32 to 36 weeks' GA.”

Introduction

Late Preterm Infants: Near Term But Still in a Critical Developmental Time Period

Amir Kugelman and Andrew A. Colin

Pediatrics 2013;132;741; originally published online September 23, 2013;

DOI: 10.1542/peds.2013-1131

TABLE 2 Long-Term Respiratory Outcome

Reference	Study Design	Participants
McEvoy et al ⁵⁹	Prospective	31 LP (33–36 wk)/31 term
Todisco et al ⁶⁰	Case control, matched siblings	34 LP (34–36 wk)/34 term
Kotecha et al ⁶¹	Prospective	81/49 infants: 33–34 wk, 248/132 infants: 35–36 wk, 6308/4284 infants: term, at 8–9 yr and 14–17 yr, respectively
Hoo et al ⁶²	Prospective	24 infants 33.2 ± 2.2 wk
Mansell et al ⁶³	Case control	18 premature infants with RDS/26 premature infants without RDS/18 term
Friedrich et al ⁶⁴	Prospective	26 infants (30–34 wk)/24 infants at term

Introduction

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ORIGINAL ARTICLE

Respiratory Syncytial Virus and Recurrent Wheeze in Healthy Preterm Infants

Maarten O. Blanken, M.D., Maroeska M. Rovers, Ph.D., Jorine M. Molenaar, M.D., Pauline L. Winkler-Seinstra, M.Sc., Adam Meijer, Ph.D., Jan L.L. Kimpen, M.D., Ph.D., and Louis Bont, M.D., Ph.D., for the Dutch RSV Neonatal Network

METHODS

In the double-blind, placebo-controlled MAKI trial, we randomly assigned 429 otherwise healthy preterm infants born at a gestational age of 33 to 35 weeks to receive

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Effect of Palivizumab Prophylaxis on Subsequent Recurrent Wheezing in Preterm Infants

Shigemi Yoshihara, Satoshi Kusuda, Hiroyuki Mochizuki, Kenji Okada, Sankei Nishima and Eric A.F. Simões

Pediatrics 2013;132:811; originally published online October 14, 2013;
DOI: 10.1542/peds.2013-0982

METHODS: We conducted an observational prospective multicenter (52 registered hospitals in Japan) case-control study in preterm infants with a gestational age between 33 and 35 weeks followed for 3 years. During the 2007–2008 RSV season, the decision to administer

The Burden of Childhood Asthma and Late Preterm and Early Term Births

Maijakaisa Harju, MD¹, Leea Keski-Nisula, MD¹, Leena Georgiadis, MD¹, Sari Räisänen, PhD, RN, RM¹,
Mika Gissler, PhD^{2,3}, and Seppo Heinonen, MD^{1,4}

Study design We conducted a retrospective observational hospital-based birth case-control study in a university-based obstetrics and gynecology department in Finland. A total of 44 173 women delivering between 1989 and 2008 were linked with the social insurance register to identify asthma reimbursements for their offspring (n = 2661). Pregnancy factors were recorded during pregnancy. Infants were categorized as moderately preterm (≤ 32 weeks), late preterm (33-36 weeks), early term (37-38 weeks), term (39-40 weeks), or late term and postterm

Respiratory Function in Healthy Late Preterm Infants Delivered at 33-36 Weeks of Gestation

Cindy McEvoy, MD, MCR, Sridevi Venigalla, MD, Diane Schilling, RRT, Nakia Clay, BA,
Patricia Spitale, MD, and Thuan Nguyen, PhD

Introduction

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Late Preterm Birth and Risk of Developing Asthma

Karon Abe, PhD, Carrie K. Shapiro-Mendoza, PhD, MPH, Laura R. Hall, MPH, and Glen A. Satten, PhD

J Pediatr 2010;157:74-8

Methods: Infants born late preterm were defined as those born between **34 and 36 completed weeks** of gestation

Conclusions: Our study found that late preterm birth **was not associated** with a diagnosis of asthma in early childhood.

Increased Risk for Respiratory Syncytial Virus-associated, Community-acquired Alveolar Pneumonia in Infants Born at 31–36 Weeks of Gestation

David Greenberg, MD,*† Ron Dagan, MD,*† Eilon Shany, MD,†‡ Jacob Bar-Ziv, MD,§
and Noga Givon-Lavi, PhD*†

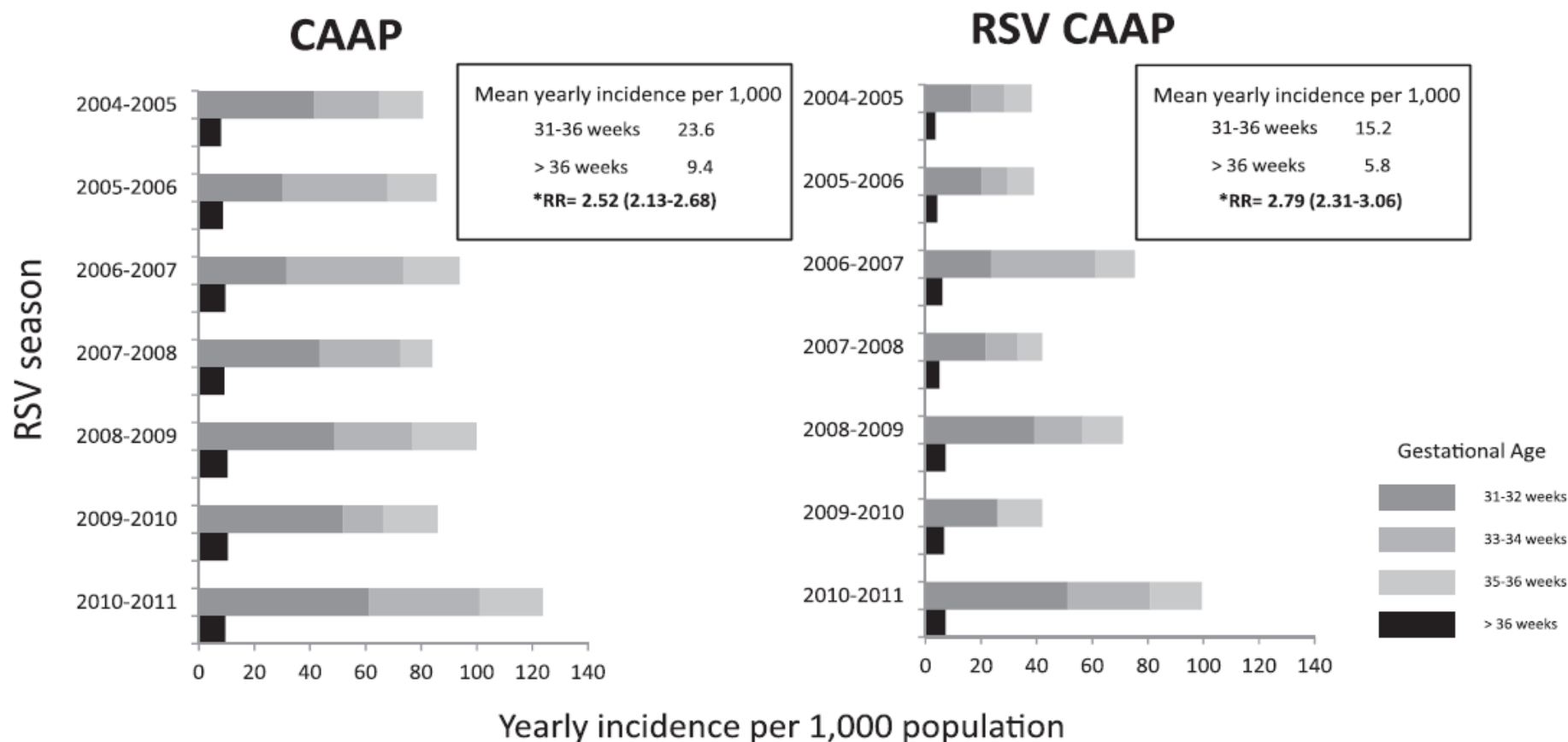
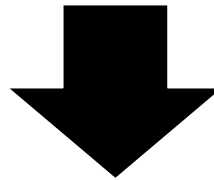


FIGURE 1. Yearly incidences of CAAP and RSV-CAAP hospitalization in children under 24 months of age by GA groups 31–32, 33–34, 35–36 versus > 36 weeks in Southern Israel 2004–2011. *RR (95% CI).

Objective

To compare the clinical course and outcomes
of respiratory illness admissions <2 yr



LPT Vs full term

Methods

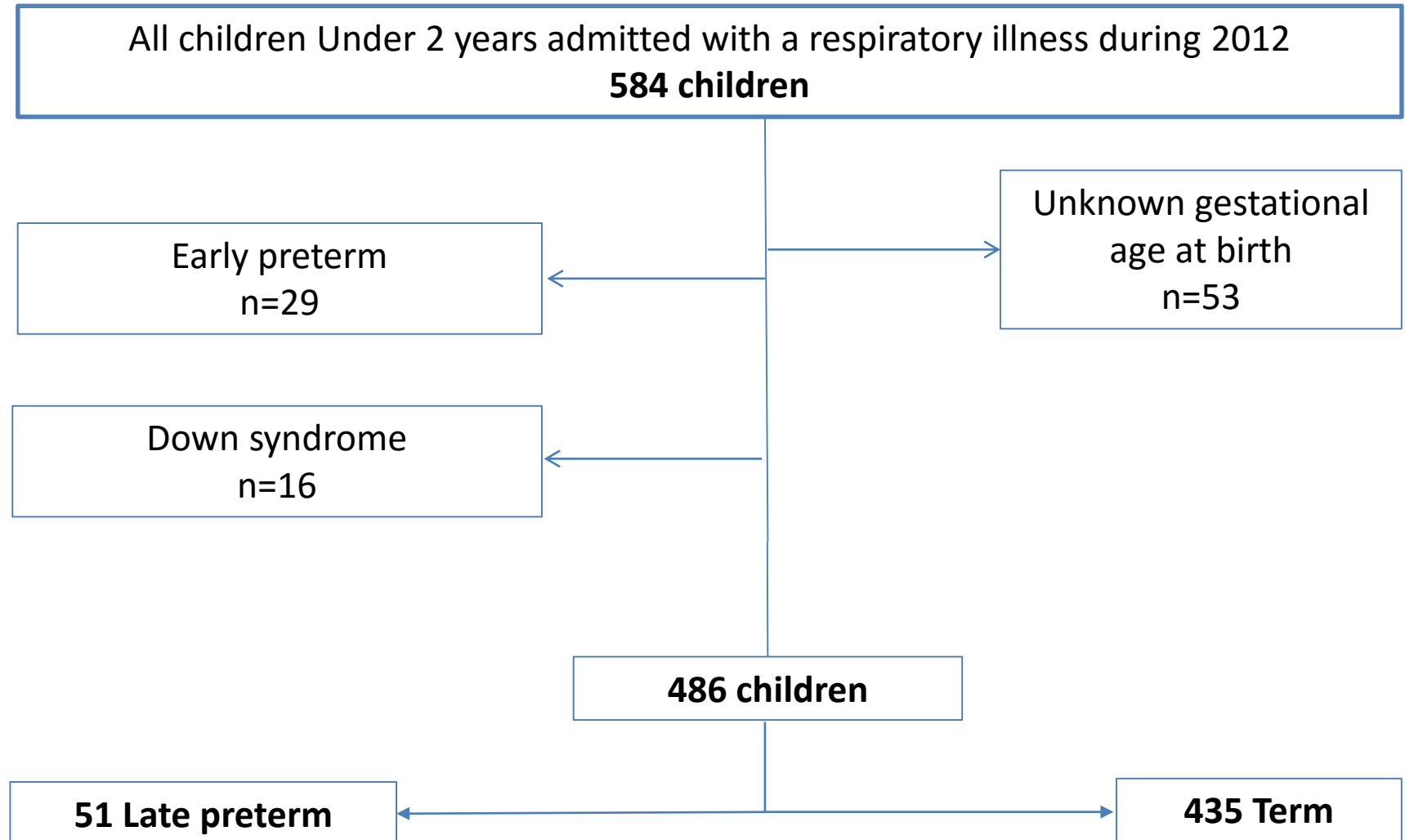
Review of patients records < age 2yr
admitted during 2012
due to a respiratory illness

Exclusion criteria:

- ❑ Early preterm infants
- ❑ Downs syndrome

Hospitalization for respiratory syncytial virus illness in Down syndrome following prophylaxis with palivizumab. *Pediatr Infect Dis J* 2014;33:e29–e33

Results



Results

Table 1. Patient Characteristics at Presentation

	Full Term (n=435)	Late Preterm (n=51)	
Age (m) Mean [sd]	8.3 [6.4]	7.5 [4.7]	NS
Sex (% male)	56.3	62.7	NS
Duration of fever before admission, days	1.6 [2.4]	1.3 [1.8]	NS
Chronic medical treatment, n (%)	33 (7.6)	5 (9.8)	NS
Chronic Oxygen treatment, n (%)	2 (0.5)	0 (0)	NS
Chronic respiratory morbidity, n(%)	53 (12.2)	2 (3.9)	NS
Chronic non respiratory morbidity, n(%)	22 (5.1)	4 (7.8)	NS

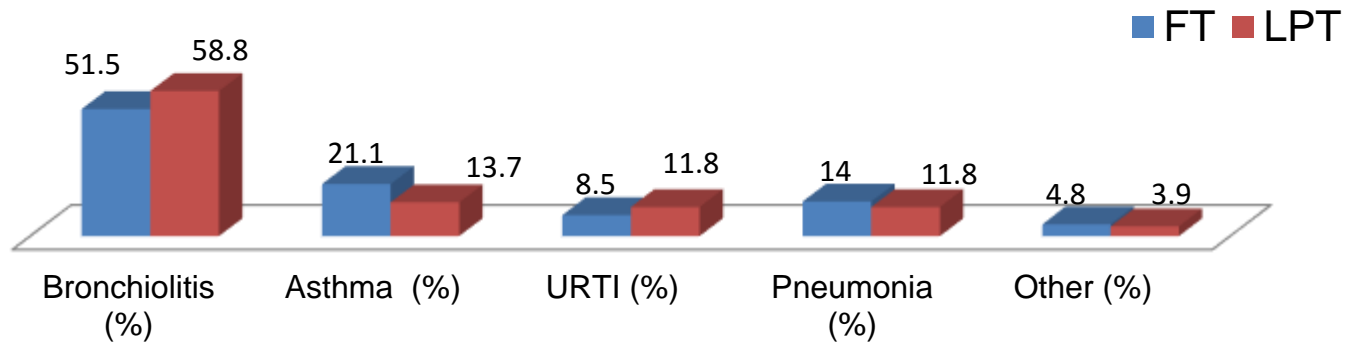
Results

Table 1. Patient Characteristics at Presentation (cont.)

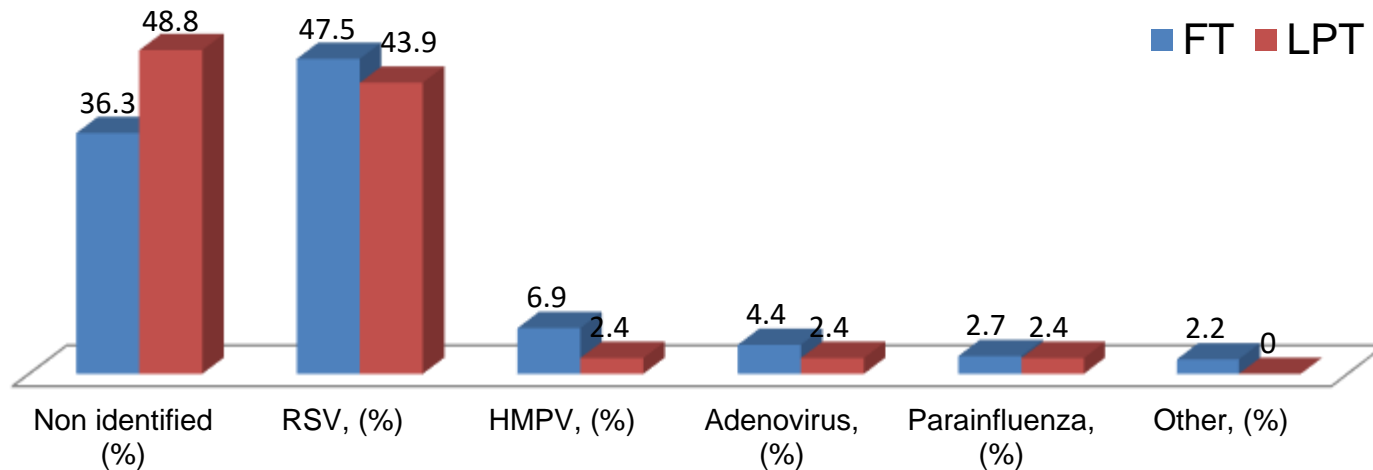
	Full Term (n=435)	Late Preterm (n=51)	
Patients with fever, n (%)	425 (97.7)	49 (96)	NS
Oxygen saturation, mean [sd]	92 [5.8]	93 [3.8]	NS
WBC, mean [sd]	14.23 [7]	13.23 [6.8]	NS
CRP, mean [sd]	3.4 [5.5]	1.97 [3]	NS

Results

Cause of Admission



Respiratory viral panel



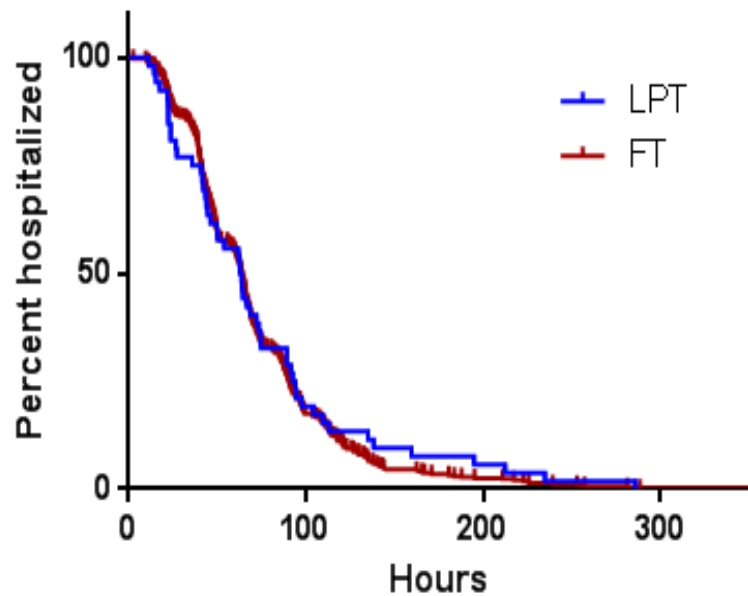
Results

Table 2. clinical course

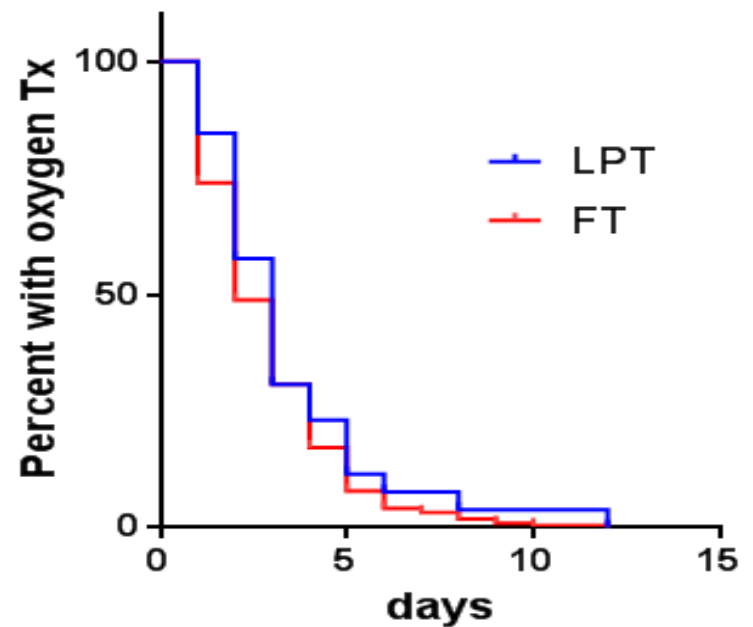
	Full Term	Late Preterm	p
LOS, hours, mean [sd]	71 [47.2]	74.6 [58.4]	NS
Developed fever , n (%)	183 (42.4)	18 (35.3)	NS
Duration of fever (days), mean [sd]	1.39 [0.66]	1.39 [0.6]	NS
Stay in an ICU, n (%)	17 (4)	2 (4)	NS
Duration of stay in ICU (days), mean [sd]	2.88 [1.1]	2 [0.95]	NS

Results

Length of stay



Supplemental oxygen



Results

Table 2. clinical course (cont.)

Treatment	Full Term	Late Preterm	p
Supplemental oxygen, n (%)	215 (49.8)	26 (51)	NS
Duration of oxygen treatment, (days), mean [sd]	2.9 [1.9]	3.38 [2.4]	NS
Antibiotic treatment, n (%)	213 (49)	26 (51)	NS
Duration of antibiotic treatment, (days), mean [sd]	3.77 [1.8]	3.35 [1.5]	NS
systemic steroid treatment, n (%)	182 (41.8)	25 (49)	NS
Duration of steroid treatment (days), mean [sd]	3.46 [1.7]	3.08 [1.4]	NS
Bronchodilator treatment, n (%)	370 (85.1)	42 (82.4)	NS
Diuretic treatment , n (%)	4 (1)	1 (2)	NS
anti reflux medication, n (%)	26 (6)	3 (5.9)	NS

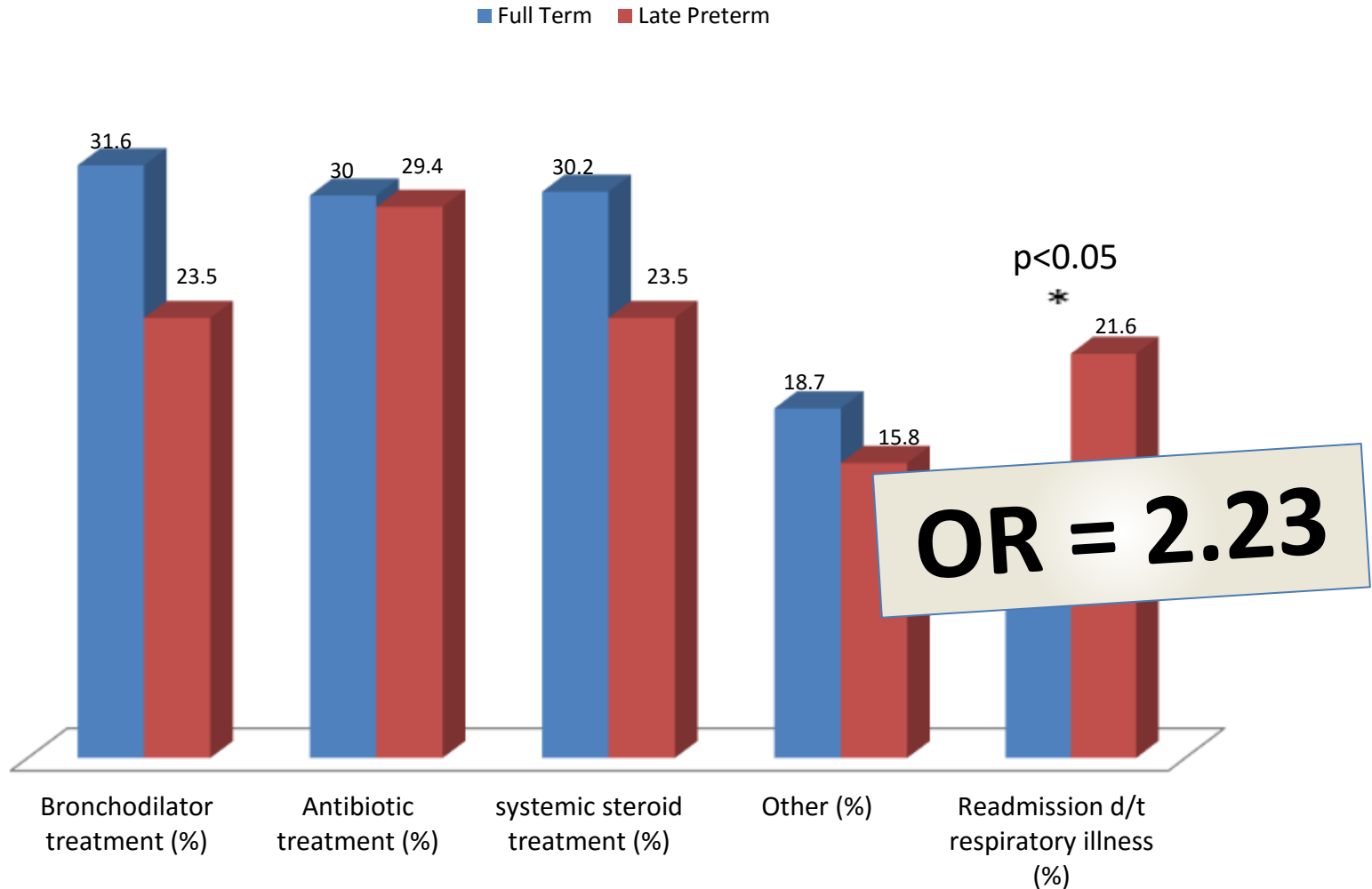
Results

Table 2. clinical course (cont.)

Ancillary studies	Full Term	Late Preterm	p
CXR, n (%)	384 (88)	45 (88)	NS
HRCT chest, n (%)	1 (0.2)	1 (2)	NS
Bronchoscopy, n (%)	2 (0.5)	1 (2)	NS
Echocardiogram, n (%)	9 (2.1)	3 (5.9)	NS
Sweat test, n (%)	15 (3.4)	0 (0)	NS
PCR for pertussis, n (%)	48 (11)	7 (13.7)	NS

Results

Treatment at discharge and readmission



Results

Diagnosis at readmission



89% Asthma or bronchiolitis

LPT Vs FT

OR = 27.08

For asthma or bronchiolitis

Discussion

1. Comparable clinical outcome
2. LPT Infants are at increased risk for recurrent hospitalizations d/t respiratory illness
3. Appropriate preventive therapy might reduce hospitalization

Acknowledgments

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