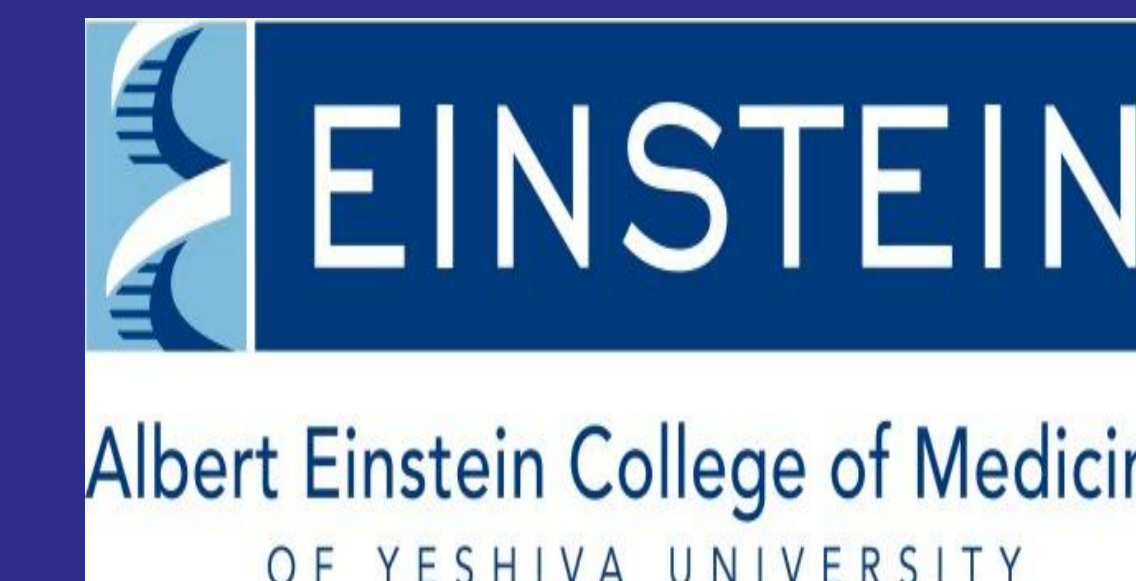




Comparison of Respiratory Status 3 VS 4 Hours After Bronchodilator Therapy In Hospitalized Asthmatics

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Background

Asthma exacerbations remain a common reason for hospital admission in the pediatric age group.

The goal for discharge in most hospitals is resolution of symptoms while receiving bronchodilator therapy every 4 hours (Q4).

Prior studies have suggested that discharge while receiving bronchodilator therapy every 3 hours (Q3) is safe and effective.

Current National Heart, Lung and Blood Institute guidelines do not recommend either Q3 or Q4 as a criteria for hospital discharge.

Objectives

To compare vital signs and respiratory physical examination findings 3 hours and 4 hours after bronchodilator therapy.

Methodology

This is a prospective study of pediatric patients 2-20 years old who were admitted for an acute asthma exacerbation from January 2012 - June 2013 in a urban community hospital.

Analysis included power, univariate and multivariate analysis. We estimated a sample size of 80 subjects ($\alpha=0.05$)

Methodology

Extracted data included the NHLBI Asthma classification, demographic information, BMI (in percentile), and vital signs and respiratory findings at Q3 and Q4 after bronchodilator therapy preceding discharge.

We excluded patients with incomplete data and those who failed initial spacing to Q4 prior to discharge.

Results

Table 1: Demographics

Patient Demographics	N=77
Age (Mean \pm SD)	7.06 \pm 5.31
Males (%)	59.7%
Hispanic (%)	51.9%
BMI 5 th -85 th percentile (%)	51.9%
Intermittent Asthma (%)	36.4%
Mild Persistent Asthma (%)	27.3%
Moderate Persistent Asthma (%)	29.9%
Severe Persistent Asthma (%)	6.5%

Table 2: Comparison of Vital Signs and Respiratory Exam at Q3 and Q4 hours

Parameters	1 st 3 h exam	1 st 4 h exam	p-value	2 nd 3 h exam	2 nd 4 h exam	p-value
Heart Rate	115.7 \pm 19.4	116.1 \pm 18.1	0.750	115.4 \pm 17.4	115.1 \pm 16.4	0.847
Respiratory Rate	26.3 \pm 7.2	26.1 \pm 6.9	0.797	25.9 \pm 6.4	26.1 \pm 6.6	0.632
Oxygen Saturation	97.0 \pm 1.9	96.9 \pm 2.2	0.769	96.8 \pm 2.3	97.2 \pm 2.2	0.164
Wheezing	28 (36.4%)	29 (37.7%)	1.000	23 (29.9%)	26 (33.8%)	1.000
Retractions	10 (13%)	9 (11.7%)	1.000	6 (7.8%)	4 (5.2%)	0.746
Decreased Air Entry	1 (1.3%)	3 (3.9%)	0.625	4 (5.2%)	2 (2.6%)	0.681

Conclusions

Vital signs and respiratory examination did not differ 3 hours versus 4 hours after two consecutive Q4 doses of bronchodilators in hospitalized asthmatic children. Secondary analysis did not show any relationship to gender, age, race, BMI and asthma severity.

These data suggest that earlier hospital discharge may be possible in the studied population.

References

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