

Thirty Day Readmission Rates for Acute Asthma Exacerbation in a Community based Hospital Setting

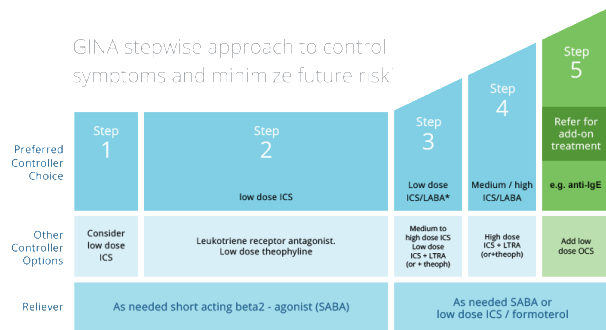
INTRODUCTION

- Asthma is a serious health concern in the United States affecting 1 in 12 adults, resulting in 439,000 asthma-related hospitalizations in 2013 alone. To date, there is a paucity of data determining the thirty day asthma re-hospitalization rates in US based community hospitals in patients discharged on combined inhaled corticosteroid (ICS) and oral corticosteroid (OCS), OCS or ICS alone. We hypothesize that the re-hospitalization rates in the combined treatment populations will be relatively low.

Components of Severity	Classification of Asthma Severity (≥12 years of age)			
	Intermittent	Mild	Moderate	Severe
Impairment	Symptoms ≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
Normal FEV ₁ /FVC: 5-19 yr 85% 20-39 yr 80% 40-59 yr 75% 60-80 yr 70%	Nighttime awakenings ≤2x/month	3-4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta ₂ -agonist use for symptom control (not prevention of EIB) ≤2 days/week	>2 days/week but not daily, and not more than 1x on any day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation
Lung function	+Normal FEV ₁ between exacerbations +FEV ₁ >80% predicted +FEV ₁ /FVC normal	+FEV ₁ >80% predicted +FEV ₁ /FVC normal	+FEV ₁ >60% but <80% predicted +FEV ₁ /FVC reduced 5%	+FEV ₁ <60% predicted +FEV ₁ /FVC reduced >5%
Risk	Exacerbations requiring oral systemic corticosteroids 0-1/year (see note)	≥ 2/year (see note)		
Recommended Step for Initiating Treatment	Step 1	Step 2	Step 3	Step 4 or 5

In 2-6 weeks, evaluate level of asthma control that is achieved and adjust therapy accordingly

GINA stepwise approach to control symptoms and minimize future risk



METHODS

- Type of Study: - Retrospective
- Inclusion Criteria: - Admission to UH Regional or UH Geauga for an acute exacerbation of asthma
- Between Jan 2011 - Dec 2015
- Exclusion Criteria: - COPD
- Fever >38°C
- >15 pack year history
- Pregnancy/Lactation
- Severe mental illness (past or present)
- Diabetes or Peptic ulcer disease
- Abnormalities on X-ray
- Extra-pulmonary infection

RESULTS

- 373 admissions between Jan 2011 & Dec 2015
- 319 between 18-65 years-old (mean age 44.98)
- 167 included after applying exclusion criteria
- Sex
 - Female: 67.1%
 - Male: 32.9%
- Ethnicity
 - African American 65.9%
 - White 33.5%
 - Asian 0.6%
- Hospitalizations in past year
 - Mean: 0.83 (min 0; max 8)
- ICS prior to admission
 - Prior ICS 50.3%
- Discharge regimen
 - Combined: 68.3%
 - OCS alone: 23.4%
 - ICS alone: 6.6%
- LABA at discharge
 - 60.7%

RESULTS (Continued)

	OCS	Combined	ICS	None	N
Total Admissions	39 (23.5%)	114 (68.3%)	11 (6.59%)	3 (1.80%)	167 (100%)
No Readmission	38 (23.7%)	108 (67.5%)	11 (6.9%)	3 (1.9%)	160 (100%)
Readmission <30 days	1 (14.3%)	6 (87.7%)	0 (0.0%)	0 (0.0%)	7 (100%)
% of Readmissions	2.56%	5.26%	0%	0%	4.19%
Admissions in past year	1.0	4.1	-	-	

P = 0.754

CONCLUSION

- The data showed the thirty-day readmission rate of patients discharged on combined therapy (5.26%) was higher, although not significantly (p=0.754), compared to that for patients discharged on OCS alone (2.56%).
- Our data suggests that there is no difference in 30 day readmission rates comparing discharge medications of OCS versus OCS plus ICS in community based hospital settings.
- Our data also suggests that less expensive discharge medications may be sufficient in decreasing readmission rates and decreasing patient's financial burden in community based hospital settings.
- We are currently in the process of revising the data to account for asthma severity. We are also increasing our sample size by adding patients from other hospitals within the UH system.