

Original Article:

Buyantseva LV, Brooks J, Rossi M, et al. RISK FACTORS ASSOCIATED WITH 30-DAY ASTHMA READMISSIONS. *J Asthma*. 2016 Mar 31:1-29.

Review by: Gregory Metz, MD, AE-C

A large amount of health care resources are utilized during emergency department visits and hospitalizations for asthma. The goal of this study was to identify risk factors for asthma-related hospital readmissions within 30 days of discharge. The hope is that by identifying these risk factors, targeted interventions can be employed to reduce early readmissions for asthma.

This study is a retrospective chart review from 2002-2012 of children and adult patients with the primary diagnosis of asthma who were readmitted for asthma either within the first 30 days of discharge as compared to those readmitted from days 30-365 following discharge. Data extraction from the charts included age, age of first admission, gender, race, smoking status, asthma characteristics, resource utilization information, number of ED visits, inpatient visits, urgent care visits, intubations, specialist visits, number of CXRs, comorbidities and asthma severity classification.

Of the 95 subjects identified with multiple asthma admissions, 39% were readmitted within 30 days and 61% were readmitted in days 30-365. There were no differences in demographic characteristics between these groups. Logistic regression analysis was used to identify predictors of readmission for asthma within 30 days of discharge.

Risk factors associated with early readmission included high frequency of prior admissions (OR 2.04, $p < 0.001$), frequent ED visits (OR 1.42, $p < 0.001$), inpatient hospitalizations (OR 2, $p < 0.001$), ICU stays (OR 3.72, $p = 0.014$), intubations (OR 2.92, $p = 0.027$) and prior CXRs (OR 1.12, $p < 0.001$). In addition, other risk factors for early readmission include GERD (OR 3.96, $p = 0.002$), history of chronic sinusitis (3.75, $p = 0.02$), anxiety (OR 2.44, $p = 0.046$), use of LABA alone (OR 154.3, $p < 0.001$) and non-allergic status. Interestingly, predetermined asthma severity, prior evaluation by ENT, allergist or pulmonologist, inhaler technique education and the use of spacer did not reduce the odds of 30 day readmissions in this small study.

Limitations of the study include a small and homogenous sample. Because data was extracted from charts, some data regarding asthma severity and other important factors were not available for all subjects. Assessments of medication non-adherence or inhaler technique was also not available. However, by identifying high risk features for readmission, the asthma educator can help target those at most risk and intervene before readmission occurs.

Table 1: Summary of Risk Factors Associated with 30 Day Readmissions for Asthma

Characteristic	Odds Ratio (95% CI)	P value
Prior Asthma Admission	2.04	p<0.001
ED visits for asthma	1.42	P<0.001
ICU stays	3.72	P=0.014
GERD	3.96	P=0.002
Chronic sinusitis	3.75	P=0.02
Anxiety	2.44	P=0.046
Use of LABA (long acting bronchodilator) alone	154.3	P<0.001