Childhood Asthma Hospital Discharge Medication Fills and Risk of Subsequent Readmission

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OBJECTIVE: To assess the relationship between posthospitalization prescription fills for recommended asthma discharge medication classes and subsequent hospital readmission.

STUDY DESIGN: This was a retrospective cohort analysis of Medicaid Analytic Extract files from 12 geographically diverse states from 2005-2007. We linked inpatient hospitalization, outpatient, and prescription claims records for children ages 2-18 years with an index hospitalization for asthma to identify those who filled a short-acting beta agonist, oral corticosteroid, or inhaled corticosteroid within 3 days of discharge. We used a multivariable extended Cox model to investigate the association of recommended medication fills and hospital readmission within 90 days.

RESULTS: Of 31 658 children hospitalized, 55% filled a beta agonist prescription, 57% an oral steroid, and 37% an inhaled steroid. Readmission occurred for 1.3% of patients by 14 days and 6.3% by 90 days. Adjusting for patient and billing provider factors, beta agonist (hazard ratio [HR] 0.67, 95% CI 0.51, 0.87) and inhaled steroid (HR 0.59, 95% CI 0.42, 0.85) fill were associated with a reduction in readmission at 14 days. Between 15 and 90 days, inhaled steroid fill was associated with decreased readmission (HR 0.87, 95% CI 0.77, 0.98). Patients who filled all 3 medications had the lowest readmission hazard within both intervals.

CONCLUSION: Filling of beta agonists and inhaled steroids was associated with diminished hazard of early readmission. For inhaled steroids, this effect persisted up to 90 days. Efforts to improve discharge care for asthma should include enhancing recommended discharge medication fill rates.

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