

226 Assessment of Pre-hospitalization Factors Predicting Pediatric Inpatient Admission in Acute Asthma Exacerbation



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RATIONALE: Acute asthma exacerbations (AAE) often require management in an emergency department (ED). Admission criteria from the ED to the pediatric floor or Pediatric Intensive Care Unit (PICU) are based on the patient's respiratory status following treatment in the ED.

We investigated whether pre-hospitalization background demographics, socioeconomic status, and chronic asthma management predict admission from the ED to the pediatric inpatient unit.

METHODS: Patients between 1-21 years visiting our ED with an AAE in 2019 (N=240) were included in this study. Each patient admitted to PICU was matched with two consecutive floor- and three ED-discharged patients as controls.

Background demographics, socioeconomic status, and chronic asthma management were evaluated in univariate and multivariate models.

RESULTS: Median age (Interquartile range) of PICU- (5.0; 3.0-11.7; p=0.004) and floor-admitted patients (5.0; 2.0-9.0; p<0.0001) were significantly lower than ED-discharged patients (9.0, 5.0-16.0). Age greater than five years (OR:0.2; CI95%:0.05-0.82), moderate persistent asthma (OR:6.0; CI95%:1.1-41.0), ED treatment (OR:8.7; CI95%:1.6-62.3) and inpatient admissions (OR:8.7; CI95%:1.6-62.3) in the preceding 12 months were independently associated with inpatient admission during the current visit. Gender, race, English fluency, parental availability, and health insurance were not associated with admission.

CONCLUSIONS: We report the differing distribution of background factors amongst admitted and ED-discharged patients with AAE. Our study justifies assessing these factors for modeling asthma inpatient admission in further studies. Furthermore, the predictor model will enable providers and caregivers to anticipate the level of care required at the onset of an AAE.

227 Satisfaction with Single Maintenance and Reliever Therapy (SMART) and As Needed Combined Inhaled Corticosteroid-Formoterol in Adults with Asthma



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RATIONALE: In 2019, the Global Initiative for Asthma (GINA) organization recommended ICS-formoterol as-needed or as single-maintenance and reliever therapy (SMART) as the preferred treatment for adults with asthma. Few studies have assessed inhaler satisfaction with these regimens, despite satisfaction with care being important in asthma management. Our objective is to determine patient satisfaction with SMART and as-needed ICS-formoterol as well as clinical factors associated with satisfaction.

METHODS: Adults with asthma prescribed either reliever ICS-formoterol or SMART for at least three months at outpatient clinical sites at Penn Medicine completed the Satisfaction with Asthma Treatment Questionnaire (SATQ; scores range from 1-7, with higher scores indicating higher effectiveness, usability and lower medication burden, adverse effects) and answered questions about the affordability of their inhaler regimen.

RESULTS: 59 participants completed the survey. Most reported high treatment satisfaction with a median SATQ overall of 5.9 and high median values in the four individual SATQ domains (effectiveness 6.3, ease-of-use 6.1, burden of medication 5.8, side effects and worries 5.8). Female sex was associated with inhaler satisfaction on multivariable analysis. Age was associated with reduced satisfaction in inhaler side-effects. ICS-formoterol

generally was affordable (median out-of-pocket cost \$22.90) and covered by insurance.

CONCLUSIONS: Inhaler satisfaction with SMART and as-needed ICS-formoterol were both acceptable for a cohort of U.S. adults with asthma. This may impact the approach of providers when discussing treatment options with patients. Further research is needed to better understand patient satisfaction with medications not only for asthma but for other atopic diseases.

228 Association of Quality of Life and Peak Expiratory Flow Rate with Step-down Treatment in Children with Asthma



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RATIONALE: The control of asthma and quality of life are expected to be correlated. The aim of this study is to identify the association of quality of life and peak expiratory flow rate (PEFR) with step-down treatment in asthmatic children.

METHODS: Children aged 7-17 years with asthma were evaluated for pediatric asthma quality of life questionnaire (PAQLQ), asthma severity, duration of inhaled corticosteroid (ICS) use, and medication use at the enrollment and 3 months after. They were asked to use peak expiratory flow (PEF) meter twice daily.

RESULTS: Of 57 children, the mean age was 11.7 ± 3.4 years, 57.9% were male. The median duration of ICS use was 4.7 (3.0-8.3) years. Thirty-two children (56.1%) had moderate persistent asthma. Twice daily compliance of PEF measurement dropped from 64% to 52.5% after 3 months. Thirty-one (62%) children with ≥50% PEF meter usage defined as good compliance had an average morning and evening PEF of 115.6 ± 29.2 and 117.5 ± 30.0 % predicted. A significant difference between duration of ICS use and PEF meter usage compliance was observed (3.6 years vs. 7.6 years in children with compliance ≥50% and <50%, respectively, p-value 0.001). Children with good compliance of PEF meter usage who had PAQLQ of 7 had a greater odds of ability to step-down asthma medications in the next 3 months (odds ratio 7.3; 95% confidence interval, 1.3-42.6, p-value 0.027).

CONCLUSIONS: In asthmatic children with at least 50% PEF meter usage, PAQLQ score correlates with ability to step-down treatment in children with asthma.