

Asthma: Health Care Delivery
9:30 AM - 10:30 AM

HEALTHY TOMORROWS: EFFECTIVENESS OF A HOME ENVIRONMENTAL AND NURSING INTERVENTION

Suzanne M Gaynor, DrPH*; Lori Rufano, BS; Elizabeth J Garland, MD; Suzanne Lachapelle, RN and Pat Monahan, RN. Community and Preventive Medicine, Mount Sinai School of Medicine, New York, NY and Little Sisters of the Assumption Family Health Service, New York, NY.

PURPOSE: Pediatric asthma hospitalizations and emergency visits in East Harlem are the highest in the nation. We evaluated the effectiveness of a home environmental and nursing intervention in children with chronic severe asthma.

METHODS: A questionnaire was administered to families 7 months post a one-year intervention. Of 23 children, 17 were contacted, 6 were lost to follow-up. Asthma severity, medication compliance, level of physical activity, and maintenance of home environmental improvements was determined. The number of clinic and ER visits, hospitalizations and school days missed was compared to pre-intervention values.

RESULTS: 94% of families were compliant with medications and 86% maintained home environmental improvements. 81% attended regularly scheduled clinic appointments. ER visits decreased from 139 to 20, hospitalizations decreased from 74 to 7 and school days missed decreased from 324 to 102. Over 80% of the children surveyed were able to participate in physical activities and most had their asthma symptoms under control. A one-year follow-up home evaluation has been completed to validate these results. These data are being analyzed and will be presented.

CONCLUSION: While home interventions properly implemented are time consuming and costly the trust relationship established with the families is invaluable. This approach is still less costly than one day in a hospital.

CLINICAL IMPLICATIONS: By controlling for asthma triggers in the home and reinforcing an asthma management plan including medication and clinic compliance, children showed a decreased need for ER visits and hospitalization while displaying an overall improved quality of life.

GRANT SUPPORT: This work is partially supported by Project MCJ-368712, MCH Program, DHHS.

EFFECTIVENESS OF AN ASTHMA CENTER IN IMPROVING CARE AND REDUCING COSTS IN PATIENTS WITH DIFFICULT-TO-CONTROL ASTHMA

Andrew G Villanueva, MD*; Leslie Mitchell, RPH; Diane Ponticelli, MS RN CS A/GNP and April S Levine. Pulmonary and Critical Care Medicine, Lahey Clinic Medical Center, Burlington, MA; Pharmacy, Lahey Clinic Medical Center, Burlington, MA and Quality Resources, Lahey Clinic Medical Center, Burlington, MA.

PURPOSE: In 1996 we established an Asthma Center (AC) as a quality improvement project to improve the care of our patients with difficult-to-control asthma. We have previously shown a significant reduction in emergency visits and hospitalizations in our patients (Chest 1998;114:253S). We present more data on patient satisfaction, medication usage, ER and hospital utilization, and cost.

METHODS: Since 10/96 adult patients that were hospitalized with asthma or were treated in our ER more than 2 times in 6 months were identified as potential patients. The patients were seen if referred by their primary care physician (PCP). Any patient with asthma referred by their PCP was seen in the AC; patients with COPD were excluded. The initial evaluation of patients included an assessment by AC personnel, spirometry and allergy skin testing, if needed. Treatment and follow-up plans were devised after the patient's case was discussed by team members. All patients received extensive education and established a relationship with one of the AC nurses and physicians. Measured outcomes included a patient satisfaction survey, pharmacy data on beta-agonist use relative to inhaled steroid use, ER and hospital utilization, and outpatient and inpatient costs.

RESULTS: From 10/96 to 4/00, 125 patients were referred and evaluated. The mean patient age was 47 years. 76% were women and 24% were men. Patient satisfaction was high, with 90% of respondents rating their visit in the AC "very good" to "excellent". Of the patients for whom pharmacy data was available before and after their AC evaluation, there was a reduction in the number of inhaled beta-agonist prescription filled relative to the number of inhaled steroid prescriptions filled (ratio of 1.65 before vs 1.05 after). The number of ER visits was 74 before AC vs 17

after AC (76% reduction). The number of hospitalizations was 38 before AC vs 4 after AC (89% reduction). The mean cost of the initial AC visit was \$770. The cost of ER care totaled \$34,706 before AC vs \$7,973 after AC. The cost of inpatient care totaled \$192,926 before AC vs \$20,308 after AC.

CONCLUSION: For patients with difficult-to-control asthma, evaluation and treatment in our AC resulted in high patient satisfaction, a significant reduction in the ratio of inhaled beta agonist prescriptions filled to inhaled steroid prescriptions filled, large reductions in ER and hospital utilization and resultant decrease in cost.

CLINICAL IMPLICATIONS: A multidisciplinary team specializing in the treatment of patients with difficult-to-control asthma can effect substantial cost savings while improving quality of care.

BUDESONIDE INHALATION SUSPENSION IMPROVES ASTHMA MANAGEMENT AND DECREASES CAREGIVER BURDEN COMPARED WITH NEBULIZED CROMOLYN SODIUM FOR YOUNG ASTHMATICS

Kevin Murphy, MD*; Charlotte McMillan, PhD; Sherahe Fitzpatrick, MD; Karen Walton-Bowen, MSc, CStat; Joseph Smith, MD and Mario Cruz-Rivera, PhD, MPH. Midwest Children's Chest Physicians, Omaha, NE and AstraZeneca LP, Wayne, PA.

PURPOSE: To compare the effects of nebulized budesonide inhalation suspension (BIS) and cromolyn sodium nebulizer solution (CSNS) on disease management in young children with persistent asthma and on caregiver burden. Asthma-related outcomes have been shown to be significantly improved for BIS compared with CSNS (JACI. 2000;104: S261).

METHODS: 335 children (2-6 years) with persistent asthma requiring inhaled anti-inflammatory therapy and their caregivers participated in this 52-week, open-label, multicenter trial. Following a 2-week baseline period, children were randomized to BIS 0.5 mg daily (qd or divided doses bid) or CSNS 20 mg qid for 8 weeks; dose titration was allowed for the remaining 44 weeks. Caregiver burden using the Paediatric Asthma Caregiver's Quality of Life Questionnaire (PACQLQ), global evaluations of therapy, and direct health resource utilization were assessed throughout the open-label period.

RESULTS:

	BIS (n=168)	CSNS (n=167)	p-value
Outcome			
PACQLQ total score, mean change*	13.52	9.02	0.020
Caregiver's global assessment			
"Great deal easier" asthma management	76%	29%	0.001
"Much better Health"	74%	37%	0.001
Physician's global assessment			
"Great deal easier" asthma management	74%	19%	0.001
Greatly improved symptoms	75%	21%	0.001
Health resource utilization			
Urgent care visits	11%	21%	<0.05
Unscheduled office visits	69%	78%	<0.05

*Higher scores indicate more positive responses.

CONCLUSION: BIS in young children with persistent asthma significantly eases asthma management and decreases caregiver burden compared with CSNS.

CLINICAL IMPLICATIONS: Improved asthma management with BIS correlates with enhanced caregiver quality of life, ease of asthma management, and decreased health resource utilization.

GRANT SUPPORT: Supported by AstraZeneca LP, Wayne, PA.