had asthma. Adolescents with asthma and symptoms who had limited physical functioning reported about 2.5 more physically and 2 more mentally unhealthy days than those who never had asthma and did not have limited physical functioning. Those who currently smoked reported about 1 more physically and 2.4 more mentally unhealthy days than those who never had asthma and did not smoke.

CONCLUSIONS. Adolescents with asthma and symptoms reported worse HRQoL. The interactions between adolescents’ smoking status and limited physical functioning and asthma status were significantly associated with physically and mentally unhealthy days.

REVIEWER COMMENTS. Results are consistent with previous studies of asthma being adversely associated with almost all domains of HRQoL. This study reiterates the need for pediatricians to address quality of life as part of routine assessment and monitoring of asthma in adolescents. Although results are based on self-reported, cross-sectional analysis and associations might not be causal, important issues are raised. In addition to assisting in the control of asthma symptoms, pediatricians should encourage adolescents with asthma to quit smoking and improve physical functioning with the goal of improved physical and mental health.

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Financial Barriers to Care Among Low-Income Children With Asthma: Health Care Reform Implications

PURPOSE OF THE STUDY. Increased cost sharing, or making people pay more out-of-pocket for their health care, is associated with decreased spending but without worse health outcomes. However, previous studies consisted of mostly healthy people without chronic disease. The objective of this study was to examine the associations between cost sharing/income and care seeking/financial stress among children with asthma under the Patient Protection and Affordable Care Act (ACA).

STUDY POPULATION. Telephone surveys were performed within the Kaiser Permanente Northern California health care delivery system. Respondents were 769 parents of children aged 4 to 11 years with asthma (59% response rate). Children receiving omalizumab or long-term oral corticosteroids were excluded.

METHODS. Survey items addressed various costs of asthma care, including switching to cheaper drugs, using less medication than prescribed, delaying/avoiding office or emergency department visits, and financial stress because of costs of asthma care. In California, the income limits in 2011 for children 6 to 18 years were 100% of the federal poverty level (FPL) for Medicaid and 250% of the FPL for CHIP (Children’s Health Insurance Program). Families were stratified by (1) current receipt of a subsidy or potential eligibility for ACA subsidy in 2014 and (2) cost-sharing levels for prescription drugs, office visits, and emergency department visits.

RESULTS. Parents at or below the 250% of the FPL with lower out-of-pocket costs were less likely to delay/avoid office visit (3.8% vs 31.6%; odds ratio 0.07, 95% confidence interval: 0.01–0.39) and the emergency department (1.2% vs 19.4%; 0.05, 0.01–0.25) compared with those with higher cost-sharing levels. Moreover, 33.3% of this group borrowed money to pay for their children’s asthma care. Commercially insured children in families who earned <250% of the FPL were more likely to avoid or delay care and more likely to borrow money than those who had higher incomes as well as those with Medicaid.

CONCLUSIONS. Cost-related barriers to care among children with asthma were concentrated among low-income families with higher cost-sharing levels. The ACA’s low-income subsidies could reduce these barriers but only for families who qualify under subsidy eligibility rules.

REVIEWER COMMENTS. Families making <250% of the federal poverty level who obtain insurance in the exchanges are more likely to avoid or delay care than face financial stress in caring for their children with asthma. These results may be conservative because indirect costs were not assessed and commercially insured children in this study had more generous benefits than the national average among employer plans. Moreover, children with severe asthma, who likely have even greater health care needs and costs, were excluded in this study. Although the ACA reduced the numbers of uninsured, obtaining appropriate health care is still difficult for many.

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Use of Leukotriene Receptor Antagonists Are Associated With a Similar Risk of Asthma Exacerbations as Inhaled Corticosteroids

PURPOSE OF THE STUDY. To assess the risk of asthma exacerbation in children with asthma treated with various controller medications, including inhaled corticosteroids (ICS), leukotriene antagonists (LTRA), and ICS/long-acting β-agonist combinations (ICS-LABA).
STUDY POPULATION. The study subjects included 26,191 controller-naive asthmatic children aged 4 to 17 years with uncontrolled asthma defined as at least 1 previous asthma exacerbation in the preceding year requiring an ED visit, hospitalization, or a short course of oral corticosteroids. Subjects were recruited from the databases of 6 private health plans (59%) and from the Tennessee Medicaid population (41%).

METHODS. This was a retrospective cohort study of children with uncontrolled asthma who were dispensed an ICS, LTRA, or ICS-LABA. The primary outcome was ED visits, hospitalizations, or oral corticosteroid use during the 365 days after initiation of controller medication. Adherence was assessed by examining the number of refills after the initial fill. Statistical methods were used to adjust for confounding variables. Race, type of controller medications, and rates of exacerbations differed between subjects in the private health plans and the Tennessee Medicaid populations, which were therefore analyzed separately.

RESULTS. In the Medicaid population, initial dispensing was an LTRA in 55%, ICS in 38% and ICS-LABA in 7%. Subjects who filled an LTRA and ICS-LABA were less likely to experience an asthma exacerbation (14% and 17%, respectively) than subjects who filled an ICS (21%). Adherence was poor with no refills in 46% of subjects on ICS-LABA, 40% of subjects on ICS, and 33% of subjects on LTRA. In the subgroup of subjects with a diagnosis of allergic rhinitis, treatment with an LTRA resulted in fewer ED visits compared with treatment with ICS. In the private health plans, initial dispensing was an ICS in 87%, an LTRA in 8%, and an ICS-LABA in 5%. There was no difference in the frequency of ED visits among the 3 groups (6%). Adherence was also poor with no refills in 50% of subjects on ICS, 45% of subjects on ICS-LABA, and 35% of subjects on LTRA.

CONCLUSIONS. Children who initiated LTRA had similar rates of asthma exacerbations as children who initiated ICS.

REVIEWER COMMENT. It is difficult to compare the results of this “real-life” study to those of randomized controlled trials, which have consistently showed superiority of ICS over LTRA for asthma control in children. It is interesting that the concomitant presence of allergic rhinitis resulted in decreased ED visits in subjects treated with an LTRA compared with ICS in the Medicaid population. An important message for the practicing pediatrician is the confirmation of poor adherence to prescribed regimens. Ultimately, and as with most other diseases, treatment of asthma should be individualized. Future studies are needed to identify clinical or biomarkers that would help predict treatment responsiveness to these different classes of controller medications. Until then, the choice of medication will continue to be adjusted based on the level of asthma control achieved.

Inhaled Corticosteroids and Bone Mineral Density at School Age: A Follow-up Study After Early Childhood Wheezing

PURPOSE OF THE STUDY. The goal of this study was to evaluate the association between inhaled corticosteroid (ICS) use and bone mineral density (BMD) in school-age children with a history of early childhood wheezing.

STUDY POPULATION. This study cohort included 89 children who were part of a larger, prospectively followed group who had been hospitalized for infection-induced wheezing at <24 months of age. Exclusion criteria included prematurity and chronic lung or heart disease.

METHODS. At the follow-up visit 12 years after hospitalization, corticosteroid use was assessed by patient-completed questionnaires and retrospective chart review. Cumulative doses of ICS use (converted to budesonide equivalents) and duration of ICS treatment were analyzed in 2 groups: 0 to 6 years and 6 to 12.3 years. Regular use was defined as >6 months of ICS use during the 6-year age period. Cumulative systemic corticosteroid use was calculated, and BMD was assessed by bone densitometry measurements of the lumbar spine (L2–4) and femoral neck region.

RESULTS. The study group included 65 boys and 24 girls. These children had an asthma prevalence of 40.2% at 7.3 years and 39.5% at 12.3 years of age. There were no significant differences in BMD among obese, overweight, and normal-weight children. Cumulative systemic corticosteroid use was not associated with BMD. In contrast, increasing cumulative ICS dosing was weakly associated with decreasing BMD in the femoral neck but not in the lumbar spine. Regular ICS use from only 0 to 6 years of age was significantly associated with lower BMD in the lumbar spine compared with children who had never used ICS. There was no difference in BMD between children who had regularly used ICS from 6 to 12.3 years of age and those who never received ICS.

CONCLUSIONS. Regular use of ICS before 6 years of age was associated with reduced lumbar spine BMD later in childhood, whereas high cumulative doses of ICS in childhood were associated with decreased BMD in the femoral neck.

REVIEWER COMMENTS. Differences in BMD between children who were or were not treated with ICS have not been consistently reported to date. This study suggests that...
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