Corticosteroids and Asthma: Too Much or Too Little?

Michael D. Cabana, MD, MPH

In this issue of Pediatrics, Farber et al1 present the results of an analysis of claims data for children with asthma who were enrolled in a large managed care Medicaid and Children's Health Insurance Program from 2011 to 2016. During each of the years analyzed, 42.1% to 44.2% of the children had ≥1 event in which an oral corticosteroid (OCS) for asthma was dispensed. This frequency of OCS-dispensing events is higher than frequencies reported in other areas of the United States (44% vs 23%).2 The authors also note that “most children with an OCS dispensing [event]...did not have other utilization suggesting poor asthma control,” and as a result, this frequency seems inappropriately high. It can be hazardous to make clinical judgments based on administrative claims data. Nevertheless, this frequency of OCS use is notable and worth further consideration.

There are several possible explanations for the high frequency of OCS-dispensing events in a particular geographic area. There may be issues associated with local irritants, allergens, or climate3-6 that may lead to an increased frequency of exacerbations for this population, which thus necessitates clinicians to prescribe OCS more than usual. Another explanation is the well-documented phenomenon of small area variation,7 in which providers in a region may be overprescribing due to local custom, culture, or habit. Inappropriate overprescription may also be due to unclear evidence or recommendations regarding when to prescribe OCS for children with asthma. The authors note that, “asthma guidelines need to provide clear guidance for providers on when the use of oral corticosteroids for asthma is not supported by evidence and when its use is not indicated in clinical practice.”1

However, another potential and contributing explanation is the odd finding in this study1 that the OCS-prescribing frequency for this population was so much greater than the inhaled corticosteroid (ICS)-prescribing frequency. Asthma exacerbations requiring oral systemic corticosteroids are one of several criteria used to determine the need for ICS controller prescription, and one would expect the frequency of ICS use to increase with OCS prescription. Although up to 44% of the children had ≥1 OCS-dispensing event, only 28% of children had an ICS-dispensing event.1 In a similar study of children with asthma enrolled in 85 different health care plans in the United States, the frequency of OCS-prescribing events was 23%; however, the frequency of ICS treatment was 25%.2 In another study, Elkout et al8 reported a frequency of OCS prescription of 16% in Scotland; however, the frequency of ICS treatment during the same time period was ~73%, >4 times the frequency of OCS use.

Numerous clinical studies have emphasized that ICS are effective in reducing the frequency of asthma exacerbations and OCS use, as well as emergency department visits and hospitalizations.9 Although there have been improvements in ICS use, there are still patient- and physician-related barriers to the prescription of ICS...
for children with uncontrolled or persistent asthma.\textsuperscript{10,11} The use of controller medications, such as ICS, continues to be one of the key clinical messages of the National Heart Lung and Blood Institute's guidelines for the proper management of asthma.\textsuperscript{12}

Farber et al\textsuperscript{1} provide a thought-provoking picture of asthma medication prescribing patterns for a Medicaid and Children’s Health Insurance Program managed care program. The high frequency of OCS use for asthma is stunning. However, perhaps the issue is not overprescribing by physicians but underprescribing instead. OCS overuse may be merely a symptom of another important prescribing issue; that is, the underuse of ICS for children with persistent asthma.

\textbf{ABBREVIATIONS}
ICS: inhaled corticosteroid
OCS: oral corticosteroid

\textbf{REFERENCES}
Corticosteroids and Asthma: Too Much or Too Little?
Michael D. Cabana
*Pediatrics* originally published online April 10, 2017;
Corticosteroids and Asthma: Too Much or Too Little?
Michael D. Cabana
Pediatrics originally published online April 10, 2017;

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://pediatrics.aappublications.org/content/early/2017/04/06/peds.2017-0598