Commentary
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Guidelines do matter

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In this issue (page 625), Aslam Anis and colleagues present a database study of asthmatic patients showing that those who use substantial amounts of short-acting β-agonists and very low amounts of inhaled corticosteroids fare worse than those with opposite drug use profiles (low use of short-acting β-agonists and high use of inhaled corticosteroids).[1] This is exactly what the promulgators of guidelines for the treatment of asthma[2] would expect, and one could argue that the article by Anis and colleagues should be used as an object lesson on the price of ignoring the guidelines. Before doing so, however, one would be wise to examine the results of this study closely.

Anis and coworkers examined 3 British Columbia Ministry of Health databases: those for physician visits, hospital admissions and drug reimbursement. Using the drug reimbursement database, they identified patients with the requisite drug use patterns and compared them in terms of health care utilization by using the other 2 databases to enumerate hospital admissions and physician visits. Obviously, this can only be done in a system in which patient identifiers are included in the relevant administrative files; until recently, only the Saskatchewan drug plan included such information, but other provinces, including British Columbia and Manitoba, are catching up. The patient population identified by Anis and colleagues was a function of the drug remuneration plan of British Columbia. They wisely examined data for patients under 51 years of age to avoid confusing cases of asthma with cases of chronic obstructive pulmonary disease, but drug remuneration data are available in such relatively young people only if they are on social assistance or if the family drug bill exceeds $600 annually. Because the annual cost of most types of asthma therapy is less than $600, Anis and colleagues wound up looking at health care utilization by people with relatively low incomes and socioeconomic status.

They studied 2 groups of patients. The patients in one group used 9 or more canisters of short-acting β-agonists per year and less than 100 μg of inhaled corticosteroids per day, whereas those in the other group used at least 400 μg of corticosteroids per day and less than 4 canisters of β-agonists. The latter group would be defined as having well-controlled asthma according to guidelines that assess control in terms of sparing use of β-agonists, whereas the former group would be characterized as receiving substandard treatment, although the cutoff dose of β-agonist was not very high — about 5 puffs per day.

Health care utilization was high in both groups. More than 5% of patients were admitted to hospital because of respiratory diseases during the year studied, and patients saw about 5 different physicians and had well over 10 physician visits on average. This pattern almost certainly relates to the social class of the patients studied.[3] Nevertheless, utilization was considerably higher in the group taking large amounts of β-agonists and low amounts of corticosteroids, and this could not be accounted for by differences in age, sex or level of social assistance between the groups. Of particular note were urgent or emergent hospital admissions, which were nearly twice as common in the group with high β-agonist use. Such admissions should be regarded as evidence of failure of therapy for a treatable disease; they are both dangerous and expensive.

The association between excessive health care utilization and substandard therapy shown by Anis and colleagues makes sense; bad treatment should result in more treatment failures than good treatment. It is most unlikely that these findings are coincidental. It could be argued that the patients who used large amounts of β-agonists had more severe asthma than those who did not. This might be true; short-acting β-agonists are regarded as rescue medications, and the group that used them a lot was presumably in greater need of rescue than the group that used them less. However, it is highly likely that they were in need of rescue because they were not taking inhaled corticosteroids, the best agents for asthma control.

Why were a substantial number of patients who needed inhaled corticosteroids not taking them? There are 2 possible explanations: first, the patients were told to do the right thing but did not comply, and second, the numerous physicians they saw did not tell them to do the right thing. The first explanation almost certainly plays a role. β-Agonists usually provide rapid symptomatic relief for asthma whereas inhaled steroids do not, so compliance is always better with the former than with the latter. Steroids are also relatively expensive, and this may create cash-flow problems for disadvantaged patients even if they will be reimbursed subsequently. On the other hand, patient compliance cannot be regarded as being independent of physician input. If a patient does not do the right thing, then we should assume that the physician has not convinced him or her that the right thing is better than the wrong thing. Therefore, physicians must bear some responsibility for the substandard care and excess health care utilization observed by Anis and colleagues.

A positive relation between short-acting β-agonist use and health care utilization has been observed before[4,5] and has been interpreted as being at least compatible with the hypothesis that these agents can be harmful.[6] In my view, a better interpretation of these results is that the use of short-acting β-agonists is a marker for asthma severity, because their regular use does not seem to cause clinical problems in relatively mild asthma.[7] The best explanation for the excessive health care utilization by the users of high doses of β-agonists is that these patients underused inhaled corticosteroids. The recommendation that inhaled corticosteroids be used in all but the mildest cases of asthma[2] stems from the recognition that these are by far the most effective drugs. Short-acting β-agonists should be reserved for use as rescue medications for short-term relief of symptoms. This is underlined by the study of Anis and colleagues, which also validates the current asthma treatment guidelines.[2]

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