

Spacers Edge Nebulizers for Acute Asthma in Kids

The findings are notable because spacers are cheaper than nebulizers and do not need a power source.

BY SHARON WORCESTER
Southeast Bureau

Spacers appear to have several advantages over nebulizers for the delivery of β_2 -agonists in children with acute asthma, according to a Cochrane review of the literature.

However, the findings should be viewed with caution, according to Dr. Paul Williams, chair of the section on allergy and immunology, American Academy of Pediatrics.

The review was recently updated from 2003 to include four new trials that were conducted in emergency department and community settings as well as to add findings from six trials of inpatients with acute asthma. It includes data on 2,279 children and 642 adults enrolled in a total of 31 trials.

The data show that length of stay in the emergency department was significantly shorter in children (but not in adults) who used a spacer, compared with those who used a nebulizer (mean difference of -0.47 hours).

Pulse rate also was lower in children who used a spacer (mean difference, 7.6% of baseline), Dr. Christopher J. Cates of

St. George's University of London and colleagues reported (Cochrane Database Syst. Rev. 2006;[2]:CD000052).

There did not appear to be any difference in admission rates in children treated with spacers vs. nebulizers (relative risk 0.65).

The findings are important because spacers are less expensive in the community setting, and unlike nebulizers, they do not require a power source, the investigators noted.

However, Dr. Cates and his associates also noted several limitations of the studies included in the review.

"Overall, this review supports the equivalence of wet nebuliser and MDI [metered-dose inhaler] with spacer administration of β_2 -agonists in the treatment of acute asthma, when treatments are repeated and titrated to the response of the patient.

"This review also suggests that paediatric patients given β_2 -agonists by spacer and MDI may have shorter stays in the ED, less hypoxia, and lower pulse rates, compared to patients receiving the same β_2 -agonist via wet nebulisation," the investigators wrote.

But, they added, the findings of the re-

view are limited by the relative lack of studies in the community setting, by the exclusion of patients with life-threatening asthma exacerbations from the studies, by the fact that few authors reported specifically on numbers of patients who were excluded from each study, and by a lack of reporting of intention to treat analyses.

In addition, the analysis of data regarding lung function tests was complicated by a lack of standardized reporting in many of the studies, and standard evaluations related to the changes that were measured were sometimes not reported.

"I agree with (these) comments mentioned by the authors. ... There are several cautions that should be expressed when presenting the results," said Dr. Williams, who also is with the University of Washington, Seattle.

For example, only two of the studies included in the review were conducted in a community emergency department; thus, the results may not be applicable to such settings, he said, stressing that more studies in this setting are needed.

In addition, the doses of albuterol given via spacer were different among the studies, which could be a source of confusion for the practitioner who is trying to decide whether to use the spacer or the nebulizer.

For the nebulizer, the doses are fairly

well defined and accepted, but for the MDI and spacer, the doses have not been well studied or defined and varied from 2 puffs every 20 minutes, to 1 puff every 12 seconds, up to 12 puffs per hour, Dr. Williams explained.

As recommended by the authors, more studies are needed using frequent dosing titrated to patient response, Dr. Williams agreed.

But of most concern, he said, is that the studies included in the review used specially trained nurses to administer the medications.

"In a community setting, many, if not most, nurses and perhaps even M.D.s are not familiar with different spacers and techniques for using spacers, nor the developmental stage necessary to use spacers of different types.

Not only are the varied dosing regimens confusing, but the quality of medication administration may vary from staff person to staff person and shift to shift," Dr. Williams said.

He added that he would like to see studies that look at a standardized regimen of dosing using the spacer and MDI. He said he would also like to see the dissemination of information on using spacers for children through a source such as the American Academy of Pediatrics online PediaLink Module (www.pedialink.org/index.cfm). ■

Talking, Teaching Are Key in Improving Asthma Management

BY KERRI WACHTER
Senior Writer

WASHINGTON — Better communication is the key to better asthma management, said an expert in pediatric asthma, who offered a few tips on improving communication with patients and parents at a meeting sponsored by the American Academy of Pediatrics.

The bottom line is that it is the family who manages a child's asthma on a daily basis. "You're not going to go home and manage your patient's asthma. It's really the family that's going to do a lot of the management," said Dr. Michael Cabana, director of general pediatrics at the University of California, San Francisco and UCSF Children's Hospital.

However, the best management plan won't work if the family doesn't adhere to the regimen, and adherence is closely linked to clinician communication and patient education, he said.

Research indicates that there are no good predictors of family/patient adherence to asthma management plans. "It's hard to predict which parents are going to be adherent to any specific recommendation," said Dr. Cabana.

Study results have consistently shown that less than 50% of patients adhere to daily medication regimens. In light of the difficulty in predicting which half of patients will adhere to their asthma regimens, all patients should be educated to ensure compliance, said Dr. Cabana. Communicating well and providing education

are as important as prescribing the right medication.

Dr. Cabana and his colleagues recently published the results of a nationwide, randomized controlled trial that demonstrated that patients whose physicians participated in a program to enhance their communication skills had better asthma outcomes after 1 year (Pediatrics 2006;117:2149-57).

According to one model, a patient's (or parent's) beliefs influence willingness to follow preventive or therapeutic recommendations. Families have to believe that their children are susceptible to asthma, that asthma is a serious health threat to their children, that the benefits of the asthma management plan outweigh the costs, and that they can carry out the components of the asthma plan confidently.

In terms of susceptibility, some families may resist the diagnosis of asthma, believing instead that the disease is feigned. Resisting the diagnosis reduces the likelihood that the family will follow the treatment plan.

With respect to the perceived seriousness of the disease, if the family thinks asthma is not serious, they are less likely to follow the treatment plan. On the other hand, if the family overestimates the seriousness of the asthma, they may follow the

plan but also may prevent the child from taking part in normal physical activities.

Although the benefits of therapy are clear to physicians, these benefits may be unclear to patients or irrelevant to their personal goals. However, the perceived costs of therapy are often obvious to families: Therapy represents a possible financial burden and harm to the child from medications; also, therapy is time consuming and difficult to carry out.

Fears about asthma medications among families are not trivial. Roughly 40% believe that these medications are addictive; 36% believe these medications are not safe for long-term use; and almost 60% believe that regular use will reduce effectiveness, said Dr. Cabana. In addition, many families lack confidence that they can manage an asthma attack at home.

But there is help. It comes in the form of specific communication techniques that are repeated and consistently used and that have been shown to enhance physician communication with patients as well as outcomes for patients:

- ▶ Nonverbal attentiveness, addressing immediate concerns, and giving reassuring messages all serve to relax and reassure patients so that they pay attention to what is being said.
- ▶ Interactive conversations and eliciting underlying fears help to improve the ex-

change of ideas and feelings and to gather information needed for diagnosis and treatment decisions.

- ▶ Tailoring messages, planning for decision making, and goal setting prepare patients to carry out the treatment at home.
- ▶ Nonverbal encouragement and verbal praise help build the self-confidence necessary to carry out the plan.

There also are several basic asthma concepts that must be understood by patients, if they are to use therapies successfully and control asthma triggers.

"I try to limit it to two or three key messages per visit," said Dr. Cabana, adding that he distributes and reinforces the messages over time through discussions and handouts.

The topics include:

- ▶ What happens during an asthma attack.
- ▶ How medicines work.
- ▶ How to take the medicines.
- ▶ How to respond to changes in asthma severity.
- ▶ Medication safety.
- ▶ Goals of therapy.
- ▶ Criteria for successful treatment.
- ▶ Managing asthma at school.
- ▶ Identifying and avoiding triggers.
- ▶ Referral for further education.

Many patients and families have questions about steroids because this topic comes up frequently in the media. The key is to ask what the specific concerns are. It may be necessary to point out the differences between anabolic steroids and anti-inflammatory corticosteroids or address growth concerns. ■

The best management plan won't work if the family doesn't adhere to the regimen, and adherence is linked to communication and education.