Our parent organization, being involved in education and advocacy on behalf of people with asthma, is interested in this aspect of peak flow monitoring as we are aware of the difference in mouthpiece design from one brand of monitor to the next.

I have been led to understand that a mouthpiece with an outside diameter of approximately 30 mm, with a length of 40 to 50 mm available for insertion into the mouth, is the most appropriate design to approximate the diameter of the trachea, encourage exhalation from the diaphragm, hold the tongue down and out of the way of mouthpiece orifice, and reduce the opportunity to “cheat” by using the spitting maneuver. As far as I am aware, this type of mouthpiece is standard in spirometry equipment used in laboratories and clinics; yet when we observe peak flowmeter mouthpieces, we see different diameters and shapes (round or elliptical).

This aspect of peak flow monitoring may be important in achieving good techniques and accurate readings. We would appreciate a response from the authors of the study to help us promote good asthma management strategies in New Zealand.

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REFERENCE

To the Editor:

The comments of Mr. Malloy regarding mouthpiece design for peak flowmeters are appreciated. Designs that improve the chance for correct technique and patient ease in using the devices are certainly important. Although his points regarding appropriate design may be valid, I am unaware of published data from adequate studies confirming the clinical significance of the mouthpiece dimensions he suggests. The American Thoracic Society standards do not mention mouthpiece design. In addition, the updated National Institutes of Health Expert Panel Report does not allude to the importance of mouthpiece design. In a literature review, only one paper discussed mouthpiece design (eg, one that facilitates a good seal).

Marketed peak flowmeters must conform to current standards, and each of them is reliable if used correctly. If further design changes maximize the chance for good technique and reliable results, those changes will be welcomed. Clinical data are needed to determine if such changes are required.

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REFERENCES

Is Heparin Daily Flushing Useful to Decrease the Incidence of Catheter-related Infections?

To the Editor:

Central venous catheterization has complications that can interfere with the clinical course of patients. In this sense, catheter-related infection is one of the main complications. Its incidence depends on multiple associated factors such as: insertion conditions, type of catheter, insertion site, maintenance time, and daily care. It has been reported that heparin may decrease the incidence of catheter-related infectious complications, preventing the initiation and propagation of intraluminal thrombus, and therefore, bacterial colonization. Nevertheless, to our knowledge, its efficacy remains doubtful, even more in children where references are scarce.

We have performed a prospective study with 78 consecutive children admitted to our pediatric ICU who need a central venous access. Clinical diagnosis, purpose and type of catheter, insertion technique, site and success rate, complications, and duration were recorded for each patient. All catheters received the same daily care, but in the last 33, we added a daily heparin flushing consisting of 500 IU of unfractionated heparin diluted in 2.5 mL of normal saline solution through each lumen. Ages of patients ranged between 2 months and 14 years (mean: 6 years). Mean maintenance time was 5 ± 5.3 days (range 1–44 days). In 90% of the cases, a 2-lumen catheter was used. The access sites mainly used were internal jugular (56%) and subclavian (32%). The insertion was deemed difficult in 24 cases (31%). Both study groups (nonheparin and heparin flushing) were similar when compared in relation to the other clinical variables.

The incidence of catheter-related sepsis and bacteremia in the heparin flushing group was 9% (n = 3) and in the nonheparin group was 22.2% (n = 10) (p < 0.01). Complications derived from heparin use were not found.

Our results suggest that prophylactic daily flushing with heparin through the lumens of central venous catheters may have a beneficial effect in the prevention of catheter-related infectious complications. Although controversial, this practice seems easy, feasible, cost-effective, and without relevant risks.

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