trials are needed to evaluate longer term effects on adherence, asthma control, lung function, and school absences.

PURPOSE OF THE STUDY. To determine if watching a brief video at pediatric office visits would improve metered-dose inhaler (MDI) technique in children with asthma.

STUDY POPULATION. Children with persistent asthma (n = 91) from 2 pediatric practices in North Carolina completed the study. The children were 7 to 17 years old, used an MDI, and had missed or incorrectly performed at least 1 step on an inhaler technique assessment.

METHODS. Participants were randomized immediately after a medical visit to the experiment or control group. The intervention group watched a brief 3-minute video in either English or Spanish. Separate videos were available for use of MDI with or without a spacer. Both inhaler videos provided an overview of the MDI device and specific instructions on proper use of the device. Children watched the videos on a laptop and were given a Web address and login information so that they could watch the video again after leaving the clinic. The control group watched a 3-minute video about nutrition in either English or Spanish. Children’s inhaler technique was assessed by a research assistant at baseline as part of the eligibility screen, immediately after the initial office visit and again at a 1-month follow-up. MDI technique was measured as number of steps completed correctly out of 8 possible steps.

RESULTS. Forty-six families were randomly allocated to the intervention group and 45 to the control group. Eighty-three families of 91 (91%) completed the 1-month follow-up visit. At baseline, children most frequently performed the following 2 steps incorrectly: forgetting to shake the MDI (69% for MDI with a spacer and 57% for MDI without a spacer) and not holding their breath for 10 seconds (96% for MDI with spacer and 94% for MDI without spacer). In the intervention group, there was significant improvement in MDI technique postintervention (mean = 1.12, 95% confidence interval [CI] 0.73–1.5) and at 1-month follow-up (mean = 0.87, 95% CI 0.47–1.26). The control group did not show statistical significance in MDI technique postintervention (mean = 0.03, 95% CI –0.36 to 0.42) or at 1-month follow-up (mean = 0.32, 95% CI –0.09 to 0.73). The between group mean difference of 1.08 steps was statistically significant (95% CI 0.53–1.63) immediately postintervention but not at 1-month follow-up (mean = 0.55 steps, 95% CI –0.02 to 1.11).

CONCLUSIONS. In children with persistent asthma, using a 3-minute video after a regularly scheduled pediatric office visit resulted in immediate statistically significant 1-step mean improvement in MDI technique. This improvement, however, was not maintained at 1-month follow-up.

REVIEWER COMMENTS. This was the first randomized controlled trial to assess whether a brief video intervention could be used to improve inhaler techniques in children. It is recommended by national guidelines that providers assess inhaler technique at each medical visit. Given time constraints of clinicians and asthma education metrics requirements from insurance payers, brief technique videos may offer a streamlined educational approach in the office setting. Spacer technique education offers a high-yield opportunity to improve asthma medication compliance.

Pragmatic Trial of Health Care Technologies to Improve Adherence to Pediatric Asthma Treatment: A Randomized Clinical Trial


PURPOSE OF THE STUDY. To test whether a speech recognition (SR) intervention leads to improved adherence with taking controller medications for asthma.

STUDY POPULATION. There were 1187 children, aged 3 to 12 years, with a diagnosis of persistent asthma and a prescription for an inhaled corticosteroid. This population was drawn from Kaiser Permanente Colorado, which is a large group-model health maintenance organization.

METHODS. The trial was 24 months in duration. Subjects were randomized to the computerized SR intervention or usual care. For the intervention group, SR telephone calls were made to the subjects’ parents when an inhaled corticosteroid refill was due or overdue. These calls were individually tailored using medical and demographic information from the medical record and parent’s answers to questions regarding desire to receive reminders, information about asthma, and other support. The main outcome measure was adherence to controller medications, measured as the possession ratio of medication over 24 months.
Using Videos to Teach Children Inhaler Technique: A Pilot Randomized Controlled Trial
Katherine McCormack and Harvey Leo
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The online version of this article, along with updated information and services, is located on the World Wide Web at:
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