patients with the common cold and no signs of bacterial sinusitis. The presence of unilateral maxillofacial pain, pain in the upper teeth, lack of response to nasal decongestants, and "double-sickening" (initial improvement followed by a worsening in symptoms) may require an alternative diagnostic approach.[1]

Eric A. Jackson, PharmD
Maria E. Pharr, MD
Alan Cementina, MD
University of Connecticut School of Medicine
St Francis Hospital and Medical Center
Hartford
E-mail: ejackson2@stfranciscare.org

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Corneal Abrasions Need Not Be Patched

Flynn CA, D'Amico F, Smith G. Should we patch corneal abrasions? A meta-analysis. J Fam Pract 1988; 47:264-70

Clinical question **Should we patch corneal abrasions?**

Background Traditionally, the treatment of corneal abrasions has included the application of an eye patch. In recent years there has been an increased awareness that leaving the eye unpatched may be a viable option. This analysis was done to determine whether patching is a useful treatment for corneal abrasions.

Population studied The authors identified 7 studies enrolling a total of 550 patients. The clinical trials met the following criteria: (1) subjects were at least 6 years old; (2) acute, simple corneal abrasions were due to either trauma or removal of a foreign body; (3) abrasions were unrelated to infection or contact lens use (these are normally treated without patching because of the increased risk of *Pseudomonas* infection); (4) eye patch intervention of at least 24 hours' intended use was compared with using no eye patch; (5) the trial was randomized and controlled; (6) outcomes measured were time to resolution of the abrasion, pain, and complication rate. Patients were primarily from emergency departments and eye hospitals. None were specifically from primary care settings.

Study design and validity A thorough search of MEDLINE (1966-1997) and the Science Citation Index was performed by 2 of the authors independently, with both obtaining the same search results. The only attempt to locate unpublished data was through "authors and local ophthalmologists"; they found none. One paper was excluded because it was written in a language other than English. The results of 2 studies were not presented in a format suitable for statistical analysis; thus they were included in the systematic review but not the meta-analysis. Two other studies were excluded from statistical analysis because of identical all-or-none responses in the patch and no-patch groups: 1 study had a 0% healing rate in both groups on day 1; the other had a 100% resolution of the abrasion in both the experimental and control groups at day 2. In the end, only 4 studies (n = 152) could be included in the analysis at day 1, and 3 studies (n = 246) at day 2. Because of the small sample size, a small difference between the 2 groups (favoring either the patch or no-patch group) may exist. Since the results were analyzed as a dichotomous variable (healing versus no healing), pooling of studies into a meta-analysis may not overcome this possibility. Studies included in the meta-analysis met the statistical criteria for homogeneity (their findings were similar).

Validity assessments of individual studies done by the authors were not rated on the basis of quality. Blinding of treatment assignment or outcomes assessment was not done in 6 of the 7 studies (in a practical sense, accomplishing this would be difficult). Only 2 studies identified the method of randomization, and only 1 of 7 reported an intention-to-treat analysis. All subjects were treated with an antibiotic, and 5 of 7 studies also used a cycloplegic. Four studies used a slit lamp to diagnose and assess healing of the abrasion, while 3 used fluorescein staining.

Outcomes measured The primary outcomes measured were healing rates and degree of pain. The secondary outcome measured was complication rate.

Results When healing rates were pooled, no statistically significant differences were found between the no-patch and patch groups on day 1 (relative risk [RR] = 0.87; 95% confidence interval [CI], .68-1.13) or on day 2 (RR = .90; 95% CI, .75-1.10). Five of the 7 studies found no difference in healing rates between the 2 groups, while 2 studies favored not patching.

In 4 of the 6 studies that evaluated pain, there was no difference between the 2 groups. Two of the 6 studies found significantly less pain in the no-patch group. There was no difference in complication rate between the patch and no-patch groups.

Recommendations for clinical practice **This analysis found no evidence to support the current practice of patching corneal abrasions. Given the**

potential harms of patching (loss of binocular vision, inconvenience, and possibly increased pain), patching of uncomplicated corneal abrasions is not recommended. Though patients in this analysis presented primarily to emergency departments, the results should apply to primary care settings as well, since these abrasions would probably be less complicated. This study did not examine the role of antibiotics and cycloplegics in treating corneal abrasions.

Montgomery Douglas, MD
Jamaica, New York
Alvin Strelnick, MD
Montefiore Medical Center
Bronx, New York
E-mail: mdoug24@aol.com

Oral Versus Vaginal Administration of Misoprostol for Labor Induction

Bennett KA, Butt K, Crane JMG, Hutchens D, Young DC. A masked randomized comparison of oral and vaginal administration of misoprostol for labor induction. Obstet Gynecol 1998; 92:4:481-6.

Clinical question **Are oral and vaginal misoprostol equally safe and effective for labor induction?**

Background There is accumulating evidence that misoprostol, a synthetic prostaglandin E_1 analog, given either vaginally or orally can effectively induce labor at a significantly lower cost than other induction agents. Excessive uterine contractions and potentially increased rates of caesarean sections and birth asphyxia remain a safety concern. Optimal dosage and route of misoprostol administration need to be determined before large and costly trials are carried out to address safety concerns.

Population studied Study subjects included pregnant women of at least 37 weeks' gestation with an indication for induction, a single live fetus, intact membranes, and cephalic presentation. Almost all of the patients were white, and all were receiving perinatal care from a Canadian referral center with an induction rate of 20%. Women younger than 18 years, with previous uterine surgery, nonreassuring fetal heart rate tracings, or contraindications to vaginal birth were excluded.

Study design and validity This was a masked randomized trial comparing 2 treatments. Eligible subjects were randomly assigned to receive a 50 µg dose of misoprostol either orally or vaginally every 4 hours until the occurrence of: a contraction frequency of 3 per 10 minutes; a nonreassuring fetal heart rate tracing; spontaneous rupture of membranes; or delivery. While identical doses of misoprostol were used in each group, the authors suggest that the vaginal route results in a threefold higher bioavailability than that of orally administered misoprostol. Both patients and clinicians were blinded to the route of administration of misoprostol through the administration of a placebo by the alternate route. Time to delivery was compared between the groups on an intention-to-treat basis.

Outcomes measured The primary outcome measured was time to vaginal birth. Secondary outcome measures included frequency of tachysystole (contraction frequency of more than 5 in a 10-minute period or 2 consecutive 10-minute periods) and hyperstimulation (exaggerated uterine response with late fetal heart rate decelerations or fetal tachycardia greater than 160 beats per minute) associated with route of administration. Fetal heart rate and uterine activity graph interpretations were done before unmasking the study groups. Maternal gastrointestinal side effects and patient satisfaction were determined through a survey. The authors also measured more significant outcomes, such as cesarean section rates and birth asphyxia, but indicated that 3400 to 5030 patients would be needed to detect a significant difference in these measures.

Results During the study period, 393 patients presented for induction; 308 were eligible. Of these, 17 patients refused enrollment and 85 patients were excluded because their attending physicians preferred alternative induction methods. Of the remaining 206 women, 104 were randomized to the oral group and 102 to the vaginal group. The authors indicate that baseline data from nonvolunteers did not differ significantly from that of the volunteers, but they did not characterize the nature of that baseline data. Follow-up was complete.

Vaginal birth occurred earlier on average in the vaginal group than in the oral group (846 minutes vs 1072 minutes, respectively; $P = .004$). There was an increased incidence of tachysystole ($P < .01$) and hyperstimulation ($P < .04$) in the vaginal group, but these differences did not reach statistical significance by the authors' conservatively preset level for secondary analysis of $P < .001$. There was an increased incidence of cesarean sections in the vaginal misoprostol group, but the study had inadequate power to determine the significance of this finding. There was no difference between groups in maternal gastrointestinal side effects and patient satisfaction.

Recommendations for clinical practice **Misoprostol given orally or vaginally effectively**