dependent. The authors conclude that SLIT is safe for use in adults and children.

**REVIEWER COMMENTS.** SLIT has been widely used in Europe in recent years, has been found to be efficacious by other studies, and has a good safety profile (supported by the meta-analysis). Another article in this same journal (Clin Exp Allergy. 2005;35:560–564) found SLIT to be safe in children younger than 5 years. SLIT is being studied in the United States as well and may be an option in the near future for treatment of allergic rhinitis.

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**The Efficacy and Safety of Heat-Killed Lactobacillus paracasei for Treatment of Perennial Allergic Rhinitis Induced by House-Dust Mite**


**PURPOSE OF THE STUDY.** Live *Lactobacillus paracasei* 33 (LP33) may effectively improve the quality of life for patients with perennial allergic rhinitis. It has been demonstrated that heat-killed lactic acid bacteria suppress specific immunoglobulin E synthesis and stimulate interleukin-12 production in animals. The aim of this study, therefore, was to evaluate the efficacy of heat-killed LP33 in the treatment of allergic rhinitis induced by house-dust mite in human subjects.

**STUDY POPULATION.** A total of 90 patients older than 5 years with perennial allergic rhinitis characterized by intermittent or continuous nasal symptoms for >1 year were enrolled in a randomized, double-blind, placebo-controlled trial and assigned to 3 treatment groups.

**METHODS.** Patients in groups A and B received 2 capsules per day of live or heat-killed lactic acid bacteria (5 × 10⁹ colony-forming units per capsule), respectively, over a period of 30 days, whereas those in group C received placebo capsules. A modified questionnaire on pediatric rhinoconjunctivitis-related quality of life was administered to all subjects or their parents during each clinical visit.

**RESULTS.** The overall quality-of-life score decreased for groups A and B compared with the placebo group in terms of both frequency (9.47 ± 2.89, 6.30 ± 2.19, and −3.47 ± 1.53, respectively; *P < .0001*) and level of bother (5.91 ± 3.21, 6.04 ± 2.44, and −2.80 ± 1.64, respectively; *P = .004*) after the 30-day treatment. The efficacy of the heat-killed LP33 was not inferior to the live variant. No obvious adverse effects were reported for either active-treatment group during the study period.

**CONCLUSIONS.** The results suggest that heat-killed LP33 can effectively improve the overall quality of life for patients with allergic rhinitis and that it may be efficacious as an alternative treatment.

**REVIEWER COMMENTS.** The hygiene hypothesis suggests that lack of early exposure to microorganisms is a factor in the recent rise in allergic disorders. Studies have shown the certain gut flora, including *Lactobacillus*, may have immunomodulatory effects that may be beneficial in regulating allergic responses. Concerns over safety of administering live bacteria as a therapeutic agent led Peng and Hsu to investigate the effectiveness of heat-killed lactobacillus in the treatment of allergic rhinitis. The authors demonstrate that the heat-killed version is effective in improving the quality of life of patients suffering from allergic rhinitis.

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**Surgical Management of Chronic Sinusitis in Children**

Ramadan HH. Laryngoscope. 2004;114:2103–2109

**PURPOSE OF THE STUDY.** To compare the outcomes of children treated for refractory chronic sinusitis with adenoidectomy, endoscopic sinus surgery (ESS), or adenoidectomy with ESS.

**STUDY POPULATION.** Children, 2 to 13 years old, with sinusitis that persisted after 6 months of medical treatment (eg, antibiotics, nasal steroids, decongestants, reflux medications). These children had surgery (adenoidectomy, ESS, or both) over the 10-year study period.

**METHODS.** This was a nonrandomized study in which children were followed prospectively every 3 months after the surgical approaches. Each child was evaluated preoperatively for allergy, immunodeficiency, and cystic fibrosis and had a sinus computed tomography (CT) scan to assess disease severity. Parents filled out a questionnaire to assess improvement every 6 months for 1 year. Improvement based on questionnaire reports and need for more surgery were the principal outcome measures.

**RESULTS.** A total of 222 children had surgery for sinusitis during the study period (11% of children referred for evaluation of sinusitis), and 183 had adequate follow-up. The 3 surgical groups were similar with regard to gender, asthma, allergy, smoke exposure, and day care attendance. The children who had adenoidectomy alone were younger and had less severe sinus disease on CT scan than those in the other groups. Children who had adenoidectomy/ESS showed the greatest rate of improvement (87%) and lowest need for more surgery.
Seventy-five percent of children after ESS alone were improved, and 13% of the children in this group needed revision surgery. The adenoidectomy group had improvement in 52% of its subjects, and more surgery was needed for 25%. Younger children (aged ≤6) had lower rates of improvement and needed revision surgery more than older children, with no difference in results between surgical groups. Children older than 6 years had the greatest improvement rate with adenoidectomy/ESS (96%). Children with asthma had lower rates of surgical success than those without (62% vs 80%); there was no difference in surgical success in children with and without allergies. For patients with asthma, adenoidectomy/ESS was superior. When CT scans showed mild disease, no differences were seen in the 3 surgical groups. With more severe disease on CT scan, adenoidectomy/ESS improved more patients (87%) than did ESS (72%) or adenoidectomy (46%) alone.

CONCLUSIONS. Surgery is recommended for children with chronic sinusitis refractory to medical therapy, and improvement is seen in most children. Adenoidectomy alone is recommended for children who are 6 years old or younger with mild sinus disease on CT scan. Adenoidectomy/ESS should be considered for older children, those with severe sinusitis, and those with asthma.

REVIEWER COMMENTS. Children with chronic sinusitis usually do not need surgery. For those whose conditions fail medical treatment, the choice of initial surgery (adenoidectomy, ESS, or both) remains problematic. This comparison of postsurgical results has several limitations. The patients were not randomly assigned to the groups, which was most evident in the adenoidectomy group; the children in this group were younger and had less severe disease than those in the other 2 groups. It is not surprising that the children in the adenoidectomy group would have a higher rate of additional surgery, because the threshold to perform ESS in a child after adenoidectomy alone failed is certainly lower than that of performing additional surgery on one in whom ESS failed. The postoperative survey was not validated, and objective measures of improvement (school days missed, number of antibiotic courses, etc) were not included. A comparable group treated without surgery was not studied. Despite these shortcomings, this study provides clinical indicators to assign appropriate surgery for the child with refractory sinusitis.

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Surgical Management of Chronic Sinusitis in Children
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