equally. For patients annoyed by bloody nasal discharge, fluticasone performs better. At the doses used in this study, the costs of the 2 treatments are comparable.

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■ ANTIBIOTICS FOR AOM IN CHILDREN YOUNGER THAN 2 YEARS

Damoiseaux RAM, Van Balen FAM, Hoes AW, De Melker RA. Antibiotic treatment of acute otitis media in children under two years of age: evidence based? Br J Gen Pract 1998; 48:1861-4.

Clinical question Should we routinely use antibiotics to treat children with acute otitis media (AOM) who are younger than 2 years?

Background The use of antibiotics for AOM is controversial because of the lack of consistent supporting data and the concerns about increasing antimicrobial resistance. Although many physicians in the United States routinely treat AOM with antibiotics, physicians in other countries do not. Meta-analysis of the treatment of otitis media in children of all ages found that from 7 to 17 children have to be treated with antibiotics for 1 to receive benefit (number needed to treat = 7 - 17).[1,2] Such a large range of effectiveness makes the decision to treat more difficult. One explanation for the variable results could be that antibiotic use is important for a particular subgroup, such as for children younger than 2 years, who may be more likely to follow an abnormal course of illness.[3] This systematic review and meta-analysis evaluated and combined the results of studies investigating antibiotic treatment in children of this age group.

Population studied Studies selected for inclusion in this review enrolled 832 children younger than 2 years of age along with older children with AOM. The data for children younger than 2 years were extracted for analysis.

Study design and validity Articles were located using the following key words on MEDLINE and EMBASE: otitis media, child, clinical trial, and placebo. References in those articles were also assessed. The meta-analysis included studies that used random allocation to different treatment groups, compared antibiotic therapy with nonantibiotic therapy, and provided specific data for children younger than 2 years. The quality of the studies was assessed by blinded reviewers using criteria in 4 categories: study protocol, blinding procedures, testing procedures, and statistical analysis.

This meta-analysis was limited by the small number of robust studies available for analysis. Only 6 studies met the main inclusion criteria. Their methodologic quality scores ranged from 27% to 73%. Only 4 studies provided quantitative data that could be separated for children younger than 2 years. Only 2 studies were truly placebo controlled. Of those, one included only recurrent AOM and the other only nonsevere episodes. No analysis of heterogeneity was reported.

Two other problems limit this analysis. Half of the included studies used myringotomy, either for therapeutic reasons or to identify the etiology of the infection. The maneuver might have improved outcomes, especially in children treated with placebo. Also, the diagnosis of AOM was likely variable across, and perhaps within, the studies. Although 3 studies assessed clinical signs of acute infection, the fundamental diagnosis of AOM was made by the subjective assessment of otoscopic appearance in at least 5 of the 6 studies. One study did not describe the diagnostic criteria.

Outcomes measured The primary outcome measured in all of the studies was symptomatic clinical improvement within 7 days of the start of treatment.

Results The authors found no statistically significant difference between treatment with antibiotic and placebo for children with AOM who were younger than 2 years, judged by clinical improvement within 7 days (common odds ratio [OR] = 1.31; 95% confidence interval [CI], 0.83-2.08). Restricting the quantitative analysis to studies with a methodologic quality of 60% or more did not change the results (OR = 1.42; 95% CI, 0.85-2.39).

Recommendations for clinical practice Although this study does not support the use of antibiotics for children with AOM who are younger than 2 years, it is not robust enough to recommend changing a physician's current practice. However, there are other more compelling research data to discourage the automatic use of antibiotics: the financial cost and potential side effects of antibiotic treatment, the increase in antibiotic resistance, and the reports that 80% of untreated children with AOM are pain-free within 24 hours. The potential benefits of treatment with antibiotics rarely outweigh their cost. This study can be added to the literature that discourages the casual use of antibiotics for treatment of AOM.

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■ TREATMENT OF RESTLESS LEG SYNDROME WITH PERGOLIDE

Earley CJ, Yaffee JB, Allen RP. Randomized double-blind placebo-controlled trial of pergolide in restless leg syndrome. Neurology 1998; 51:1599-602.

Clinical question Is pergolide effective in the treatment of restless leg syndrome?

Background Restless leg syndrome (RLS) affects between 2% and 15% of the population. Disturbances in the dopaminergic system are thought to play a role in the etiology of RLS. Levodopa, which demonstrated significant benefit in small randomized controlled trials, can cause a paradoxical worsening of symptoms (levodopa augmentation). Other agents that augment dopaminergic action (pramipexole, ropinirole, bromocriptine, and pergolide), as well as the anticonvulsant gabapentin, are currently being investigated for the treatment of RLS.

Population studied Patients presenting to a sleep center who met standard criteria for the disease and who had a minimum of 15 periodic limb movements of sleep per hour (PLMSs/hr) were considered for enrollment. The first 16 consecutive patients presenting to the center who met these inclusion criteria and who had not previously been treated with pergolide were enrolled. Seven of those 16 had not previously been treated for RLS, 5 were being treated with levodopa/carbidopa, 2 with propoxyphene, and 1 each with clonazepam and alprazolam.

Study design and validity Patients stopped their previous treatment regimens for RLS 4 days before the baseline assessment. They were then randomized in a double-blind fashion to pergolide or placebo. During the first 14 days, patients in each group were instructed to increase the dose taken at dinner and at bedtime until (1) the patient felt the benefits from the medication were adequate; (2) the maximum dose had been reached (0.65 mg per day); or (3) adverse effects occurred. After day 14, the dose remained constant for 5 days. The final pergolide dose could be from 0.05 mg twice daily to 0.3 mg at dinner and 0.35 mg at bedtime. All-night polysomnograms and a log of RLS symptom duration were obtained at baseline and on day 17 or 18.

Outcomes measured The primary outcome was the global improvement score (0% to 100% improvement) on day 18. Secondary outcomes included the number of PLMSs per hour and the number of hours per day with RLS symptoms.

Results Baseline characteristics (PLMSs per hour, sleep efficacy, age, and symptom duration) were not statistically different between groups. The median final daily dose of pergolide in the treatment group was 0.35 mg (7 capsules). Global improvement scores were 61% improved in the pergolide group compared with 19% in the placebo group ($P = .009$). The placebo group showed no statistically significant change from baseline for any of the secondary outcome variables. For patients treated with pergolide, however, the PLMSs decreased from 48.9 per hour to 14.5 per hour ($P < .001$) and the duration of RLS symptoms decreased from 7.0 hours per day to 1.8 hours per day ($P = .036$). Mild adverse events were common in both groups (unfortunately, "mild" was not defined by the authors). Adverse events rated as "severe" occurred in 4 patients in the pergolide group (stomach pain, increased dreaming, and constipation) compared with 2 in the placebo group (bad taste in the mouth and itchy eyes). RLS rebound or augmentation was not seen in either group. None of the patients discontinued treatment or had to decrease the dose of medication because of adverse events.

Recommendations for clinical practice **This study demonstrates the efficacy of pergolide in the treatment of RLS. Unfortunately, the number of patients studied was small and the follow-up period was short. It is still unknown whether treatment of RLS with pergolide will result in the same augmentation of RLS symptoms seen with levodopa/carbidopa. Given the difficulty of treating RLS, the known adverse effects of augmentation seen with levodopa/carbidopa, and the significant improvements in both objective and subjective measures seen in this clinical trial, long-term trials comparing the efficacy of pergolide with other agents that augment dopamine are needed.**

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■ INITIATING WARFARIN THERAPY

Crowther MA, Ginsberg JB, Kearon C, et al. A randomized trial comparing 5-mg and 10-mg warfarin loading doses. Arch Intern Med 1999; 159:46-8.