**Review**

**Efficacy of levodropropizine in the pediatric setting: a meta-analysis of published studies**

**Summary**
Cough in children is among the most common symptoms and may have a deep impact on children's and parents' sleep and quality of life, thus often requiring an empiric treatment with antitussive agents. Levodropropizine is a very well tolerated peripheral drug, while central cough suppressants (opioids and non opioid) may be associated with side effects that limit their use especially in children. After comprehensive literature search, a meta-analysis of 4 clinical studies of levodropropizine vs. control, including a total of 780 patients, was performed with the aim to evaluate the overall comparative efficacy of levodropropizine in the pediatric population. Meta-analysis of all standardized efficacy parameters (cough frequency, severity, and night awakenings) showed a highly statistically significant difference in the overall antitussive efficacy in favor of levodropropizine vs. control treatments (p=0.0044). The heterogeneity test for the efficacy outcome was not statistically significant (p=0.0856). Our meta-analysis indicates that levodropropizine is an effective antitussive drug in children, with statistically significant better overall efficacy outcomes vs. central antitussives (codeine, clomipramine, dextromethorphan), in terms of reducing cough intensity, frequency and nocturnal awakenings. These results further reinforce the favorable benefit/risk profile of levodropropizine in the management of cough in the pediatric setting.


**Introduction**
Cough in children is among the most common problems referred to pediatricians, and occurs more frequently in preschool than in older children. The etiology and management approach for cough in children differs greatly to that in adults, so the empirical approach commonly used in adults is unsuitable for children. Clinical evaluation of cough in children should include an assessment of environmental factors, particularly tobacco smoke, parental concerns and expectations. Most children with acute cough are likely to have an uncomplicated viral acute upper respiratory tract infection (URTI), but the possibility of a more serious problem, especially aspiration of foreign material, should always be considered.

Cough resulting from URTI, although usually self-limiting within 7 to 15 days, may be a distressing symptom that causes significant anxiety to parents for its frequency and severity. Cough may have a deep impact on the sleep of both children and parents, on the children's scholastic and sport activities and thus on their quality of life. Therefore, an empiric treatment with antitussive agents is often used in pediatric cough, even though the administration of inappropriate or unnecessary medications for cough may be associated with side effects. Mainly two classes of antitussive drugs are available for the treatment of cough in children: centrally acting (opioids and non opioids) cough suppressants, and peripherally acting antitussives. Codeine, dextromethor-