

Anti-Cholinergic Drugs and Wheezy Infants

Wheeze in infancy and early childhood is common and appears to be increasing. Most wheezing episodes in infancy are a result of viral infection. Bronchodilator medications such as beta-2-agonists and anti-cholinergic agents are often used to relieve symptoms, but patterns of use vary.

It is now clear that there are a number of causes for recurrent wheeze in this age group with less than half of affected individuals continuing to wheeze beyond the age of five. In many, factors such as pre-natal maternal smoking, appear to contribute significantly to the likelihood of recurrent wheeze while atopy can only be identified as a risk factor in a minority of patients. Furthermore it appears that these infants, unlike older children with atopic asthma, do not improve dramatically after bronchodilator therapy. The spectrum of sub-groups of wheezing infants is only slowly being defined but includes condition such as 'viral associated wheeze', atopic asthma, bronchiolitis and chronic lung disease of prematurity. There is currently no agreement on how to classify recurrent wheeze in these young children and there are no diagnostic clinical or laboratory investigations on which to base a diagnosis other than history in those with chronic lung disease of prematurity and the presence of widespread crepitation on auscultation in acute bronchiolitis. A recent review has effectively addressed this problem of use of anti cholinergics in the treatment of wheezy infants(1).

The methods of the review included the

searching of the Cochrane Airways Group trials register which is a detailed data base maintained by the Cochrane Airways group base at London. The authors also searched the reference lists of articles. Researchers in the field and industry sources had also been contacted. The data included in the review were randomized trials that compared anti-cholinergic therapy with placebo or beta-2-agonists in wheezing children under two years of age. In order to avoid the difficulties arising from the definition of various terms like wheezy bronchitis and asthmatic bronchitis the term recurrent wheeze was taken as the unifying criteria for trial inclusion. Children with acute bronchiolitis and chronic lung disease were excluded. Eligibility for inclusion and quality of trials were assessed independently by two reviewers.

Six trials involving 321 infants in three different settings were included in the meta-analysis(2-7). Compared with beta-2-agonist alone, the combination of ipratropium bromide and beta-2-agonist was associated with a reduced need for additional treatment, but no difference was seen in treatment response, respiratory rate or oxygen saturation improvement in the emergency department. No significant difference in length of hospital stay between ipratropium bromide and placebo; or between ipratropium bromide and beta 2-agonist combined with beta-2-agonist alone was reported. However, combined ipratropium bromide and beta-2-agonist compared to placebo showed significantly improved clinical scores at 24 hours. Parents preferred ipratropium bromide over nebulised water or placebo for relief of their children's symptoms at home.

The reviewers conclude that there is not

enough evidence to support the uncritical use of anti-cholinergic therapy for wheezing infants, although parents using it at home were able to identify benefits.

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REFERENCES

1. Everard ML, Kurian M. Anti-cholinergic drugs for wheeze in children under the age of two years. The Cochrane Library, Update Software, Oxford, UK, 1999, issue 4.
2. Henry RL, Hiller EJ, Milner AD, Hodges IG, Stokes GM. Nebulised ipratropium bromide and sodium cromoglycate in the first two years of life. Arch Dis Child 1984; 59: 54-57.
3. Mallol J, Barrueto L, Girardi G, Toro O. Bronchodilator effect of fenoterol and ipratropium bromide in infants with acute wheezing: Use of MDI with a spacer device. Pediatric Pulmonol 1987; 3: 352-356.
4. Naspitz CK, Sole D. Treatment of acute wheezing and dyspnea attacks in children under 2 years old: Inhalation of fenoterol plus ipratropium bromide versus fenoterol. J Asthma 1992, 29: 253-258.
5. Schuh S, Johnson D, Canny G, Resiman J, Shields M, Kovesi Tkerem E, *et al.* Efficacy of adding nebulized ipratropium bromide to nebulized albuterol therapy in acute bronchiolitis. Pediatrics 1992; 90: 920-923.
6. Wang E, Milner R, Allen U, Maj H. Bronchodilators for treatment of mild bronchiolitis: A factorial randomized trial. Arch Dis Child 1992; 67: 289-293.
7. Mallol J, Barrueto L, Girardi G, Munoz R, Puppo H, Ulloa V, *et al.* Use of nebulized bronchodilators in infants under 1 year of age: Analyses of four forms of therapy. Pediatr Pulmonary 1987; 3: 298-303.

NOTES AND NEWS

ANNUAL CONVENTION OF NATIONAL NEONATOLOGY FORUM

The Annual Conference of the National Neonatology Forum will be held in Mumbai on 4th and 5th November 2000. Concurrent pre-conference CME program on basic and advanced neonatology and a CME for Nurses will be held on 3rd November, 2000. For details contact Dr. Jayashree Mondkar, Organizing Secretary, Room No. 123, Department of Neonatology, L.T.M.G. Hospital and L.T.M.M. College, Sion, Mumbai-400 022. Tel. (O) 4076381-89, Ext. 260; Direct - 4034469, Res. 4226432. E-mail: iamond@vsnl.com.